
Dialogue Proceedings / Advancing Patient-Centered Malnutrition Care Transitions



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As people age, their health needs are likely to become more complex and impacted by chronic disease, social determinants of health, and nutrition. Good nutrition and a healthy diet are critical in influencing chronic conditions such as hypertension, diabetes, cardiovascular disease, kidney disease, gastrointestinal disorders, cancer, and obesity. Yet all too often, as patients transition from one point of care to another, their nutrition status is not evaluated, documented, or even included in patient health conversations. Beyond the hospital setting, it is rare for care coordination to occur with patients and their families to help prevent or intervene for poor nutrition or malnutrition that includes under-nutrition and over-nutrition.

Lack of sufficient malnutrition recognition and care across settings of care means patients are frequently at risk for developing negative health outcomes related to malnutrition, including increased risk of chronic disease, frailty, falls, and loss of independence.^{1,2} Worsened health outcomes can also result in increased healthcare services utilization. For example, in a longitudinal analysis, hospitalized malnourished patients had up to 100% higher in-hospital costs (\$25,200 vs. \$12,500) and a 54% higher likelihood of 30-day readmissions compared with non-malnourished patients.^{3,4} Moreover, the US economic burden of disease-associated malnutrition is estimated at \$157 billion annually.⁵

Recognizing these challenges, a multi-stakeholder group of health and community leaders and advocates came together on March 14, 2018 for a national Dialogue to focus on developing real-world solutions to better integrate nutrition risk identification and care into existing care transition pathways and accountable care models. The results of their discussion are the basis for these proceedings.



Background /

Malnutrition, defined as a nutrition imbalance including under-nutrition and over-nutrition, is a pervasive but often under-diagnosed condition in the United States. Malnutrition can include such concerns as macro/micronutrient deficiencies, obesity, and nutrition imbalances arising from acute or chronic disease and medical treatments. In the United States, many patients across acute,⁶ post-acute,⁷ and community settings^{8,9} meet the definition of being under-nourished. This number is even larger when accounting for individuals who are over-nourished,^{10,11} as reflected in Figure 1.

This prevalence is exacerbated among those who are already ill: Chronic diseases such as cancer; diabetes; and gastrointestinal, pulmonary, heart, and chronic kidney disease and their treatments can result in changes in nutrient intake and ability to use nutrients, which can lead to malnutrition.¹² Throughout these proceedings, the term malnutrition references people who are under-nourished or over-nourished.

Good nutrition has been shown to support a healthy and active lifestyle, improve health outcomes, and reduce healthcare costs. In contrast, poor nutrition or malnutrition can increase an individual's risk for functional disability, frailty, and falling,¹³ and inhibit their ability to achieve individual goals associated with recovery, strength, ability to manage their disease, and personal independence. Hospitalized malnourished patients may be at risk for readmission or complications post-discharge, with a recent analysis showing that hospitalized malnourished patients were found to have up to a five times increase in mortality¹⁴ and up to a 50% increase in readmissions when compared with non-malnourished patients.¹⁵ Accordingly, malnourished adults have been found to utilize more health services with more visits to physicians, hospitals, and emergency rooms.¹⁶ Malnutrition places a heavy burden on patients and their family/caregivers, clinicians, and healthcare systems. Fortunately, many of the adverse outcomes influenced by malnutrition are potentially preventable.¹⁷

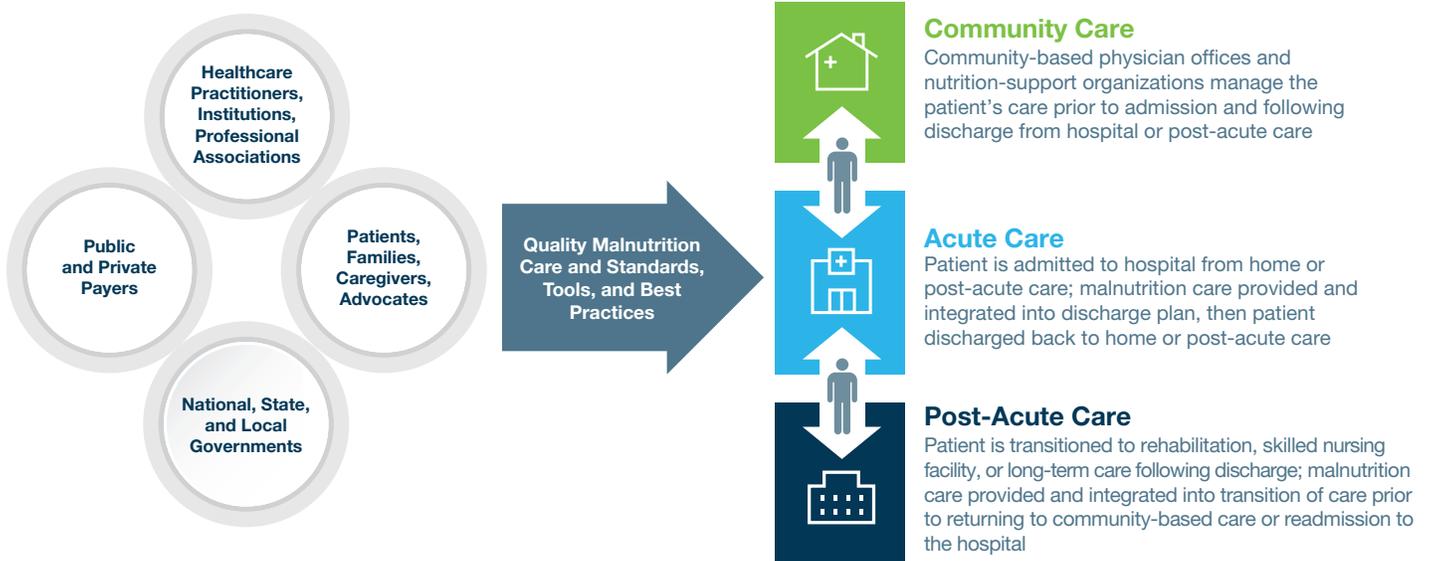
Figure 1. Nutrition and the US Population
Malnutrition Prevalence Across Care Settings



More than 40% of patients age 50+ are not getting the right amount of protein each day¹⁰

70% of adults are overweight or have obesity¹¹

Figure 2. Better Integration of Malnutrition Care into Care Transitions Is Necessary



To date, limited progress has been made to improve the prevention, identification, and management of malnutrition and malnutrition risk among patients in the United States, particularly as they transition across care settings and into the community. In 2000, the National Academy of Medicine (NAM) convened a workshop on “The Role of Nutrition in Maintaining Health in the Nation’s Elderly: Evaluating Coverage of Nutrition Services for the Medicare Population.” The workshop report summarized that nutrition services are fragmented and poorly integrated with the provision of other care, and efforts to enhance coverage and coordination of nutrition services in the community setting are needed.¹⁸ In 2012, NAM convened a second workshop to address nutrition services in the community setting. When discussing why nutrition was not included in transitions of care models, Eric Coleman, MD, developer of the Coleman Transitions of Care Model and workshop participant, explained that in his research he found that patients were often unaware of their nutrition needs and the potential impact on their recovery and health and thus did not cite nutrition as part of their healthcare goals.¹⁹

Nearly 20 years since the first NAM report, nutrition services continue to be poorly integrated with the provision of other care, gaps remain in coverage and coordination of nutrition

services, and patients are rarely engaged in discussions about their nutrition status outside the acute care setting. While significant national efforts have been introduced to advance care for patients in the hospital, such as the Malnutrition Quality Improvement Initiative (MQii), there continues to be a lack of programs, measures, and tools to help providers identify and manage poor nutrition and malnutrition as patients transition across care settings and into the community. Nutrition risk identification, care standards, and best practices have not been systematically incorporated into care coordination models (e.g., the patient-centered medical home, accountable care organizations), value-based care models, or population health management solutions (e.g., comprehensive shared care plans, transitional care models, or risk stratification models).

