Disclosure

I do not have any affiliation and have not received any financial support from any organization that could potentially bias this presentation.
Objectives

This presentation will:

1. Define and discuss malnutrition as it relates to hospitalized patients.
2. Review the impact of malnutrition on quality outcomes.
3. Identify steps to implement a malnutrition documentation program.
4. Discuss the newest changes to malnutrition criteria and what these changes may mean for clinical nutrition practice.
5. Provide tools for audit readiness and review a potential audit process for malnutrition documentation.
“The recognition and the understanding of how to diagnose and treat malnutrition could likely change the future of health care not just in this country but around the world.”

Dr. Paul Wischmeyer
Definition

*Malnutrition is inadequate intake of energy and/or protein over a period of time resulting in weight loss, lean body mass loss, loss of fat stores and diminished functionality.*
Prevalence of Malnutrition

- Older adults 65+: as much as 65% can be malnourished in the hospital setting.
- 31% of malnourished patients and 38% well nourished patients experience nutritional decline during their hospital stay.

<table>
<thead>
<tr>
<th>Healthcare Setting</th>
<th>Prevalence</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hospital (1 in 3 patients)</td>
<td>20-50%</td>
</tr>
<tr>
<td>Long-term care</td>
<td>21-51%</td>
</tr>
<tr>
<td>Outpatient/Homecare</td>
<td>13-30%</td>
</tr>
</tbody>
</table>

References 2,5,6
Implications of Malnutrition

- Delayed wound healing
- Pressure ulcers
- Functional decline
- Cognitive decline
- Susceptibility to infections
- Depression
- Delayed recovery from illness
- Difficulty in swallowing

- Dehydration
- Alteration in gait/balance, increased risk of falls and fractures
- Decreased muscular strength and aerobic capacity leading to chronic fatigue
- Decreased lean body mass
- Deterioration in overall quality of life
- Dependence on others

Quality Metrics
Malnutrition and Patient Outcomes

**Pressure Ulcers**
- Malnourished patients are 2 times more likely to develop pressure ulcers in the hospital.

**Infection**
- Malnourished patients have 3 times the risk of surgical site infections.

**Falls**
- 45% of patients who fall in the hospital are malnourished.

**Readmissions**
- Patients with malnutrition are at increased risk of readmissions. (26-34% higher cost)

**Length of Stay**
- Malnutrition increases hospital length of stay by 4-6 days and hospital costs up to 300%.

**Malnutrition** is the leading cause of morbidity and mortality.
- Malnourished older adults risk of mortality is 5x higher than a non-malnourished patient’s.

References 2, 5, 6, 9
Healthcare Transformation

From FEE FOR SERVICE payment model = Provider is paid based on volume of service

↓ ↓ ↓ ↓ ↓ ↓

QUALITY BASED payment methodologies = Promotes quality of care and better outcomes.

Example: Risk Adjustment Factor – methodology predict healthcare cost

- Takes into account chronic conditions
- Insurance company receives compensation if enrolling greater than average number of individuals w/ high risk.
# ICD – 10 Coding Structure

