Leading Malnutrition Quality Improvement for Better Hospital & Patient Outcomes

Disclosure

Kelsey Jones, MPA

- Avalere Health, an Inovalon Company, is a Washington, DC-based strategic advisory company whose core purpose is to create innovative solutions to complex healthcare problems.
- The Malnutrition Quality Improvement Initiative (MQii) is a project of the Academy of Nutrition and Dietetics, Avalere Health, and other stakeholders who provided guidance and expertise through a collaborative partnership. Support provided by Abbott.

Learning Outcomes

- Discuss how addressing malnutrition impacts older adult patient outcomes and healthcare costs and aligns with Centers for Medicare & Medicaid Services (CMS) and healthcare institution quality priorities
- Describe how to access and use new electronic Clinical Quality Measures (eCQMs) for malnutrition developed by the Academy and a new evidence-based Malnutrition Quality Improvement Initiative (MQii) Toolkit to implement malnutrition care quality improvement in your own hospital
- Identify best practices for leading malnutrition quality improvement and navigating healthcare institutional challenges and barriers

Current Healthcare Landscape

INSTITUTIONS ARE BEING HELD ACCOUNTABLE TO THE QUALITY OF CARE THEY PROVIDE IN ORDER TO ACHIEVE HIGH VALUE

National Quality Strategy Priorities

- Making care safer
- Ensuring person and family engagement
- Promoting communication and coordination of care
- Using best practices for population health
- Making quality care more affordable

National Efforts to Advance Quality of Care

To incentivize improved quality of care, the Centers for Medicare & Medicaid Services (CMS) and others (e.g., private payers) are paying bonuses and/or penalizing hospitals and providers for care and outcomes related to:

- Readmissions
- Hospital-Acquired Conditions
- Inpatient Quality of Care
- Care Coordination and Transitions
- Chronic Disease-Related Care
- Long-Term and Skilled Nursing Facility Care
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Abbott Nutrition Supported Session
FNCE 2016

Hospitals Are a Key CMS Focus to Improve Care and Lower Costs

- 129 Hospitals avoided the 2015 readmissions penalties after being fined in 2014
- Estimates suggest that the 2,610 hospitals penalized under HRRP will face up to $428 million in penalties

Malnutrition Impacts Hospital Outcomes and Costs

- 1 in 3 hospitalized patients is malnourished
- 4-19 million cases are left undiagnosed and untreated each year
- Malnutrition increases hospital costs up to 30%
- Malnutrition increases the incidence of pressure sores, infection rates, falls, risk, and slows wound healing
- Patients with malnutrition have greater mortality rates, clinical complications, and length of stay

What is the MQii?

The Malnutrition Quality Improvement Initiative (MQii) is a project of the Academy of Nutrition and Dietetics, Avalere Health, and other stakeholders who provided expert input through a collaborative partnership.

This initiative aims to advance evidence-based, high-quality and patient-driven care for hospitalized older adults who are malnourished or at-risk for malnutrition.

MQii Objectives

- Improve effectiveness and timeliness of malnutrition care through a toolkit for use by an interdisciplinary team
- Advance adoption of malnutrition electronic clinical quality measures (eCQMs) "that matter" – to help improve outcomes that are important to patients and clinicians
- Expand availability of tools that can be integrated into electronic health record (EHR) systems to improve care quality while minimizing administrative burden

How Does It Support Timely and Coordinated Malnutrition Care?