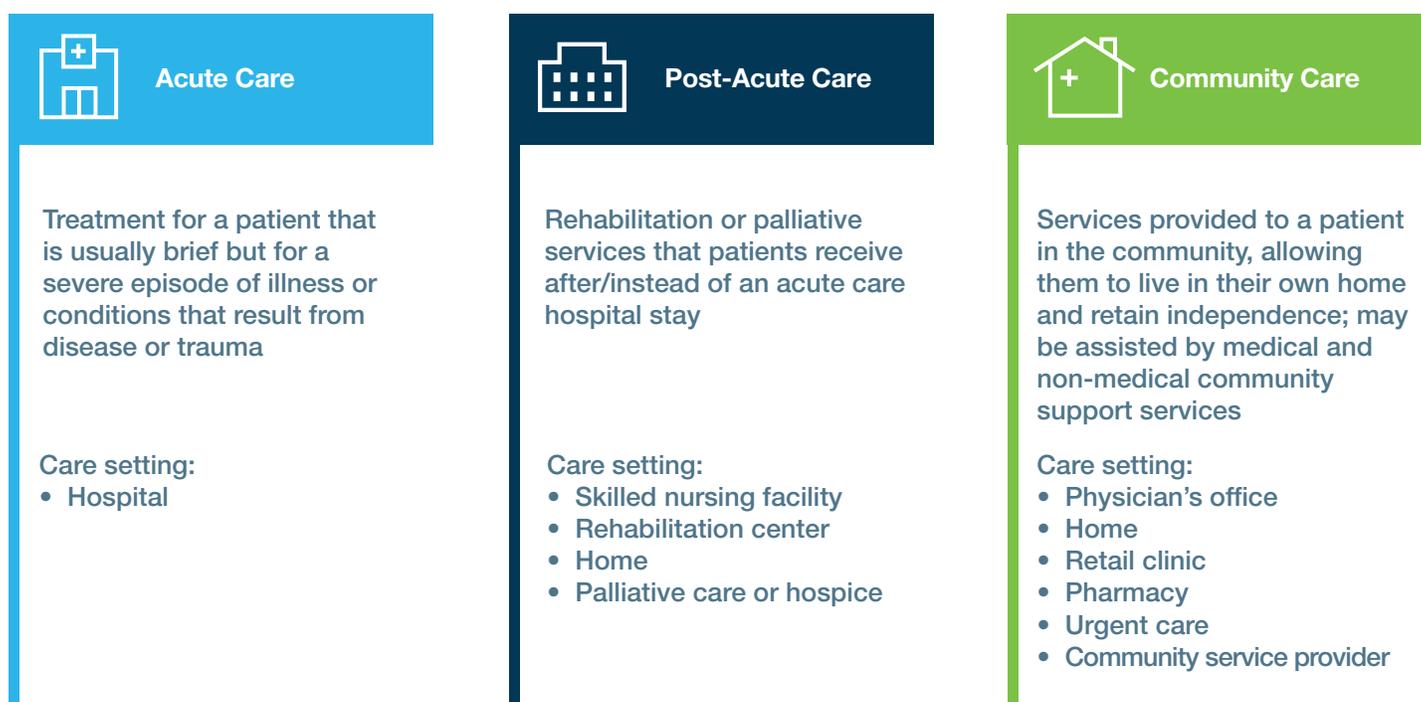
Given the impact of poor nutrition and malnutrition on patient outcomes, better integration of prevention, identification, and intervention strategies into the core components of these programs offers a unique opportunity to improve patients’ health and quality of life, while also reducing the economic and care burden on the healthcare system (Figure 2).

Developing Multi-Stakeholder Recommendations Through a National Dialogue /

While malnutrition has been recognized as a recurring problem in care transitions for nearly two decades, few clear tactical plans have been established to address malnutrition care gaps and enhance the consideration of nutritional needs as patients transition across settings. To better understand the barriers limiting delivery of high-quality care for individuals who are malnourished or at risk of malnutrition and transitioning across the acute, post-acute, and community care settings, and to

outline clear opportunities and action plans to address these challenges, Avalere Health, the Academy of Nutrition and Dietetics (“the Academy”), and the Defeat Malnutrition Today coalition convened a national Dialogue event, “Advancing Patient-Centered Malnutrition Care Transitions.” For the purposes of the Dialogue, acute, post-acute, and community-based care were defined as depicted in Figure 3.

Figure 3. Definitions of Care Type and Setting



The Dialogue took place on March 14, 2018, at the House of Sweden in Washington, DC. It sought to bring together multi-stakeholder representatives of organizations engaged in the delivery of care or support for malnourished and at-risk individuals, including providers, (e.g., physicians, dietitians), social workers, payers, professional societies, patient and caregiver advocacy groups, and community-based service providers, to address malnutrition-focused transitional care gaps (see List of Dialogue Participants).

The objectives of the day-long Dialogue were to:

1. Evaluate the current state of care transitions for malnourished patients and patients at risk for malnutrition;
2. Identify high-priority care transition gaps and opportunities to address these gaps across the care continuum; and
3. Outline key considerations for integrating malnutrition care into system-level care pathways to support patient goals and improve outcomes.

To launch the Dialogue, Avalere, the Academy, and Defeat Malnutrition Today reviewed the economic burden and prevalence of disease-associated malnutrition across care settings. The co-hosts then discussed efforts currently underway to enhance care delivery in the inpatient setting. These include the MQii, a nationwide, collaborative effort to advance evidence-based, high-quality, and patient-driven care for hospitalized older adults who are malnourished or at risk for malnutrition through a dual-pronged approach (Appendix 1).²⁰ They also include strategic efforts like the recent publication of the *National Blueprint: Achieving Quality Malnutrition Care for Older Adults*, which captured opportunities and recommendations to enhance care delivery across acute, post-acute, and community settings (summary goals and strategies in Appendix 2). Finally, the co-hosts highlighted the lack of existing real-world programs or hands-on tools to support the delivery of standardized, systematic malnutrition care beyond the hospital and across care settings.

Insights, examples, and recommendations were sought from multi-stakeholder participants. Among them, participants were asked to highlight care improvement and malnutrition prevention efforts currently underway with which they were familiar, as well as barriers that inhibited effective care support for patients who are malnourished or at risk of malnutrition.

The co-hosts outlined a framework to define and think about factors that inform system-level care pathways. System-level care pathways were defined as the process by which a patient receives care across all healthcare stages, including transitions across care settings, and the full range of interventions that a patient may experience at each stage. Participants affirmed that this encompassed the movement of patients between and across acute, post-acute, and community-based care settings.

Participants then considered determinants of patients' experience and outcomes across settings of care, such as the presence of diseases and chronic conditions, incentives driving care delivery, and population health management strategies in place. Namely, participants discussed the fact that nutrition status is rarely considered when accounting for factors contributing to a patient's health status and care needs. Another concern raised was that healthcare professionals often consider the term "malnutrition" as only related to patients who are under-nourished, rather than those who are under-nourished, over-nourished, or with obesity.

Participants highlighted that the ability to prevent and address malnutrition care gaps is further complicated by the fact that, while malnutrition is the technical term for the clinical diagnosis of under- and over-nutrition, it can be challenging to discuss using this terminology with patients and their family/caregivers, particularly in the community setting. Many patients and family/caregivers perceive that there is a degree of "fault" implied when a patient is diagnosed as malnourished, suggesting a failure to feed, provide necessary nutrition to, or take care of the individual. This exacerbates the challenge of helping patients and family/caregivers recognize when poor nutrition or nutrition insufficiencies do occur and decreases patients' opportunity to discuss and address the issue. These challenges may delay patients' ability to heal and experience a healthy lifestyle.

Participants also contemplated tools and resources that enable high-quality care and engagement for patients as they transition through the care continuum, such as shared decision making (SDM) tools, access to data, and clinical workflows. The framework for existing system-level care pathways depicted below

in Figure 4 outlines how patients move through and across the healthcare system, determinants that may impact patients' movement, and tools that support their care. Notably, the framework highlights the absence of consideration of nutrition status as a key determinant.