<table>
<thead>
<tr>
<th>Diagnosis</th>
<th>ICD-10 Code</th>
<th>CC/MCC</th>
<th>SOI/ROM Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Malnutrition - Unspecified</td>
<td>E46</td>
<td>CC</td>
<td>3/2</td>
</tr>
<tr>
<td>Malnutrition – Protein - calorie, unspecified</td>
<td>E46</td>
<td>CC</td>
<td>3/2</td>
</tr>
<tr>
<td>Malnutrition – Protein - energy, unspecified</td>
<td>E46</td>
<td>CC</td>
<td>3/2</td>
</tr>
<tr>
<td>Protein-calorie or Protein - energy Imbalance</td>
<td>E46</td>
<td>CC</td>
<td>3/2</td>
</tr>
<tr>
<td>Malnutrition, Protein - calorie</td>
<td>E441</td>
<td>CC</td>
<td>2/1</td>
</tr>
<tr>
<td>Malnutrition, Protein - energy</td>
<td>E441</td>
<td>CC</td>
<td>2/1</td>
</tr>
<tr>
<td>Malnutrition, Moderate protein - calorie</td>
<td>E440</td>
<td>CC</td>
<td>3/2</td>
</tr>
<tr>
<td>Malnutrition, Moderate protein - energy</td>
<td>E440</td>
<td>CC</td>
<td>3/2</td>
</tr>
<tr>
<td>Malnutrition, Severe protein - calorie</td>
<td>E43</td>
<td>MCC</td>
<td>4/3</td>
</tr>
<tr>
<td>Malnutrition, Severe protein - energy</td>
<td>E43</td>
<td>MCC</td>
<td>4/3</td>
</tr>
<tr>
<td>Source</td>
<td>Description</td>
<td>RAF</td>
<td></td>
</tr>
<tr>
<td>--------</td>
<td>-----------------------------------------------------</td>
<td>------</td>
<td></td>
</tr>
<tr>
<td>HCC 1</td>
<td>HIV/AIDS</td>
<td>0.470</td>
<td></td>
</tr>
<tr>
<td>HCC 2</td>
<td>Septicemia, Sepsis, Systemic Inflammatory Response Syndrome/Shock</td>
<td>0.535</td>
<td></td>
</tr>
<tr>
<td>HCC 6</td>
<td>Opportunistic Infections</td>
<td>0.440</td>
<td></td>
</tr>
<tr>
<td>HCC 8</td>
<td>Metastatic Cancer and Acute Leukemia</td>
<td>2.484</td>
<td></td>
</tr>
<tr>
<td>HCC 9</td>
<td>Lung and Other Severe Cancers</td>
<td>0.973</td>
<td></td>
</tr>
<tr>
<td>HCC 10</td>
<td>Lymphoma and Other Cancers</td>
<td>0.672</td>
<td></td>
</tr>
<tr>
<td>HCC 11</td>
<td>Colorectal, Bladder, and Other Cancers</td>
<td>0.317</td>
<td></td>
</tr>
<tr>
<td>HCC 12</td>
<td>Breast, Prostate, and Other Cancers and Tumors</td>
<td>0.154</td>
<td></td>
</tr>
<tr>
<td>HCC 17</td>
<td>Diabetes with Acute Complications</td>
<td>0.368</td>
<td></td>
</tr>
<tr>
<td>HCC 18</td>
<td>Diabetes with Chronic Complications</td>
<td>0.368</td>
<td></td>
</tr>
<tr>
<td>HCC 19</td>
<td>Diabetes without Complication</td>
<td>0.118</td>
<td></td>
</tr>
<tr>
<td>HCC 21</td>
<td>Protein-Calorie Malnutrition</td>
<td>0.713</td>
<td></td>
</tr>
<tr>
<td>HCC 22</td>
<td>Morbid Obesity</td>
<td>0.365</td>
<td></td>
</tr>
<tr>
<td>HCC 23</td>
<td>Other Significant Endocrine and Metabolic Disorders</td>
<td>0.245</td>
<td></td>
</tr>
<tr>
<td>HCC 27</td>
<td>End-Stage Liver Disease</td>
<td>0.923</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Source</th>
<th>Description</th>
<th>RAF</th>
</tr>
</thead>
<tbody>
<tr>
<td>HCC 55</td>
<td>Drug/Alcohol Dependence</td>
<td>0.420</td>
</tr>
<tr>
<td>HCC 57</td>
<td>Schizophrenia</td>
<td>0.490</td>
</tr>
<tr>
<td>HCC 58</td>
<td>Major Depressive, Bipolar, and Paranoid Disorders</td>
<td>0.330</td>
</tr>
<tr>
<td>HCC 70</td>
<td>Quadriplegia</td>
<td>1.234</td>
</tr>
<tr>
<td>HCC 71</td>
<td>Paraplegia</td>
<td>1.052</td>
</tr>
<tr>
<td>HCC 72</td>
<td>Spinal Cord Disorders/Injuries</td>
<td>0.509</td>
</tr>
<tr>
<td>HCC 73</td>
<td>Amyotrophic Lateral Sclerosis and Other Motor Neuron Disease</td>
<td>0.958</td>
</tr>
<tr>
<td>HCC 74</td>
<td>Cerebral Palsy</td>
<td>0.045</td>
</tr>
<tr>
<td>HCC 75</td>
<td>Myasthenia Gravis/Myoneural Disorders and Guillain-Barr Syndrome/Inflammatory and Toxic Neuropathy</td>
<td>0.408</td>
</tr>
<tr>
<td>HCC 76</td>
<td>Muscular Dystrophy</td>
<td>0.565</td>
</tr>
<tr>
<td>HCC 77</td>
<td>Multiple Sclerosis</td>
<td>0.556</td>
</tr>
<tr>
<td>HCC 78</td>
<td>Parkinson's and Huntington's Diseases</td>
<td>0.691</td>
</tr>
<tr>
<td>HCC 79</td>
<td>Seizure Disorders and Convulsions</td>
<td>0.284</td>
</tr>
<tr>
<td>HCC 80</td>
<td>Coma, Brain Compression/Anoxic Damage</td>
<td>0.570</td>
</tr>
<tr>
<td>HCC 82</td>
<td>Respirator Dependence/Tracheostomy Status</td>
<td>1.520</td>
</tr>
</tbody>
</table>
Historical Dilemma