MQii Toolkit provides practical tools and resources to enable hospitals to achieve optimal malnutrition standards of care in their care delivery

Data reported from MQii electronic clinical quality measures (eCQMs) help hospitals demonstrate if and by how much they are successful in meeting the standards of care
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### MQii Aligns with National Quality Strategy “Levers”

- Measurement and Feedback
- Public Reporting
- Certification, Accreditation, and Regulation
- Payment
- Health Information Technology
- Learning and Technical Assistance
- Consumer Incentives and Benefit Designs
- Innovation and Diffusion
- Workforce Development

### MQii eCQMs

The MQii electronic clinical quality measures (eCQMs) are the first Academy measures and first malnutrition measures to:
- Evaluate whether your hospital is currently providing optimal malnutrition care
- Support more consistent, evidence-based care through data-driven information
- Demonstrate when your hospital has achieved desired improvements in malnutrition care

### MQii eCQMs Examples

- NQF #5087: Completion of a Malnutrition Screening within 24 hours of Admission
- NQF #5088: Completion of a Nutrition Assessment for Patients Identified as At-risk for Malnutrition within 24 hours of a Malnutrition Screening
- NQF #5089: Nutrition Care Plan for Patients identified as Malnourished after a Completed Nutrition Assessment
- NQF #5090: Appropriate Documentation of a Malnutrition Diagnosis

### MQii Toolkit

Interdisciplinary Care Teams can use the MQii Toolkit to identify opportunities for malnutrition quality improvement (QI) and support improved care in their hospital

### Determine If You Are Ready to Undertake Malnutrition QI

**MQii Readiness Questionnaire**

- **Are you ready to end malnutrition in your hospital?**
  - Do you have the needed resources to do this?  
  - Is your culture one of improvement?

<table>
<thead>
<tr>
<th>Ability to Support Quality Improvement Efforts</th>
<th>Strongly Disagree</th>
<th>Disagree</th>
<th>Neutral</th>
<th>Agree</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. This hospital has the resources and training to improve care for patients.</td>
<td>☐ ☐ ☒ ☐ ☐</td>
<td>☐ ☒ ☐ ☒ ☐</td>
<td>☒ ☐ ☒ ☒ ☐</td>
<td>☐ ☐ ☒ ☒ ☒</td>
<td>☐ ☐ ☒ ☒ ☒</td>
</tr>
<tr>
<td>2. Change in the hospital’s transport system is necessary in order to improve quality of care.</td>
<td>☐ ☒ ☐ ☐ ☐</td>
<td>☐ ☒ ☐ ☐ ☐</td>
<td>☒ ☐ ☒ ☐ ☐</td>
<td>☐ ☐ ☒ ☐ ☒</td>
<td>☐ ☐ ☒ ☐ ☒</td>
</tr>
</tbody>
</table>

### Select Your Malnutrition QI Intervention

<table>
<thead>
<tr>
<th>Question</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Does a member of your care team (e.g., pharmacist or dietitian) perform a malnutrition risk screening for all patients ages 65+ admitted to the hospital?</td>
<td>☐ ☐</td>
<td>☐ ☐</td>
</tr>
<tr>
<td>a. Does a member of your care team (e.g., pharmacist or dietitian) perform a validated malnutrition risk screening for all patients ages 65+ within 24 hours of admission?</td>
<td>☐ ☐</td>
<td>☐ ☐</td>
</tr>
<tr>
<td>b. If not, does your current tool provide valid results? (e.g., if administered by different clinicians, does it produce the same results?)</td>
<td>☐ ☐</td>
<td>☐ ☐</td>
</tr>
<tr>
<td>c. If no, does your current tool produce valid results? (e.g., if administered by different clinicians, does it produce the same results?)</td>
<td>☐ ☐</td>
<td>☐ ☐</td>
</tr>
</tbody>
</table>

If you answered “no” to any of the questions above, this may represent an opportunity or area for malnutrition quality improvement in your hospital.
The MQii is rooted in patient-driven nutrition efforts that incorporate patient preferences and risk factors.

Assess Nutrition Risk: Using a validated tool for all patients with a hospital admission.

Assessment

Nutrition screening is standardized tool for all patients identified as at-risk for malnutrition.

Diagnosis

Documentation of diagnosis for all patients identified as malnourished or at-risk for malnutrition.

Care Plan

Development Establishment of a nutrition care plan for all patients identified as malnourished or at-risk for malnutrition.