Figure 4. Framework for Existing System-Level Care Pathways

Determinants of Patient Experience and Outcomes Across Settings of Care

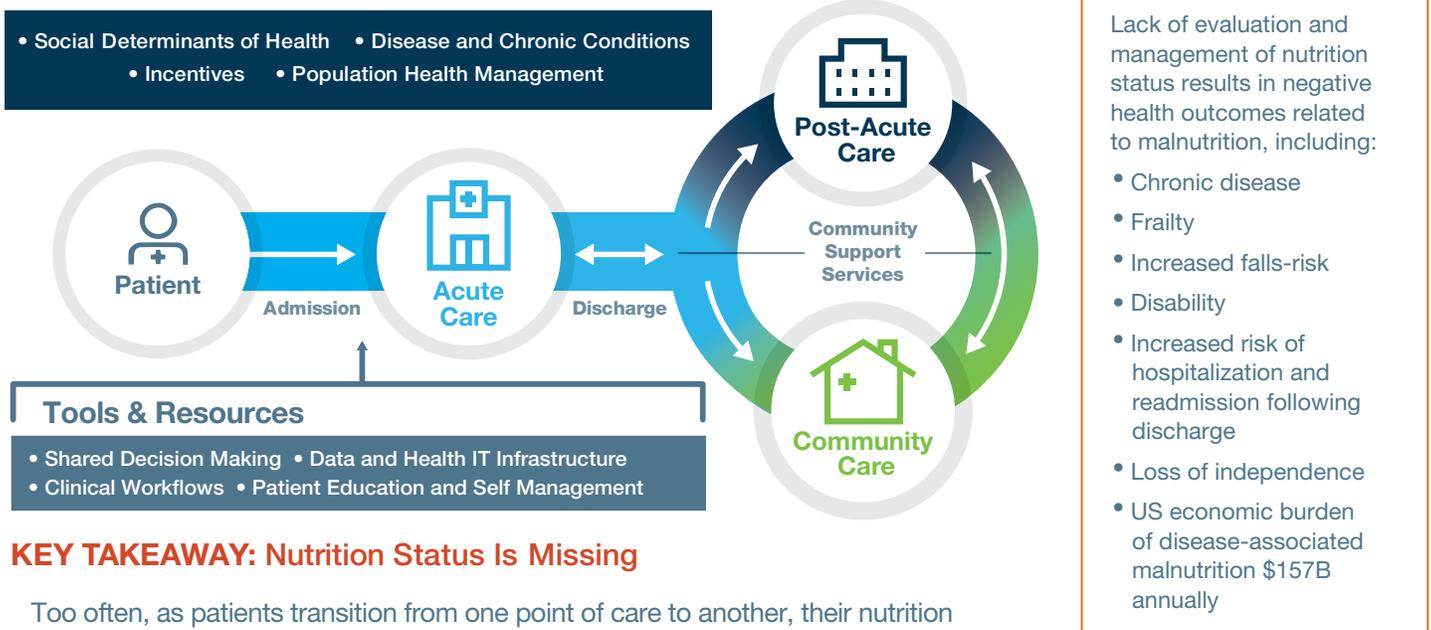
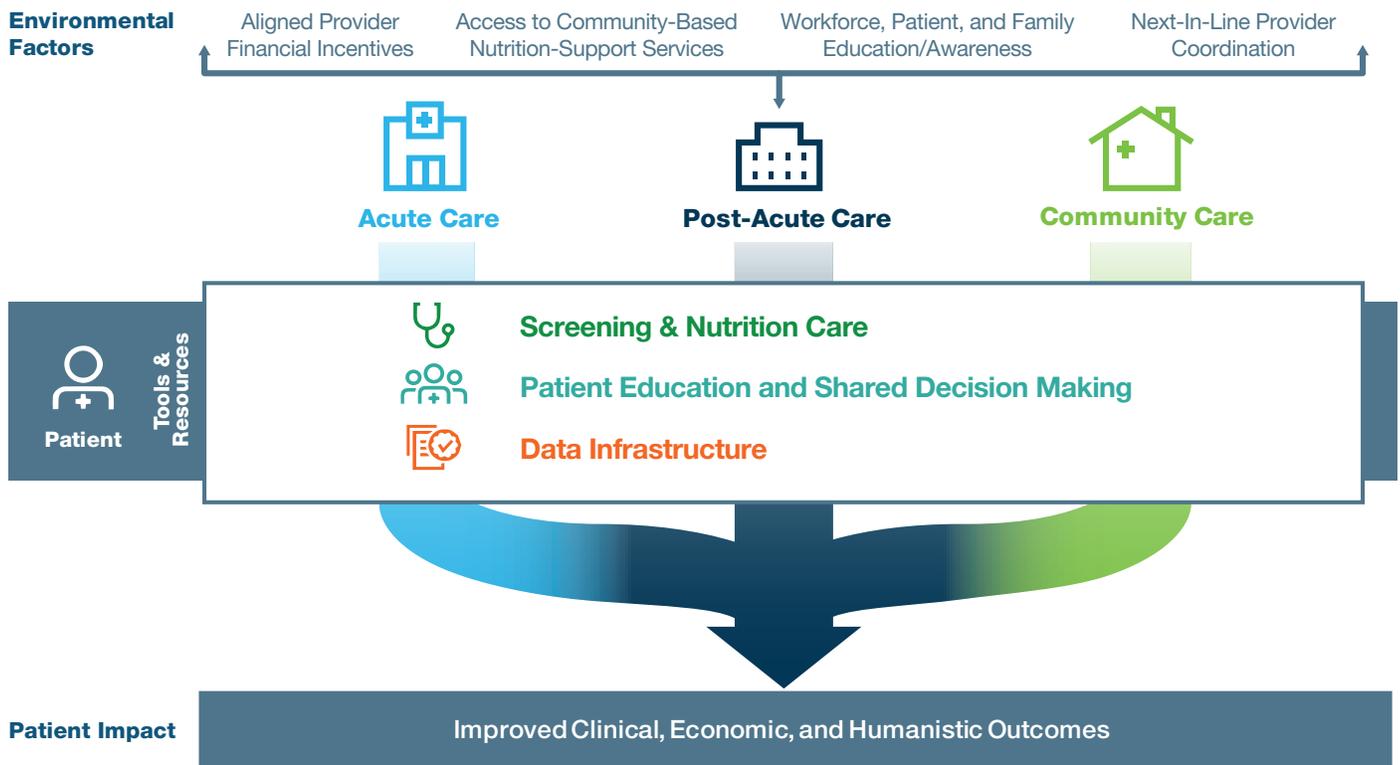


Figure 5. Framework for Integrating Malnutrition Care into System-Level Care Pathways

Site-specific Care Pathways For At-risk/malnourished Patient



Gaps and Solutions

Given that the current framework for system-level care pathways lacks attention to nutrition, participants were challenged to address three key questions to identify gaps and solutions for incorporating malnutrition care:

- What do we need?
- What are the barriers?
- How do we overcome them?

Participants were asked to consider these questions across three dimensions of the care pathway:

1. Screening & Nutrition Care
2. Patient Education and Shared Decision Making
3. Data Infrastructure

Ideas and recommendations were generated via group discussion and breakout sessions. To help ground this idea generation, various participants shared innovative local and national initiatives where nutrition care is being integrated as a core consideration in existing care protocols and programs across the United States (See Figure 5 and Appendices 3 and 4). Following the breakout sessions, all participants reconvened to align on next steps and opportunities to operationalize the recommendations identified.

Barriers to Coordinated Malnutrition Care Transitions /

Initially, participants identified a number of barriers inhibiting the effective delivery of malnutrition care as patients transition across settings of care, highlighting both findings from the literature and insights from experience. Some of the key barriers identified include:

Screening and Nutrition Care

1. Lack of patient education on impact of proper/good nutrition on disease management, recovery, and health outcomes
2. Perceived stigma or “blame” attached to term “malnutrition” during patient and family engagement

Patient Education and Shared Decision Making

1. Nutrition risk identification and care are not integrated into existing care transition pathways and accountable care models
2. Challenges to effective screening (e.g., forgetting to screen, lack of training to screen, lack of time during the office visit)
3. Insufficient hours for physician training on nutrition during medical school, and insufficient clinician knowledge of how to access and make use of other clinical and community-based support services and partners (e.g., dietitians, social workers) to address patients’ malnutrition needs.
4. Lack of coverage for nutrition assessment, education, counseling, and treatment

Data Infrastructure

1. Lack of widespread adoption of standardized malnutrition terminology and clinical standards across care settings to support data transfer
2. Lack of published, high-quality data demonstrating the impact of good nutrition on patients’ outcomes in the post-acute and community settings

Recommendations to Advance Malnutrition Care as Patients Transition Across Care Settings /

Clinicians, community and social service providers, patients and caregivers, payers, and policymakers can take action to address care gaps using key recommendations identified during the Dialogue. By partnering to (1) support systematic nutrition screening and care, (2) provide better education and shared decision making, and (3) improve data infrastructure to capture and share critical nutrition information, stakeholders can facilitate enhanced care coordination and better outcomes for patients across care settings.