- Providers not identifying and capturing the diagnosis of malnutrition.
- Variation in clinical criteria used by providers to diagnose malnutrition.
- No standardization of criteria for malnutrition among providers and interdisciplinary team.
- Lack of criteria to determine severity of malnutrition - mild, moderate or severe protein calorie malnutrition.
- Providers not aware of National Best Practice Guidelines to diagnose moderate and severe protein–calorie malnutrition and uncertain of how and when to use diagnosis.
**Malnutrition Initiative**

**GOAL: Collaboration and consistency in documentation**

**To apply best practice guidelines via multidisciplinary route when identifying, diagnosing & treating malnutrition to promote positive patient outcomes.**

1. Early identification & intervention for patients identified with malnutrition and post-discharge care planning

2. Accurate patient profiling/clinical documentation → Better patient care and outcomes → Quality Reporting (*establish baseline prevalence*)

3. Reduce risk of error, potential audit issues, red flags etc.

- **1.** Recognize and diagnose all patients at risk for malnutrition
- **2.** Early nutrition intervention and continuous monitoring
- **3.** Develop a discharge plan with resources and education.
Implementation Process

1. Enlist administrative support
   - Best practice, evidence-based
   - Improvement in quality reporting
   - Reimbursement impact

2. Build multidisciplinary team – Educate, Educate, Educate!
   - RD
   - HIM – CDI and Coding
   - Information Systems
   - Ancillary departments – Nursing and Integrated Case Management
   - Physician Champions

3. Electronic communication tool between RD and Provider – best practice!

4. Medical Executive Committee approval of hospital-wide criteria and electronic communication tool.
SELECTING A SCREENING TOOL
Malnutrition Screening Tool

**STEP 1: Screen with the MST**

1. Have you recently lost weight without trying?
   - No: 0
   - Unsure: 2

2. If yes, how much weight have you lost?
   - 2-13 lb: 1
   - 14-23 lb: 2
   - 24-33 lb: 3
   - 34 lb or more: 4
   - Unsure: 2

   Weight loss score: [ ]

3. Have you been eating poorly because of a decreased appetite?
   - No: 0
   - Yes: 1

   Appetite score: [ ]

Add weight loss and appetite scores

**MST SCORE:** [ ]

**STEP 2: Score to determine risk**

**MST = 0 OR 1 NOT AT RISK**
- Eating well with little or no weight loss

If length of stay exceeds 7 days, then rescreen, repeating weekly as needed.

**MST = 2 OR MORE AT RISK**
- Eating poorly and/or recent weight loss

Rapidly implement nutrition interventions. Perform nutrition consult within 24-72 hrs, depending on risk.

**STEP 3: Intervene with nutritional support for your patients at risk of malnutrition.**

Notes: 
________________________________________
________________________________________
________________________________________
________________________________________
SELECTING A CRITERIA
Published National Guidelines (2011) - the evidenced based criteria developed by the Academy and ASPEN, to identify and diagnose malnutrition:

6 Clinical Characteristics

- Insufficient food intake compared with nutrition requirements
- Weight loss over time
- Loss of muscle mass
- Loss of subcutaneous fat mass
- Localized or generalized fluid accumulation (may mask weight loss)
- Measurably diminished grip strength (result of loss in functional status)

**Patient must have two or more of the 6 characteristics**
## ASPEN Criteria – widely used

<table>
<thead>
<tr>
<th></th>
<th>Acute Illness or Injury</th>
<th>Chronic Illness</th>
<th>Social or Environmental</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Moderate (Non-Severe)</strong></td>
<td>Protein-Calorie Malnutrition</td>
<td>Moderate (Non-Severe) Protein-Calorie Malnutrition</td>
<td>Moderate (Non-Severe) Protein-Calorie Malnutrition</td>
</tr>
<tr>
<td>Energy Intake</td>
<td>&lt;75% of EEE, &gt;7 days</td>
<td>&lt;75% of EEE, &gt;5 days</td>
<td>&lt;75% of EEE, &gt;1 month</td>
</tr>
<tr>
<td>Weight Loss</td>
<td>1-2% 1 week, 5% 1 month, 7.5% 3 months</td>
<td>&gt;2% 1 week, &gt;5% 1 month, &gt;7.5% 3 months</td>
<td>&gt;5% 1 month, &gt;7.5% 3 months, &gt;10% 6 months, &gt;20% 1 year</td>
</tr>
<tr>
<td>Loss of Body Fat</td>
<td>Mild</td>
<td>Moderate</td>
<td>Mild</td>
</tr>
<tr>
<td>Loss of Muscle Mass</td>
<td>Mild</td>
<td>Moderate</td>
<td>Mild</td>
</tr>
<tr>
<td>Fluid (Edema)</td>
<td>Mild (+1)</td>
<td>Moderate (+2) to Severe (+3)</td>
<td>Mild (+1) Moderate (+2) to Severe (+3)</td>
</tr>
<tr>
<td>Hand Grip Strength</td>
<td>N/A</td>
<td>Measurably Reduced</td>
<td>N/A</td>
</tr>
</tbody>
</table>
GLIM: The Global Leadership Initiative on Malnutrition