Monitoring & Evaluation

Implementation & Discharge Planning: Implementation of processes, including workflows to promote ongoing coordination and support the care of patients identified as malnourished or at-risk for malnutrition.

Impact

Establishment of Discharge Monitoring & Evaluation.

Discharge Planning and risk factors at-risk for malnutrition identified as malnourished or at-risk for malnutrition.

Cases

% of Patients At Risk for Malnutrition Who Received A Nutrition Assessment

% of At-Risk Patients Who Received A Nutrition Assessment Within 24 Hrs

Sample Bar Chart to Track Initiative Data

MQii: Today

MQii Collaborative

MQii Toolkit

MQii Learning Collaborative Sites

MQii Learning Collaborative Site

2015

2016

2017

Call to Action: Expand The MQii Learning Collaborative

Opportunities for Engagement in the MQii

Assess your hospital’s readiness to undertake malnutrition quality improvement (QI)

Identify gaps in malnutrition are in your hospital and opportunities to address them through a QI project

Understand key findings and best practices from other hospitals that have used the MQii Toolkit and eCQMs (upcoming speakers)

Access the Toolkit, eCQM specifications, and associated resources at MQiiToday

Join the 2017 MQii expanded Learning Collaborative!

Heidi J. Silver, Ph.D., M.S., R.D.N.
Associate Professor: School of Medicine and School of Nursing
Director: Diet, Body Composition, and Human Metabolism Core
Vanderbilt University Medical Center

Grant #VUMC5733: Avalere Health LLC
Speaker Support: Abbott Nutrition
Leading Malnutrition Quality Improvement for Better Hospital & Patient Outcomes

Critical Gap in Quality of Care

• 33 – 50% of patients enter the hospital with malnutrition or develop malnutrition during their stay
• Only 5% receive medical (provider) diagnosis for malnutrition

MQii Project Short-Term Objectives

1. Timeliness:
   • Reduce time between positive admission screen for malnutrition and malnutrition diet order
   • Reduce time between malnutrition diagnosis and malnutrition care plan
   • Reduce time between malnutrition care plan and malnutrition intervention

2. Consistency
   • Increase % patient with malnutrition screen
   • Reduce the gap between dietitian and provider diagnosis
   • Improve consistency between diet order and nutrition diagnosis

3. Discharge Planning: Improve continuity of malnutrition care

MQii Project Long-Term Outcomes

• Reduce hospital length of stay
• Reduce 30-day readmission rate

Pilot Study Design & Timeline

Targeted Hospital Sample

<table>
<thead>
<tr>
<th>UNIT</th>
<th>SPECIALTY</th>
<th># BEDS</th>
<th># CLINICAL NURSES</th>
<th># CLINICAL DIETITIANS</th>
</tr>
</thead>
<tbody>
<tr>
<td>7 RW</td>
<td>GERIATRIC</td>
<td>22</td>
<td>30</td>
<td>1</td>
</tr>
<tr>
<td>3 RW</td>
<td>GERIATRIC</td>
<td>14</td>
<td>24</td>
<td>1</td>
</tr>
<tr>
<td>8 N/S</td>
<td>GENERAL MEDICINE</td>
<td>54</td>
<td>70</td>
<td>2</td>
</tr>
<tr>
<td>9 N/S</td>
<td>GENERAL SURGERY</td>
<td>49</td>
<td>80</td>
<td>2</td>
</tr>
</tbody>
</table>

Age ≥ 65 years

Team Approach

PRINCIPAL INVESTIGATOR
PHD, RDN

RESEARCH TEAM
4 RD, 2 RA

HEALTH CARE TEAM LEADERS
3 MD, 4 RN, 2 RD

PHYSICIANS
NURSES
DIETITIANS
Pre-Test: Malnutrition Knowledge

30-item multiple choice questionnaire

- 17 MDs
- 18 RNs
- 4 RDNs
- 1 PharmD

39% Pre-Test

Making it Relevant to the Institution’s Environment

Preliminary data shows sarcopenic obesity type malnutrition prevalent in all patient groups & all health care settings