Screening & Nutritional Care

-   Integrate nutrition status considerations into existing protocols, pathways, and models (e.g., disease-specific protocols and pathways, transitional care models)
-   Adopt and disseminate existing guidelines and protocols that recommend actions for optimal nutrition care (i.e., population health)
-   Implement systematic screening in post-acute and community settings using existing standardized malnutrition screening tools (Appendix 4)
-   Align incentives (e.g., policy and financial) with malnutrition care delivery beyond the hospital (i.e., community setting) to improve prevention, identification, and management
-   Engage and empower community-based clinicians and providers (e.g., retail pharmacists, home health workers, social workers, meal delivery organizations[‡], behavioral health counselors) to help patients achieve nutrition goals
-   Educate clinicians and social service providers about the impact of malnutrition/poor nutrition, their role in identifying it (including when and how to screen for malnutrition, as well as available tools and interventions such as medical nutrition therapy), and the importance of nutrition interventions
-   Educate payers on the impact of poor nutrition/malnutrition on patient outcomes and healthcare costs and the value of nutrition care coverage

Patient Education & Shared Decision Making

-   Expand the use of shared decision making and education tools and create new tools as needed to engage patients/families/caregivers in discussions about nutrition care and better inform clinicians in clinical and community settings on nutrition information
-   Deliver information to patients/families/ caregivers in a way that is sensitive to their understanding of malnutrition, culture, and health literacy

-   Educate patients/families/caregivers on how to discuss nutrition goals with patients' doctors and care providers
-   Educate patients/families/caregivers on how to support nutrition-related needs (e.g., preparing meals, coordinating food with medication management, providing oral nutrition supplements, changing tube feeding)
-   Partner with community-based organizations (e.g., Area Agencies on Aging and other providers) to raise broader population understanding of malnutrition and its impacts on patient health

Data Infrastructure

-   Adopt standardized malnutrition terminology and clinical standards in electronic health records (EHRs) to improve malnutrition risk identification and data transfer across care settings
-   Generate evidence and publish data reflecting the impact of nutrition status on clinically relevant outcomes in post-acute and community settings (e.g., admissions/readmissions, activities of daily living, quality of life)
-   Expand the use of tools (e.g., alerts, hard stops) and visibility of nutrition information in EHRs to enhance nutrition-related decisions and communicate nutrition information to relevant clinicians
-   Conduct informatics skill training for dietitians and other healthcare professionals supporting patients' nutrition needs
-   Identify mechanisms to share relevant social determinant-related data with clinicians and providers in a manner that is compliant with regulatory requirements and supports patient/family/caregivers' ability to maintain/improve patients' nutrition status
-   Create and adopt new technologies focused on malnutrition prevention and intervention (e.g., apps, wearables)

* This category encompasses clinical associations, clinical member organizations, social workers, mental healthcare providers, and other clinical/community and social service providers.
[†] This category encompasses patients and caregivers, as well as representatives of patients (e.g., patient advocacy groups, Patient and Family Advisory Councils).
[‡] Meal delivery includes home-delivered as well as congregate meals.

Operationalizing the Recommendations /

Participants were asked to identify specific actions that stakeholders—namely clinicians (e.g., dietitians, nurses, physicians, pharmacists), patients and family/caregivers, payers, and policymakers—can undertake to better address patients’ nutrition needs across settings of care and to integrate nutrition care considerations into existing system-level pathways with the following principles in mind:

Principle 1

Ensure that patients’ goals and preferences are central to the process

Principle 2

Aim to support high-quality care for patients who are malnourished or at risk of malnutrition across settings of care

Principle 3

Strive to design actions that fit within the workflow for patients’ other chronic or acute diseases

Principle 4

Collaborate cross-functionally to facilitate appropriate documentation and handoffs to providers across settings of care

Principle 5

Ensure that recommended workflows are adaptable to the resources, needs, and staff or support services available

Principle 6

Provide tools and guidance to help clinicians understand how to implement recommended care practices

Appendices 5 and 6 detail specific actions policymakers and each stakeholder group can implement to better integrate malnutrition care into patient care transitions.

Pilot Program to Integrate Malnutrition Care Into Transitions of Care Models /

The multi-stakeholder input received during the Dialogue highlighted the critical nature of incorporating malnutrition care considerations into transitional care and care delivered in acute, post-acute, and community care settings.

Given the impact of malnutrition on patient outcomes, and continued fragmentation and barriers to patient-centered transitional nutrition care, a pilot program will be established to implement and test a number of the recommendations outlined during the Dialogue. The goal of the pilot will be to advance systematic identification, treatment, and management of patients who are malnourished or at risk for malnutrition as they transition across care settings.

The pilot will seek to engage hospital-based teams and community-based clinicians and service providers (e.g., primary care group practices, dietitians, meal providers, and others) to integrate patient-centered nutrition care into existing care transition pathways or models. Specifically, the pilot will aim to ensure interventions and follow-ups for nutrition care are in place when patients are discharged from the hospital and to improve

recognition and management of patients' nutrition risk prior to their admission to a hospital and/or as a component of chronic disease management.

While multiple infrastructure and environmental barriers are still in place, the pilot will seek to identify and disseminate innovative approaches and tools that can help close transitional care gaps and accelerate widespread adoption of optimal nutrition care.

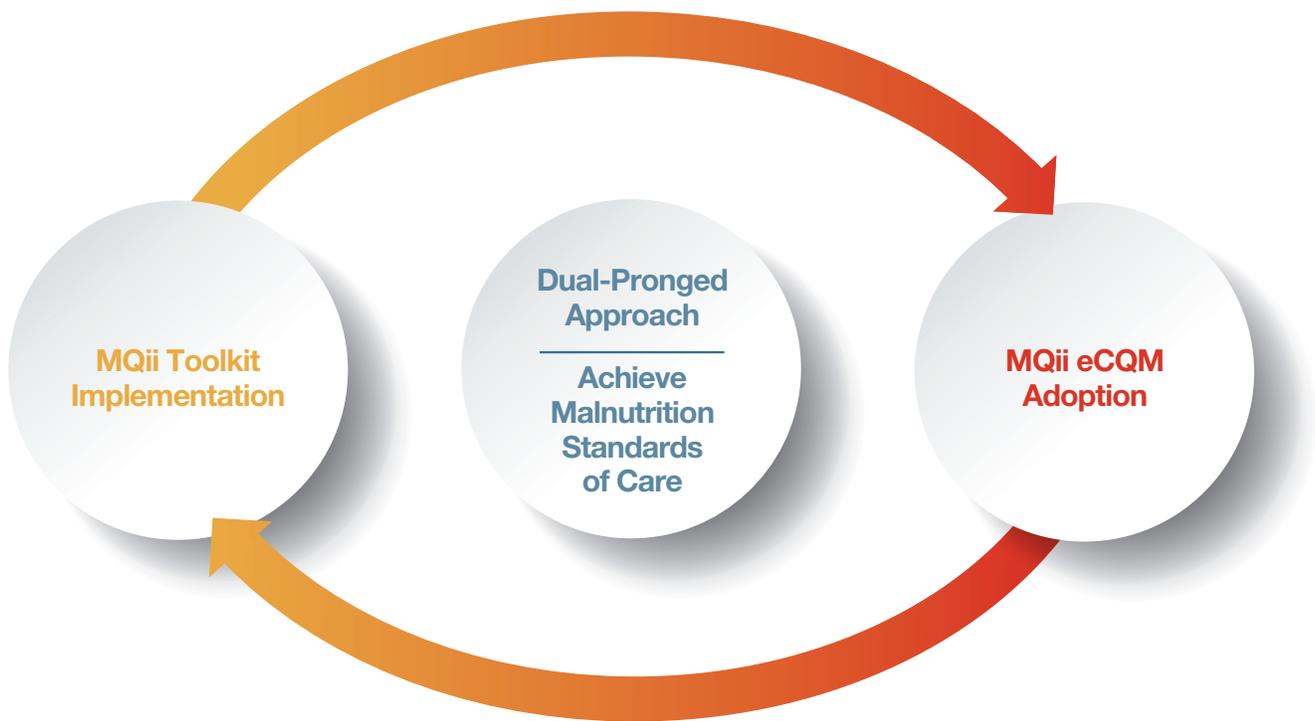
In parallel to the pilot, it will be critical for providers, patients and family/caregivers, policymakers, payers, and others to continue to come together to remove barriers by seeking opportunities to integrate optimal nutrition care into national quality and care coordination models and programs.

Stakeholders are encouraged to take immediate steps, individually and with partners, to integrate malnutrition prevention, identification, and intervention strategies into care pathways and models. This will improve patient outcomes and quality of life, facilitate population health management goals, and reduce the economic and care burden on the healthcare system.

Appendix 1: Dual-Pronged Approach to Advance Malnutrition Care for Hospitalized Older Adults* /

The Malnutrition Quality Improvement Initiative (MQii) helps hospitals achieve malnutrition standards of care through a dual-pronged approach, offering a novel patient-centered, interdisciplinary MQii Toolkit to guide malnutrition quality improvement and four de novo electronic clinical quality measures (eCQMs) to track and evaluate changes in care provided.

The MQii Toolkit provides practical resources to enable hospitals to achieve optimal nutrition standards of care



Data reported from eCQMs will help hospitals demonstrate their success in meeting the standards of care

*For additional information on the Malnutrition Quality Improvement Initiative and the dual-pronged approach, visit the MQii website at <http://www.MQii.Today>.