- Founded in January of 2016
- Consists of: leadership from ASPEN, ESPEN and a variety of nutrition societies from Asia, Latin America and Australia
- GOAL/Intent: create a minimum set of malnutrition diagnostic criteria that is endorsed and used globally.

Two-Step Model:
- Risk Screening (Example - MST)
- Diagnosis Assessment (Diagnosis and Severity)
Diagnosis Classification Based On Etiology

Table 5. Diagnosis Category According to Underlying Etiology.

<table>
<thead>
<tr>
<th>Malnutrition related to:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chronic disease with inflammation</td>
</tr>
<tr>
<td>Chronic disease with minimal or no perceived inflammation</td>
</tr>
<tr>
<td>Acute disease or injury with severe inflammation</td>
</tr>
<tr>
<td>Starvation including hunger/food shortage associated with socioeconomic or environmental factors</td>
</tr>
</tbody>
</table>
Diagnostic Scheme by GLIM

Risk screening
- At risk for malnutrition
  - Use validated screening tools

Diagnostic Assessment
- Assessment criteria
  - Phenotypic
    - Non-volitional weight loss
    - Low body mass index
    - Reduced muscle mass
  - Etiologic
    - Reduced food intake or assimilation
    - Disease burden/inflammatory condition

Diagnosis
- Meets criteria for malnutrition diagnosis
  - Requires at least 1 Phenotypic criterion and 1 Etiologic criterion

Severity Grading
- Determine severity of malnutrition
  - Severity determined based on Phenotypic criterion
Criteria to Use

Phenotypic (Effects and Degree)

■ Nonvolitional weight loss:
  - >5% within past 6 months
  - >10% beyond 6 months

■ Low BMI: is different from CDC, US Department of Health & Human Services: NIH definition of underweight = <18.5; ICD-10-CM Z68.1 BMI of 19.9 or less
  - <20 if <70 y/o
  - <22 if >70 y/o

■ Reduced Muscle Mass: GLIM: recommends measure by Dual-energy absorptiometry, bioelectrical impedance, ultrasound, computed tomography, MRI, mid-arm muscle or calf muscle circumference, hand-grip strength

Etiologic (Drives Interventions)

■ Reduced food intake or assimilation: <50% of ER(energy requirements) for > 1 week, or any reduction for > 2 weeks, or any chronic GI condition that adversely impacts food assimilation or absorption. Further defines to consider GI symptoms and malabsorptive disorders.

■ Disease burden/inflammation:
  - Acute disease/injury: severe inflammation: major infections, burns, trauma, CHI. CRP may be used
  - Chronic disease-related: mild to mod inflammation: malignant dz, COPD, CHF, CRF, or any dz with chronic or recurrent inflammation. CRP may be used
GLIM Criteria for the Diagnosis of Malnutrition

MUST have 1 phenotypic and 1 etiologic criteria to diagnose the PRESENCE of malnutrition.

<table>
<thead>
<tr>
<th>Phenotypic Criteria</th>
<th>Etiologic Criteria</th>
</tr>
</thead>
<tbody>
<tr>
<td>Weight Loss (%)</td>
<td>Reduced Food Intake or Assimilation</td>
</tr>
<tr>
<td>&gt;5% w/in past 6 mo</td>
<td>Reduced by validated body composition measuring techniques</td>
</tr>
<tr>
<td>or</td>
<td></td>
</tr>
<tr>
<td>&gt;10% beyond 6 mo</td>
<td>&lt;20 if &lt;70 years or &lt;22 if &gt;70 years</td>
</tr>
<tr>
<td>&lt;20 if &gt;70 years</td>
<td></td>
</tr>
</tbody>
</table>

Asia:

<18.5 if <70 yrs or <20 if >70 yrs
## Thresholds for Severity Grading of Malnutrition