<table>
<thead>
<tr>
<th>Patient Type</th>
<th>Sample Size</th>
<th>Underweight</th>
<th>Sarcopenic Obesity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hepatic Resection</td>
<td>400</td>
<td>3.5%</td>
<td>43.0%</td>
</tr>
<tr>
<td>Colorectal Resection</td>
<td>985</td>
<td>6.0%</td>
<td>49.0%</td>
</tr>
<tr>
<td>Kidney Resection</td>
<td>250</td>
<td>0.0%</td>
<td>50.0%</td>
</tr>
<tr>
<td>Crohn’s / IBD</td>
<td>70</td>
<td>5.0%</td>
<td>27.0%</td>
</tr>
<tr>
<td>LTC Resident</td>
<td>250</td>
<td>7.0%</td>
<td>42.0%</td>
</tr>
</tbody>
</table>

Silver HU et al unpublished data

Tailored Intervention Formats

Physicians

- Attending:
  - Division faculty meetings
  - Walking rounds

- Residents:
  - Lecture hall presentations
  - Written handouts

- Bimonthly email tips: “Malnutrition – What Can You Do”

Presentation & Handout Topics Covered

- How prevalent is it?
- What are the clinical signs and symptoms?
- Diagnosis and missed diagnosis
- It’s not just about body weight - sarcopenic obesity
- Use and abuse of serum markers
- Implementing malnutrition care plan recommendations

Clinical workflow:

- Timeliness of intervention
- Incorporating malnutrition intervention in discharge care plans

Bi-monthly Email Blasts

Subject: malnutrition – what can you do?

Look for the Six Characteristics

- Insufficient food intake
- Weight loss over time
- Loss of muscle mass
- Loss of fat mass
- Fluid accumulation
- Diminished grip strength

Bi-monthly Email Blasts

Subject: malnutrition – what diagnosis and ICD-10 codes?

- R63.4 Abnormal weight loss
- R63.6 Underweight
- E08.1 BMI ≤ 19
- E40 Kwashiorkor
- E41 Nutritional Marasmus
- E42 Marasmic Kwashiorkor
- E43 Unspecified Severe Protein-Calorie Malnutrition
- E44 Moderate Protein-Calorie Malnutrition
- E44.1 Mild Protein-Calorie Malnutrition
- E46 Unspecified Protein-Calorie Malnutrition
- E64 Sequela of Protein-Calorie Malnutrition

New ICD-10 code for Sarcopenia M62.84
**Tailored Intervention Formats**

**Nurses & Care Partners**
- Monthly unit board meetings ppt presentation
- Change of shift huddles
- Posters in breakrooms
- Laminated flip charts at nursing stations
- Video: “Malnutrition and Nursing: Why Wait”

**Example: lean body mass loss**
- Upper Body
  - Temples
  - Deltoids
  - Clavicles
  - Scapula
  - Interosseous

**Lower Body**
- Thigh
- Knee
- Calf

**Laminated Flip Charts**

**Example: Linking malnutrition & dehydration**
- Edema: ankles, sacrum
- Ascites: abdomens
- Dehydration: orbital area, skin

**Posters in Breakrooms**

**Video**

Malnutrition & Nursing: Why Wait?

https://www.youtube.com/watch?v=Ykit5uS6Krs

**Tailored Intervention Formats**

**Dietitians**
- Oral presentation
- Roundtable small group discussion
- Laminated flip charts
- Abbott Nutrition Health Institute
  - Online learning / continuing education
  - 7 hours of malnutrition videos & test
Malnutrition

by

VUMC

Local Vanderbilt

Vanderbilt University Medical Center is the test site for a nationwide initiative to address the longstanding problem of malnutrition in hospital patients...