Appendix 2: Goals and Strategies of the National Blueprint: Achieving Quality Malnutrition Care for Older Adults /

In March 2017, the Malnutrition Quality Collaborative published the *National Blueprint: Achieving Quality Malnutrition Care for Older Adults*, which outlined four goals and associated strategies for achieving quality malnutrition care for older adults.[†]

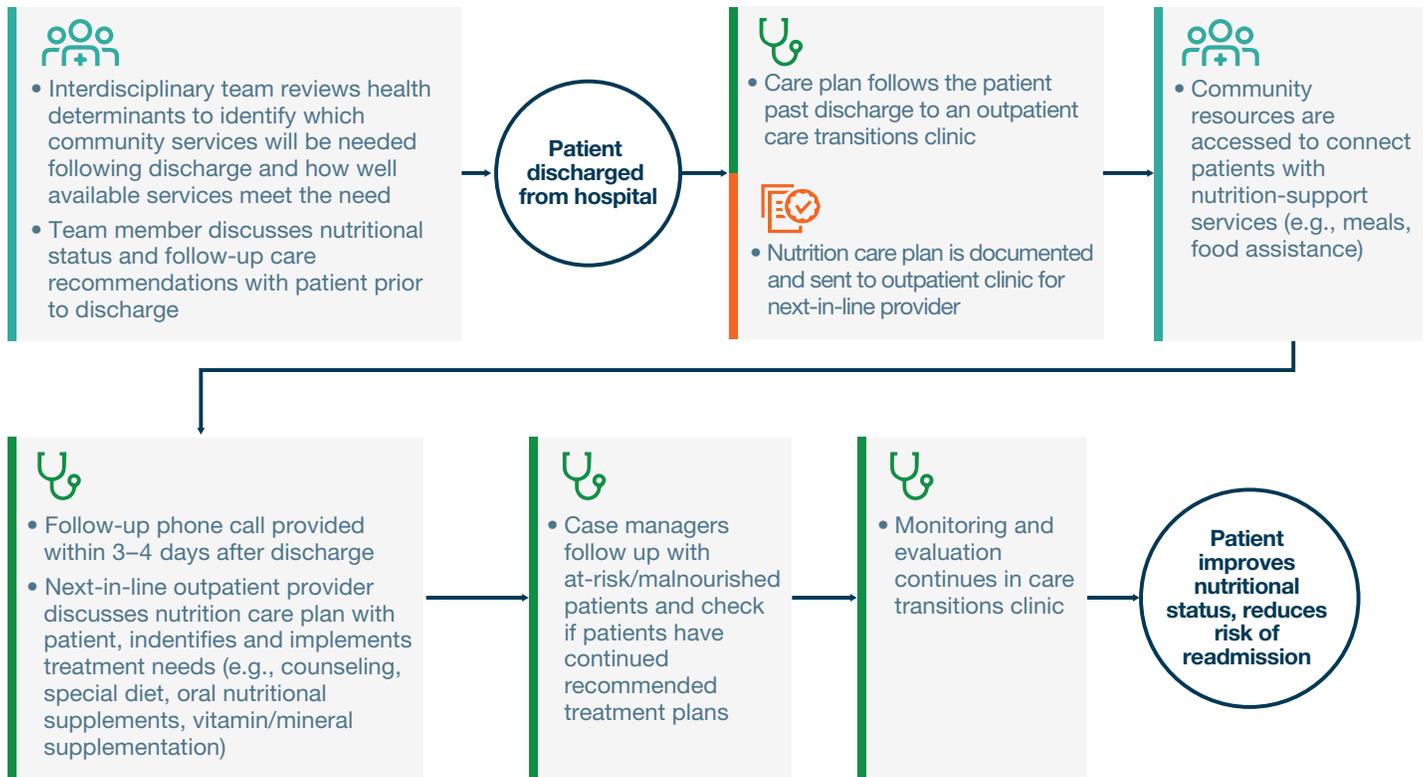
Goal 1	Improve Quality of Malnutrition Care Practices
Strategies	
<ol style="list-style-type: none"> 1. Establish Science-Based National, State, and Local Goals for Quality Malnutrition Care 2. Identify Quality Gaps in Malnutrition Care 3. Establish and Adopt Quality Malnutrition Care Standards 4. Ensure High-Quality Transitions of Care 	
Goal 2	Improve Access to High-Quality Malnutrition Care and Nutrition Services
Strategies	
<ol style="list-style-type: none"> 1. Integrate Quality Malnutrition Care in Payment and Delivery Models and Quality Incentive Programs 2. Reduce Barriers to Quality Malnutrition Care 3. Strengthen Nutrition and Dietetics Professional Workforce 	
Goal 3	Generate Clinical Research on Malnutrition Quality of Care
Strategies	
<ol style="list-style-type: none"> 1. Evaluate Effectiveness and Impact of Best Practices on Patient Outcomes and Clinical Practice 2. Identify and Fill Research Gaps by Conducting and Disseminating Relevant Research 3. Track Clinically Relevant Nutritional Health Data 	
Goal 4	Advance Public Health Efforts to Improve Malnutrition Quality of Care
Strategies	
<ol style="list-style-type: none"> 1. Train Healthcare Providers, Social Services, and Administrators on Quality Malnutrition Care 2. Educate Older Adults and Caregivers on Malnutrition Impact, Prevention, Treatment, and Available Resources 3. Educate and Raise Visibility with National, State, and Local Policymakers 4. Integrate Malnutrition Care Goals in National, State, and Local Population Health Management Strategies 5. Allocate Education and Financial Resources to HHS- and USDA-Administered Food and Nutrition Programs 	

[†] For additional information or to read more about the *National Blueprint*, visit the *National Blueprint* website at <http://www.defeatmalnutrition.today/blueprint>.

Appendix 3: Examples of Current Initiatives Integrating Nutrition Into Existing System-Level Pathways /

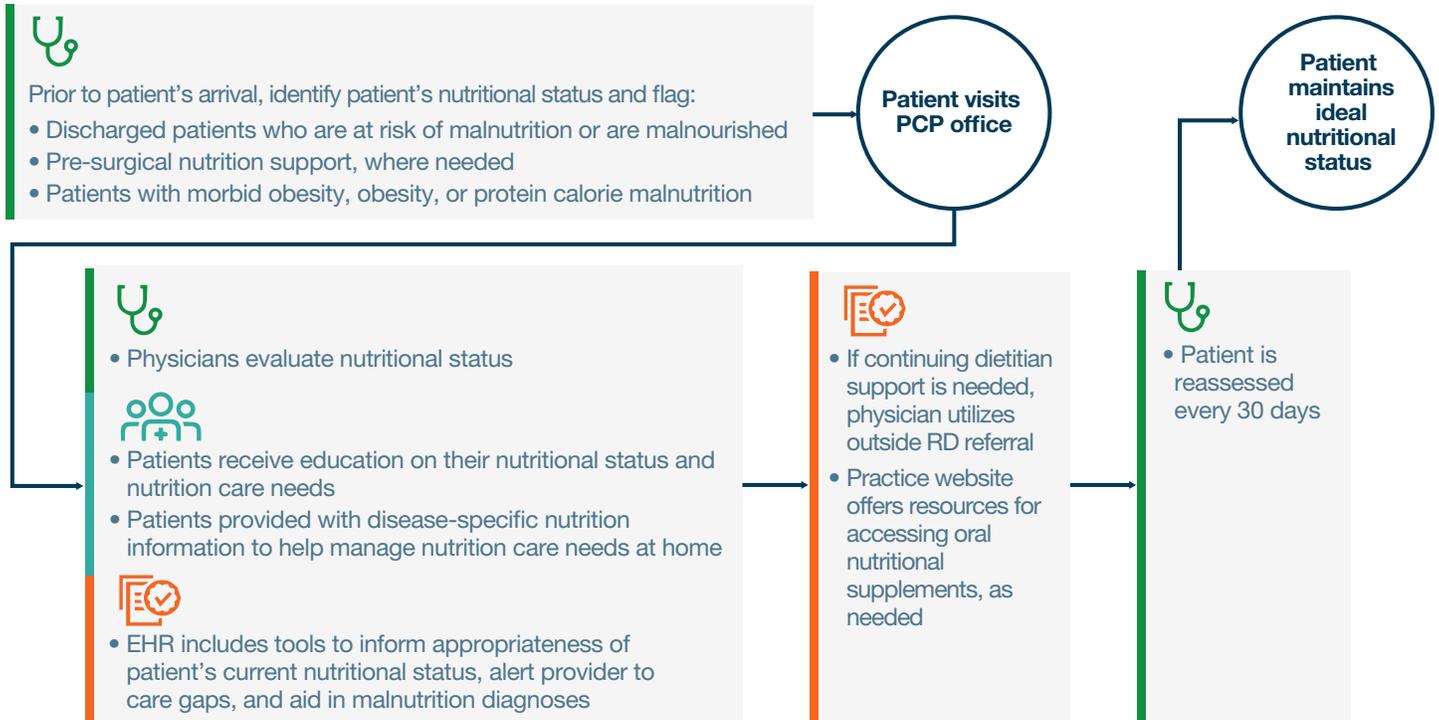


Example 1. Integration of Malnutrition Care into Patient Hospital Discharge Processes