<table>
<thead>
<tr>
<th>Phenotypic Criteria</th>
<th>Weight Loss (%)</th>
<th>Low BMI (kg/m²)</th>
<th>Reduced Muscle Mass</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Stage 1/moderate malnutrition</strong></td>
<td>5%−10% w/in the past 6 mo or 10%−20% beyond 6 mo</td>
<td>&lt;20 if &lt;70 yrs</td>
<td>Mild-to-moderate deficit (per validated assessment methods)</td>
</tr>
<tr>
<td>(requires 1 phenotypic criterion that meets this grade)</td>
<td></td>
<td>&lt;22 if ≥70 yrs</td>
<td></td>
</tr>
<tr>
<td><strong>Stage 2/severe malnutrition</strong></td>
<td>&gt;10% within the past 6 mo or &gt;20% beyond 6 mo</td>
<td>&lt;18.5 if &lt;70 yrs</td>
<td>Severe deficit (per validated assessment methods)</td>
</tr>
<tr>
<td>(requires 1 phenotypic criterion that meets this grade)</td>
<td></td>
<td>&lt;20 if ≥70 yrs</td>
<td></td>
</tr>
</tbody>
</table>

**For Reduced muscle mass:**

Dual-energy absorptiometry or corresponding standards using other body composition methods such as bioelectrical impedance analysis, computed tomography, or magnetic resonance imaging. When not available or by regional preference, physical examination or standard anthropometric measures such as mid-arm muscle or calf circumferences may be used. Functional assessments such as hand-grip strength may be used as a supportive measure.
<table>
<thead>
<tr>
<th>Phenotypic Criteria</th>
<th>Etiologic Criteria</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Weight Loss (%)</strong></td>
<td><strong>BMI (kg/m²)</strong></td>
</tr>
</tbody>
</table>
| 5%–10% w/in past 6mo or 10%–20% 6mo < | <20 if <70 yrs  
<22 if ≥70 yrs |
| **Reduced Muscle Mass** | **PO intake** |
| Mild-to-moderate deficit | 50% of ER > 1 week or  
Any reduction for >2 wks or  
Any chronic GI condition that adversely impacts  
food assimilation or absorption |
| **Inflammation** | |
| Moderate Malnutr. | Acute disease/injury or chronic disease-related |

<table>
<thead>
<tr>
<th>Phenotypic Criteria</th>
<th>Etiologic Criteria</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Severe Malnutr.</strong></td>
<td><strong>BMI (kg/m²)</strong></td>
</tr>
</tbody>
</table>
| >10% w/in past 6mo or >20% beyond 6mo | <18.5 if <70 yrs  
<20 if ≥70 yrs |
| **Reduced Muscle Mass** | **PO intake** |
| Severe deficit | 50% of ER > 1 week or  
Any reduction for >2 wks or  
Any chronic GI condition that adversely impacts  
food assimilation or absorption |
| **Inflammation** | |
| Severe Malnutr. | Acute disease/injury or chronic disease-related |
Next Steps

For GLIM:
- Must be properly vetted on a global scale based on collective feedback.
- Validation studies to be performed

For Practitioners:

Educate ~ Collaborate ~ Document
Key Elements in Documentation

E43 = Severe - Protein Calorie Malnutrition

- Hardly ever a Primary Diagnosis

Most common cause for denial: Insufficient and/or ONE time documentation to support the billing of diagnosis code 43 - Severe protein calorie malnutrition.

Documentation must haves are:

- Appropriate screening (Validated Screening Tool such as MST?)
- Clinical evaluation & Therapeutic treatment
- Diagnostic procedure (consider utilization of objective muscle measurements)
- Discharge plan for nutritional needs
Key Elements in Documentation con’t

1. *Should NOT be a one-time diagnosis!*


3. Include ALL body areas examined or observed in your diagnosis!
   
   -- “*Patient refused nutrition focused physical assessment at this time.*”

4. History of nutritional intake – (degree and timeframe)

5. Reduced functional capacity (“Weakness” is not objective enough)

6. Unintended weight loss (Degree and time frame)
   
   a. Insure reference weight is documented (Usual Body Weight)

7. Supportive items: Non-healing wound, micronutrient deficiencies, BMI should all be included in documentation.

8. Documentation among healthcare professionals should be **CONSISTENT throughout the medical record.**
Golden Rule

“If it’s not documented by the physician/provider, it didn’t happen.”
Questions?
References


References con’t


9. 2014 Alliance to Advance Patient Nutrition; www.malnutrition.com


12. Novitas Solutions Medicare Part A Presents: Targeted Probe and Educate: E43 – Severe – Protein Calorie Malnutrition; June 27, 2018