Rapid Cycle Feedback

<table>
<thead>
<tr>
<th>Intervention Week</th>
<th>Sample</th>
<th>Positive Malnutrition Screen</th>
<th>Malnutrition Diet Order</th>
</tr>
</thead>
<tbody>
<tr>
<td>6</td>
<td>N = 276</td>
<td>107 (38.8%)</td>
<td>67.3%</td>
</tr>
<tr>
<td>12</td>
<td>N = 117</td>
<td>83 (70.9%)</td>
<td>60.2%</td>
</tr>
</tbody>
</table>

Data Collection: MQii Quality Indicators

- **CONSISTENCY**
  - % patients screened for malnutrition with validated tool
  - % at high malnutrition risk and "malnutrition diet order" w/in 24hrs
  - % at high malnutrition risk and have comprehensive assessment with validated tool
  - % with malnutrition and have dietitian-based malnutrition diagnosis documented in EHR
  - % with dietitian-based malnutrition diagnosis and provider-based malnutrition diagnosis documented in EHR
  - % with malnutrition diagnosis and have appropriate malnutrition care plan
  - % with malnutrition diagnosis and have appropriate malnutrition intervention
  - % with malnutrition diagnosis and have appropriate malnutrition care in the discharge plan

- **LENGTH OF TIME**
  - From admission to malnutrition risk screening
  - From identified at risk and implementation of "malnutrition diet order"
  - From screened at risk to comprehensive assessment
  - From screened at risk to appropriate malnutrition intervention
  - From malnutrition diagnosis to appropriate malnutrition intervention

Results: Malnutrition Knowledge

![Graph showing improvement in malnutrition knowledge]

Lessons Learned

- Malnutrition in the form of sarcopenic obesity highly prevalent
- Very high level of interest by all practitioners
- Laminated flip charts directly impacted practitioner behavior by enabling identifying malnutrition
- EHR not structured for research or outcomes analysis purposes: data entry by clinicians are not the same data fields and variables available on the back end by programmers & informatics team
- Uncertainty of importance and usage of the nutrition screen data
- Conflict with time for nutrition screening due to competing tasks / other care priorities
- Lack of training / preparedness:
  - Physical and clinical signs & symptoms of malnutrition
  - Lack of awareness of low dietitian-to-patient staff ratios
  - Lack of awareness of gap between RD and provider diagnosing
  - Lack of awareness of ICD-10 codes to diagnose malnutrition
- Data at back end of EHR not same as front end

Challenges Identified

Disclosures

Ken Nepple MD FACS

- Board Member/Advisory Panel
  - American Urological Association Electronic Health Record Working Group
- Project Support (to University of Iowa Health Care)
  - Avalere Health and Academy of Nutrition and Dietetics
- Speaker Support
  - Abbott Nutrition
- Research Support
  - American Cancer Society
Learning Outcomes

- Describe how to access and use new electronic clinical quality measures (eCQMs)
- Identify best practices for leading malnutrition quality improvement and navigating healthcare institutional challenges and barriers

Game Plan

- Introduce concept of eMeasures
- Focus on eMeasures for:
  - Nursing Nutritional Screening
  - Dietitian Assessment
  - Physician Diagnosis
  - Patient Care Plan
- Emphasis on practical advice on how to move forward malnutrition QI at your institution

What are eCQMs?

- Identify structured data within the electronic health record
- Create electronic clinical quality measures (eCQM)
- CMS defines eCQMs as: tools that help measure and track the quality of health care services

Why eCQMs?

The Health Resources and Services Administration (HRSA) notes that the quality improvement model includes key principles to support successful initiatives:

1. Focus on patients
2. Quality improvement involves every aspect of the patient's clinical care and the way health care is being delivered, including the way the patient is managed and the care planning process.
3. Focus on the use of data:
   - With standardized and validated measures, data can be collected, compared, and used to make informed decisions about care and patient outcomes.
   - The evaluation of quality improvement initiatives should include documentation of results and experience.