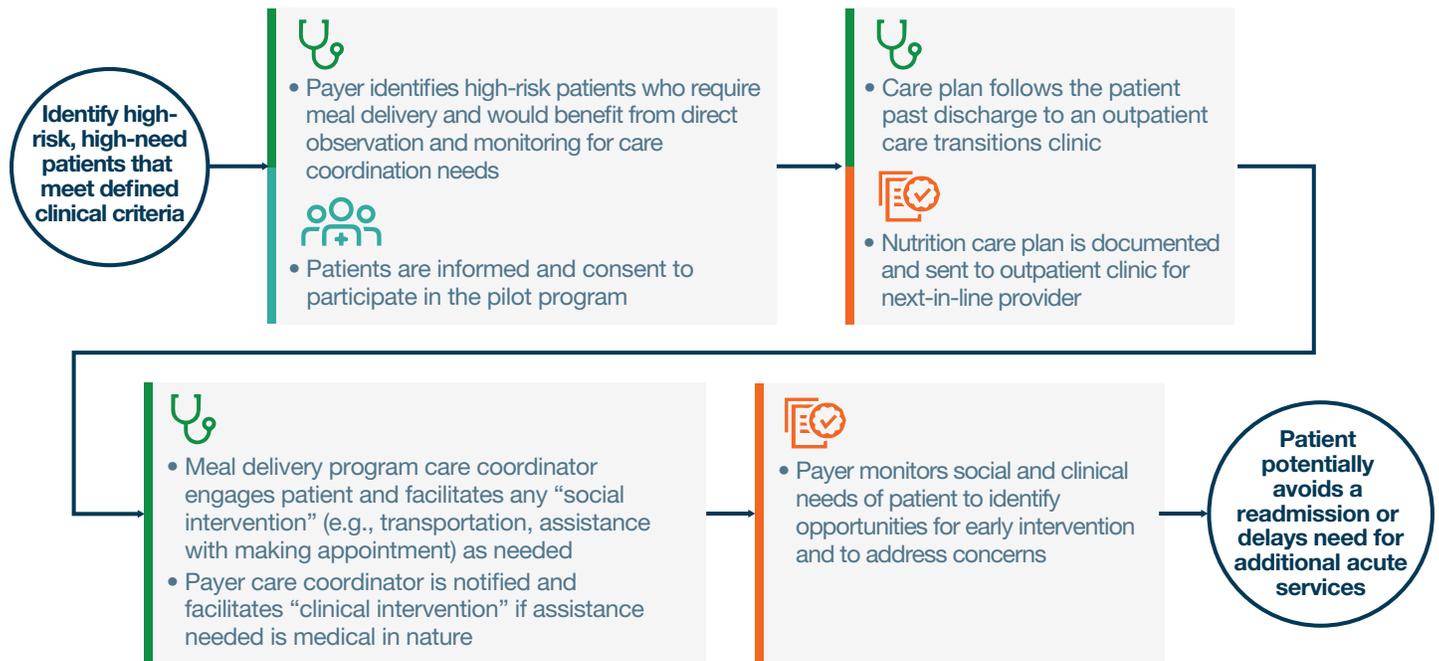
Example 1 reflects how the dietitians at one hospital are working with an interdisciplinary team to better incorporate malnutrition care into patient care transitions through improved patient engagement, data sharing across care delivery settings, and the use of case management.

Example 2. Integration of Malnutrition Care into Primary Care Pathway



Example 2 demonstrates how a primary care physician office is working to better identify and manage patients at risk of malnutrition through improved clinician training, patient education, referral to dietitians as needed, and the use of technology to identify patients prior to arrival and support patients while at the clinician's office and once they leave it.

Example 3. Integration of Nutrition and Social Services into Payer Care Coordination Model Using Community-Based Resources



Example 3 highlights opportunities for engagement by non-clinical entities. It demonstrates how a payer and a community-based service provider have partnered to conduct a pilot among high-risk community-dwelling individuals using volunteers, care coordinators, and technology to rapidly identify and intervene on potential medical or social concerns that could put an individual at risk of malnutrition and other health problems.

Appendix 4: Malnutrition Screening Tools /

There are many tools available (including validated tools) that clinicians and other providers can use across care settings to screen individuals for malnutrition.

Tool Name	Care Setting	Validated
Australian Nutritional Screening Initiative (ANSI)	Community	No
Malnutrition Screening Tool (MST)	Acute adults: inpatients and outpatients including elderly, residential aging care facilities	Yes
Malnutrition Universal Screening Tool (MUST)	Hospital, community, and other care settings	Yes
MEAL Scale	Outpatient	No
Mini-Nutritional Assessment (MNA)	Acute, rehabilitation, community, long-term care	Yes
Mini-Nutritional Assessment (MNA) Short-Form (SF)	Community, sub-acute, or residential aging care	Yes
NUTRISCORE	Outpatient	Yes
Patient Generated Subjective Global Assessment Tool (PG-SGA)	Acute	Yes
Starting the Conversation	Primary care, health promotion	Yes
Sarcopenia Quality of Life (SarQOL)	Community	Yes
Seniors in the Community: Risk Evaluation for Eating and Nutrition (SCREEN) (includes SCREEN I and SCREEN II)	Community, long-term care, skilled nursing facilities, rehabilitation	Yes
Nutrition Screening Initiative (NSI) DETERMINE Checklist	Home-based, community	Yes ^v
Short Nutritional Assessment Questionnaire (SNAQ)	Outpatient, elderly in care homes or residential care, patients in the community aged 65 or older	Yes

The above screening tools are a first-line detection of malnutrition. Only a Registered Dietitian Nutritionist (RDN) is qualified for performing Medical Nutrition Therapy (MNT) inclusive of conducting a Nutrition-Focused Physical Exam (NFPE), determining a nutrition diagnosis, and authorizing appropriate intervention for malnourished individuals.

^vThis tool has been validated as an educational tool rather than a screening tool.

Appendix 5: Policy Opportunities to Better Integrate Malnutrition Care Into Patient Care Transitions /

Issue: As people age, their health needs are likely to become more complex and impacted by chronic disease, social determinants of health, and nutrition status. Good nutrition and a healthy diet are considered critical pathways in influencing chronic conditions such as hypertension, diabetes, cardiovascular disease, kidney disease, gastrointestinal disorders, cancer, and obesity. Yet all too often, as patients transition from one point of care to another, their nutrition status is not evaluated, documented, or even included in patient health conversations. Beyond the hospital setting, it is rare for anyone to recognize or work with patients and their families to help prevent or intervene for poor nutrition or malnutrition that includes under-nutrition and over-nutrition.

Impact: The result is that patients are frequently at risk for or develop negative health outcomes related to malnutrition, including increased falls-risk, chronic disease, frailty, and loss of independence. Malnourished patients have an increase in healthcare service utilization, and hospitalization costs for adult malnourished patients can be up to \$25,200, a 100% increase over the costs faced by non-malnourished patients. The US economic burden of disease-associated malnutrition is estimated at \$157 billion annually.

Recommended Policy Actions: A multi-stakeholder group of health and community leaders and advocates came together in a national Dialogue to identify real-world solutions to integrate nutrition risk identification and care into existing care transition pathways and accountable care models. The results of their discussion are the basis for these policy-related recommendations to better integrate optimal nutrition care into national quality programs.