The MQii eCQMs Align with the Malnutrition Care Workflow

Malnutrition eCQMs: These four developed quality measures help providers understand how they are performing against quality improvement goals set forth in the MQII Toolkit:

- Screening Measure Description: Nutritional screening using a validated tool for all patients age 18 years and older with a hospital admission
- Assessment Measure Description: Documentation of a validated tool for all patients age 65 years and older identified as at-risk for malnutrition
- Diagnosis Measure Description: Documentation of a nutrition diagnosis for all patients age 65 years and older identified as malnourished
- Care Plan Development Measure Description: Documentation of a nutrition care plan for all patients age 65 years and older identified as malnourished
- Intervention Implementation Measure Description: Documentation of intervention implementation for malnourished patients
- Monitoring/Evaluation & Discharge Planning Measure Description: Documentation of monitoring and evaluation for discharge planning

These four developed quality measures help providers understand how they are performing against quality improvement goals set forth in the MQII Toolkit.

The MQII eCQMs

eCQMs

*Measures for intervention implementation, monitoring/evaluation, and discharge planning were not technically feasible due to limitations in the availability of measure data.*
eMeasures Testing Site

- University of Iowa Health Care as the testing site for the eMeasures
- 705 beds and ~31,000 adult inpatient admissions
- Established focus on malnutrition QI

eCQMs Process at University of Iowa

1. Identify necessary resources and establish return on investment to CMO and CIO
2. Identify necessary workflow to record data
3. Do the eMeasures work (via an iterative process)
4. Report electronic data
5. Verify by manual abstraction

Data set creation

- Write rules to build an adult inpatient cohort from retrospective data
- (can also be done real time)

2,583 adult discharges in a month

87 discharges/day

873 65 and older per 30 days

33.8% 65 and older

Screening (within 24 hours of admit)
Screening (within 24 hours of admit)

Data available:
- Validated questionnaire in EHR
- Entered by nursing as a “hard stop”

Lessons Learned:
- Feasible
- ICU vs. non-ICU workflow

Assessment (within 24 hours of “at risk” screen)

Data available:
- Dietitian data in consult note

Lessons Learned:
- Timing in workflow (24 vs 48 hr)
- Need to improve data granularity

Diagnosis Documentation

Data available:
- Discrete problem/diagnosis list in EHR
- Text not available

Lessons Learned:
- Challenge
- Variability in documentation
- Education on CDI
**Care Plan**

<table>
<thead>
<tr>
<th>Measure Component and Performance</th>
<th>Site 1 Measure Performance Score</th>
<th>Site 2 Measure Performance Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Denominator [n]</td>
<td>Performance Rate</td>
<td>Denominator [n]</td>
</tr>
<tr>
<td>30</td>
<td>60%</td>
<td>10</td>
</tr>
</tbody>
</table>

Data available: - In the EHR but not readily abstracted

Lesson Learned: - Opportunity for improved workflow

**Advice**

- Emphasis on practical advice on how to move forward malnutrition QI at your institution
- Automate some of the process
- Make some improvement in some thing
- Small things, done consistently, make major impact
  - David Allen

**Adopt Best Practices Across the Malnutrition Care Continuum**

Both the Toolkit and the measures span the malnutrition clinical workflow:

- Screening: Nutrition screening using a validated tool for all patients with a hospital admission
- Assessment: Nutrition assessment using a standardized tool for all patients identified as at risk for malnutrition
- Diagnosis: Documentation of nutrition diagnosis for all patients identified as malnourished or at risk for malnutrition
- Care Plan Development: Establishment of a nutrition care plan for all patients identified or at risk for malnutrition
- Intervention: Implementation of nutrition care plan including treatment for all patients identified or at risk for malnutrition
- Monitoring/Evaluation & Discharge Planning: Implementation of processes, including discharge planning, that provide ongoing monitoring and support the care of patients identified as malnourished or at risk for malnutrition