- Adopt clinically meaningful malnutrition-related quality measures and improvement activities into accountable care models and population health initiatives to improve prevention, identification, and management for patients across care settings
- Incorporate nutrition status into transfer of health information upon admission to and discharge from acute and post-acute care settings (IMPACT Act implementation)
- Include nutrition risk identification and malnutrition care in the Welcome to Medicare Exam and Annual Medicare Wellness Exam
- Include nutrition risk identification and malnutrition care in Centers for Medicare & Medicaid Services (CMS) Quality Programs and Advanced Alternative Payment Models (e.g., Comprehensive Primary Care Plus Program, Bundled Payment for Care Initiative, Oncology Care Model Quality Payment Program, Hospital Inpatient Quality Reporting, Home Health and Skilled Nursing Facility Quality Reporting Programs)
- Adopt standardized malnutrition terminology and clinical standards in EHRs to improve malnutrition risk identification and data transfer across care settings
- Establish state commissions to develop targeted local plans to improve nutrition risk identification and malnutrition care
- Collect data and publish results from CMS national and state care transition pilots that incorporate nutrition-related activities into the care delivery (e.g., meal delivery or community support services post-discharge and associated outcomes)

Appendix 6: Action Steps for Operationalizing Key Recommendations /

Screening and Nutrition Care

Recommendation	Impact/Solution	Tactics
<p>1. Integrate nutrition status considerations into existing protocols, pathways, and models (e.g., disease-specific protocols and pathways, transitional care models)</p>	<ul style="list-style-type: none"> Enhance identification, assessment, and intervention 	<ul style="list-style-type: none"> Build nutrition identification and management into disease-specific protocols (e.g., stroke, diabetes care protocols) Incorporate nutrition care considerations into transitional care models such as the Coleman, Naylor, and Bridge models
<p>2. Adopt and disseminate existing guidelines and protocols that recommend actions for optimal nutrition care</p>	<ul style="list-style-type: none"> Enhance identification, assessment, and intervention 	<ul style="list-style-type: none"> Encourage clinicians/healthcare facilities to adopt existing protocols that recommend nutrition care as part of good care delivery (e.g., the World Health Organization’s Integrated Care for Older People guidelines, which include recommendations for individuals who are affected by undernutrition)
<p>3. Implement systematic screening in post-acute and community settings using existing standardized malnutrition screening tools (Appendix 4)</p>	<ul style="list-style-type: none"> Enhance identification, assessment, and intervention 	<ul style="list-style-type: none"> Include nutrition screening as part of the Welcome to Medicare preventive visit, and include information on malnutrition prevention and warning signs in packets for Medicare patients Include dietitians in hospital pre-visit planning, as well as discharge and care transition planning for patients deemed at high risk of malnutrition based on key indicators (e.g., chronic disease, surgery, Medicaid, food insecurity) Incorporate nutrition status questions as part of pre-appointment surveys or similar patient-reported data collection mechanisms (e.g., how is your appetite, have you lost weight?) Partner with community-based providers (e.g., retail dietitians, retail pharmacists, home health workers, social workers) to perform screenings in less “traditional” care delivery settings, such as retail pharmacies, supermarkets, home health, assisted living, senior centers, etc. Refer and transfer patients to primary care, outpatient, and public health/community nutrition dietitians to perform nutrition care (i.e. assessment and intervention) once screened and identified by community-based providers
<p>4. Align incentives (e.g., policy and financial) with malnutrition care delivery beyond the hospital (i.e., community setting) to improve prevention, identification, and management</p>	<ul style="list-style-type: none"> Address patient access barriers 	<ul style="list-style-type: none"> Adopt and use systematic nutrition screening and intervention in an alternative payment model (e.g., the Bundled Payment for Care Improvement Initiative) and evaluate the impact on patients Establish a “Center of Excellence” recognition program with differential payment for organizations that integrate malnutrition care into their care processes (e.g., effectively screening and supporting the treatment of at-risk and malnourished patients) Provide incentives for routine use of SDM in practice through value-based payment programs or as part of population management initiatives Align incentives for clinicians and providers to identify and prioritize rapid care and intervention for those patients who are more likely to have malnutrition and malnutrition-related comorbidities based on “triggers” in the EHR (e.g., based on information in the Core Clinical Data Elements) Create state and local coalitions to work on developing targeted plans to improve malnutrition care, following models in Ohio, Massachusetts, and other states^{21,22}

Recommendation	Impact/Solution	Tactics
<p>5. Engage and empower community-based providers (e.g., retail dietitians, retail pharmacists, home health workers, social workers, meal delivery organizations, behavioral health counselors) to help patients achieve nutritional goals</p>	<ul style="list-style-type: none"> Enhance identification, assessment, and intervention 	<ul style="list-style-type: none"> Perform screenings in less “traditional” care delivery settings, such as wellness clinics, retail pharmacies, home health, assisted living, senior centers, etc. Incorporate nutrition goals into community programs (e.g., pharmacy and grocery store rewards programs) so that patients receive benefits for nutrition management activities Follow up via phone regarding nutrition concerns and recommended care plans to address breakdowns in the system (e.g., if clinicians consistently fail to review discharge plans, partner with case managers to perform post-discharge follow-up)
<p>6. Educate clinicians and social service providers about the impact of malnutrition/poor nutrition, their role in identifying it (including when and how to screen for malnutrition, as well as available tools), and the importance of nutrition interventions</p>	<ul style="list-style-type: none"> Enhance identification, assessment, and intervention Advance understanding of “nutrition as medicine” and treat it as such in care plans and care delivery activities Identify and address gaps in medical school and clinician and social service training in screening for malnutrition 	<ul style="list-style-type: none"> Provide education and training for non-dietitian clinicians, conducted by dietitians, on core nutrition care (i.e., “Survival Skills for Nutrition”), such as how to: <ul style="list-style-type: none"> Appropriately screen patients for nutrition risk Refer patients to a dietitian, and access and use dietitians in community and post-acute care settings Connect the patient to community-based nutrition resources (e.g., meal delivery programs) Follow up/monitor patients on a regular basis (e.g., 3, 7–10, and 25 days) after discharge to ensure they are complying with clinical nutrition recommendations, and identify and address any social determinants of health that could affect their nutrition intake Actively engage the patient’s caregiver in nutrition-related discussions (e.g., screening, care plan, discharge planning), as the caregiver is the most consistent member of the patient’s care team across settings Create or use existing web-based programs to: <ul style="list-style-type: none"> Provide education and training to clinicians and community-based providers on core nutrition care skills (led by dietitian organizations) Identify how to connect patients to community-based providers and resources to support their nutrition needs (e.g., NowPow) Include nutrition education, when to refer patients to dietitians, and patient engagement/education as part of medical school or continuing education (e.g., minimum of one continuing education unit per year)
<p>7. Educate payers on the impact of malnutrition/poor nutrition on patient outcomes and healthcare costs and the value of nutrition care coverage</p>	<ul style="list-style-type: none"> Enhance identification, assessment, and intervention 	<ul style="list-style-type: none"> Work with payers to establish viable payment models with outpatient and primary care dietitians Share information and resources to educate payers on the impact of malnutrition on patient outcomes and the value of risk identification and early intervention in community settings

Patient Education & Shared Decision Making

Recommendation	Impact/Solution	Tactics
<p>1. Expand the use of shared decision making and education tools and create new tools as needed to engage patients/families/caregivers in discussions about nutrition care and better inform clinicians in clinical and community settings on nutrition information</p>	<ul style="list-style-type: none"> • Enhance understanding of the impact of “good nutrition” and “poor nutrition” on health, functionality/quality of life, and healing across care settings • Enhance engagement of patients/families/caregivers in patients’ nutrition care • Align nutrition care and intervention with individual patient preferences and goals 	<ul style="list-style-type: none"> • Develop SDM tools in partnership with patients and clinicians to advance clinical discussions about nutrition insufficiency or poor nutrition, patient nutrition goals, and ways to improve patients’ nutrition intake, as well as the impact of nutrition on patients’ outcomes • Include nutrition status questions as part of pre-appointment surveys or similar patient-reported data collection mechanisms (e.g., how is your appetite, have you lost weight?) • Provide documents capturing nutrition recommendations for patients to take to their appointment with the next-in-line provider (similar to a list of current medications) • Provide “stoplight” pamphlets outlining green/yellow/red warning signs that suggest potential nutritional decline, including when to contact a clinician • Use pamphlets and posters in clinician offices to encourage patients to “ask about your nutrition”
<p>2. Deliver information to patients/families/caregivers in a way that is sensitive to their understanding of malnutrition, culture, and health literacy</p>	<ul style="list-style-type: none"> • Enhance understanding of the impact of “good nutrition” and “poor nutrition” on health, functionality/quality of life, and healing across care settings • Align nutrition care and intervention with patient/family culture and values • Enhance opportunities for patient/family comprehension and understanding of health and nutrition conditions, recommendations, and interventions 	<ul style="list-style-type: none"> • Reframe discussions about malnutrition with patients/families/caregivers to focus on “poor nutrition” and “nutrition insufficiency” to avoid the perception of blame • Educate clinicians and social service providers to deliver nutrition information in culturally competent ways • Use translation programs such as mobile app-based translators or adopt models used by other clinicians to provide nutrition information in a linguistically and culturally competent way (e.g., implement “dial-a-dietitian” to enable clinicians and their patients to speak to a dietitian in non-English languages)

Recommendation	Impact/Solution	Tactics
<p>3. Educate patients/families/caregivers on how to discuss nutrition goals with patients' doctors and care providers</p>	<ul style="list-style-type: none"> • Align nutrition care and intervention with individual patient preferences and goals • Enhance engagement of patients/families/caregivers in patient nutrition care 	<ul style="list-style-type: none"> • Raise awareness via national campaigns to: <ul style="list-style-type: none"> ◦ Encourage patients to actively raise the topic of nutrition goals as part of discussions with their care providers ◦ Include clinically relevant nutrition data in medical “data backpacks” to allow patients to better access, carry with them, and share their nutrition data with other clinicians and providers ◦ Promote malnutrition identification and management efforts to clinicians, providers, and the general public at national programs and annual meetings (e.g., AARP initiatives, the American Society for Parenteral and Enteral Nutrition’s Malnutrition Awareness Week, the National Council on Aging’s Falls Prevention Awareness Day, the International Council on Active Aging’s Active Aging Week, National Nutrition Month)
<p>4. Educate patients/families/caregivers on how to support nutrition-related needs (e.g., preparing meals, coordinating food with medication management, providing oral nutrition supplements, changing tube feeding)</p>	<ul style="list-style-type: none"> • Advance discussions about poor nutrition and its impact on health and functionality/quality of life, patient goals, and how to improve • Enhance engagement of patients/families/caregivers in patient nutrition care 	<ul style="list-style-type: none"> • Offer classes to help individuals manage their nutrition needs and carry out nutrition recommendations outside of the clinical setting (e.g., meal preparation, food coordination with medication management, oral nutritional supplement consumption, changing feeding tube)
<p>5. Partner with community-based organizations (e.g., Area Agencies on Aging and other providers) to raise broader population understanding of malnutrition and its impacts on patient health</p>	<ul style="list-style-type: none"> • Enhance identification, assessment, and intervention 	<ul style="list-style-type: none"> • Promote malnutrition identification and management efforts at national programs and annual meetings (e.g., AARP initiatives, the American Society for Parenteral and Enteral Nutrition’s Malnutrition Awareness Week, the National Council on Aging’s Falls Prevention Awareness Day, the International Council on Active Aging’s Active Aging Week, National Nutrition Month)

Data Infrastructure

Recommendation	Impact/Solution	Tactics
<p>1. Adopt standardized malnutrition terminology and clinical standards in EHRs to improve malnutrition risk identification and data transfer across care settings</p>	<ul style="list-style-type: none"> • Systematic transfer of nutrition health information • Ability to “follow the patient” and continue to build on nutrition interventions 	<ul style="list-style-type: none"> • Advocate for Office of the National Coordinator to adopt standardized malnutrition terminology and clinical standards • Create value sets to systematically capture standardized data as needed • Partner with EHR vendors to build population-based performance measures that promote nutrition screening and intervention for populations at risk for malnutrition into EHRs • Advance hard-coded “malnutrition marker” in EHRs to better identify patients with malnutrition who may have more difficulty recovering, and to track the impact of malnutrition on patients across care settings (e.g., inform readmissions risk scores)
<p>2. Generate evidence and publish data reflecting the impact of nutrition status on clinically relevant outcomes (e.g., admissions/readmissions, activities of daily living, quality of life)</p>	<ul style="list-style-type: none"> • Increase visibility of impact of nutrition status • Align incentives for identification and treatment 	<ul style="list-style-type: none"> • Collect data and generate evidence on: <ul style="list-style-type: none"> ◦ CMS care transition pilots that incorporated nutrition-related activities into the care delivery (e.g., meal delivery post-discharge) and any associated outcomes ◦ Programs that assist patients in complying with recommended nutrition care with home-delivered meals and/or delivery of recommended oral nutritional supplements to the hospital prior to discharge, where indicated ◦ Clinically meaningful and patient-centered aspects of nutrition-focused SDM and implementation of SDM tools (e.g., patient satisfaction, impact on quality of life) ◦ The impact of integrating malnutrition prevention and risk identification and management into existing coordinated care models, alternative payment models, and CMS Innovation Center initiative (e.g., the Oncology Care Model 2.0) ◦ Use of EHR-enabled alerts and follow-on care to determine whether clinicians are reviewing and responding to the alert, as well as timeliness of care following the alert ◦ Use of standardized tools across care settings (e.g., the Patient- and Nutrition-Derived Outcome Risk Assessment score) to understand patient risk for malnutrition-associated poor outcomes as patients move between settings of care ◦ Incorporation of nutrition status into existing readmission risk tools (e.g., BOOST, LACE index) as a predictor for readmission ◦ Link between the presence of malnutrition and the ability (or inability) to complete activities of daily living
<p>3. Expand the use of tools (e.g., alerts, hard stops) and visibility of nutrition information in EHRs to enhance nutrition-related decisions and communicate nutrition information to relevant clinicians</p>	<ul style="list-style-type: none"> • Provide greater visibility to nutrition care needs and opportunities for action • Advance understanding of “nutrition as medicine” and treat it as such in care plans and care delivery activities 	<ul style="list-style-type: none"> • Establish and implement standardized protocols to: <ul style="list-style-type: none"> ◦ Document malnutrition diagnoses and dietitians’ nutrition care recommendations in the problem list and discharge plan ◦ Capture nutrition interventions on the Medication Administration Record (MAR), as appropriate • Build into EHRs “hard stops” to prevent further action unless appropriate nutrition care has been provided (e.g., inability to discharge patients unless nutrition diagnosis information and follow-on care, where applicable, is populated in the discharge plan)

Recommendation	Impact/Solution	Tactics
<p>3. Expand the use of tools (e.g., alerts, hard stops) and visibility of nutrition information in EHRs to enhance nutrition-related decisions and communicate nutrition information to relevant clinicians <i>(continued)</i></p>		<ul style="list-style-type: none"> • Use alerts (e.g., “Smart Alerts”) to: <ul style="list-style-type: none"> ◦ Flag patients who are more likely to have malnutrition and malnutrition-related comorbidities (e.g., based on information in the Core Clinical Data Elements) to enable clinicians and providers to identify and prioritize rapid care and intervention for them ◦ Notify the clinician when a patient meets malnutrition-associated diagnostic criteria or has malnutrition-associated characteristics, ask whether the clinician has screened the patient, and prompt them to diagnose and treat, if applicable ◦ Notify the physician if a dietitian diagnoses malnutrition, including auto-populating relevant information in the physician’s note • Flag the clinician when a patient is at a “pressure point” and is particularly vulnerable to malnutrition (e.g., entering in NPO status) and remind them of evidence-based protocols for the circumstance
<p>4. Conduct informatics skill training for dietitians and other healthcare professionals supporting patients’ nutrition needs</p>	<ul style="list-style-type: none"> • Facilitate engagement with clinical IT teams to more consistently collect, document, and transmit nutrition care data 	<ul style="list-style-type: none"> • Develop training programs to educate dietitians and other healthcare professionals on informatics and data infrastructure to enhance systematic, standardized collection of nutrition-related data
<p>5. Identify mechanisms to share relevant social determinant-related data with clinicians and providers in a manner that is compliant with regulatory requirements and supports patient/family/caregivers’ ability to maintain/improve patients’ nutritional status</p>	<ul style="list-style-type: none"> • Enable provider exchange of data, including data on social determinants of health • Transfer of relevant nutrition health information and care plans • Ability to connect patient/family/caregivers with community-based services to address needs 	<ul style="list-style-type: none"> • Partner with clinicians (physicians, mental health providers, etc.) and community-based partners (social workers, meal delivery services, etc.) to identify how to share social determinant information that may affect patients’ ability to maintain good nutrition
<p>6. Create and adopt new technologies focused on malnutrition prevention, identification, and intervention (e.g., apps, wearables)</p>	<ul style="list-style-type: none"> • Enhanced monitoring of patients’ nutrition status in order to support their goals 	<ul style="list-style-type: none"> • Support clinical adoption of Fast Healthcare Interoperability Resources and application programming interfaces that translate data from disparate sources into a common format and allow for it to be shared across platforms

About Avalere Health, the Academy of Nutrition and Dietetics, and Defeat Malnutrition Today /

Avalere Health is a healthcare advisory services firm with experience in quality improvement and measurement. The Academy is the world's largest organization of nutrition and dietetics practitioners committed to optimizing health through food and nutrition, and advancing the profession through research, education, and advocacy. Defeat Malnutrition Today is a coalition of over 75 organizations and stakeholders working to defeat older adult malnutrition.

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