



Increasing Malnutrition Awareness in Hospitalized Patients

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10/06/2017

Outline

- Malnutrition Overview
- ASPEN/Academy Guidelines for Diagnosing Malnutrition
- Malnutrition Project at Mercy
- Interdisciplinary Team Involvement

What is Malnutrition?

- Malnutrition is most simply defined as any nutritional imbalance.
- Inadequate intake of protein and/or energy over prolonged periods of time resulting in loss of fat stores and/or muscle wasting.
- Includes:
 - Starvation related malnutrition
 - Chronic disease related malnutrition
 - Acute disease or injury related malnutrition

Malnutrition Characteristics

- Characteristics for the diagnosis of adult malnutrition:
 - Insufficient energy intakes
 - Unplanned Weight loss
 - Loss of muscle mass
 - Loss of subcutaneous fat
 - Localized or generalized fluid accumulation
 - Diminished hand grip strength
- Level of severity:
 - Non-severe (moderate)
 - Severe

Malnutrition Signs and Symptoms

- Malnutrition can occur at any weight/BMI.
- Delayed wound healing.
- Excessive consumption of alcohol or other drugs that reduce appetite.
- Chronic acute disease or trauma.
- Severe protein and/or nutrient malabsorption.
- Presence of inflammation.

No single clinical lab parameter can be recommended as an indicator of comprehensive nutritional status.

- Albumin and Prealbumin are very poor indicators of nutritional status.
- They lack sensitivity, specificity, and reliability.
- At this time, no serum protein levels are specifically recommended for inflammatory markers because they are non-specific.

Prevalence of Malnutrition

- Many studies validate the prevalence of malnutrition in 20-50% of hospitalized patients.¹
 - Increased risk of nosocomial infections
 - Worsened functional status at discharge
 - Higher mortality rates
 - Extended length of stay
 - Higher hospital costs
 - Increased rate of readmission

¹ Kirkland, L, Kashiwagi, D, Brantley, S, Scheurer, D, Varkey, P. Nutrition in the hospitalized patient. *J Hosp Med.* 2013;8(1):52-58.

Research

- Malnutrition adversely affects response to therapy and can decrease survival:
 - 3 x the risk for surgical site infection¹
 - 2 x more likely to develop pressure ulcers²
 - 45% of patients who fall in the hospital are malnourished³

¹Fry DE, et al *Arch Surg* 2010. 145, 148-151

²Banks M, et al *Nutrition* 2010. 26:896-901

³Bauer, JD et al *J Hum Nutr Diet* 2007. 20:558-564

Documentation

- Proper Identification
- Diagnosis of malnutrition
- Enhances the ability of the Interdisciplinary team to communicate, improve outcomes, and provide clearer documentation of the problem.

Increase Reimbursement

- Clinical Documentation Improvement Teams
- Obtain appropriate reimbursement for more specific diagnosis-related groups (DRGs) that reflect the severity of the illness.
- Malnutrition diagnosis may move DRG into different category, therefore increasing reimbursement.

Reimbursement continued...

- Documented malnutrition can contribute significantly to the inpatient MS-DRG
- It can also increase the LOS allotment for the inpatient
- After a 4 month pilot, University of Iowa had increased re-imbbursement of \$660,709 and 172 days worth of LOS¹

ICD-10 Codes for Malnutrition

The ICD-10 Code must be present to qualify for reimbursement.

| CODE | ICD-10 LANGUAGE | COMORBIDITY | ICD-9 |
|-------|---|-------------|-------|
| E40 | Kwashiorkor | MCC | 2260 |
| E41 | Nutritional Marasmus | MCC | 261 |
| E43 | Unspecified severe protein calorie malnutrition | MCC | 262 |
| E44.0 | Moderate protein-calorie malnutrition | CC | 263.0 |
| E44.1 | Mild protein-calorie malnutrition | CC | 263.1 |
| E46 | Unspecified protein calorie malnutrition | CC | 263.9 |

Example of Reimbursement

| | | | |
|--|--|---|---|
| Principal Diagnosis Idiopathic Spinal Stenosis 2nd Diagnosis: None | Principal Diagnosis Idiopathic Spinal Stenosis w/ fusion 2nd Diagnosis: None | Principal Diagnosis Idiopathic Spinal Stenosis w/ fusion 2nd Diagnosis: Mild Protein-Calorie Malnutrition (E44.1) | Principal Diagnosis Idiopathic Spinal Stenosis w/ fusion 2nd Diagnosis: Severe Protein-Calorie Malnutrition (E43) |
| DRG 347 Back & Neck Dis, Fx & Unj GLOS 2.28 | DRG 303 Dors/Lumb Fusion for Curved Back GLOS 4.08 | DRG 303 Dors/Lumb Fusion for Curved Back GLOS 5.02 | DRG 303 Dors/Lumb Fusion for Curved Back GLOS 7.25 |
| Relative Weight 0.5427 Reimbursement \$5,427 | Relative Weight 0.5427 Reimbursement \$44,766 | Relative Weight 0.5427 Reimbursement \$53,576 | Relative Weight 0.5427 Reimbursement \$76,399 |
| SOI 1 ROM 1 | SOI 1 ROM 1 | SOI 2 ROM 1 | SOI 3 ROM 2 |

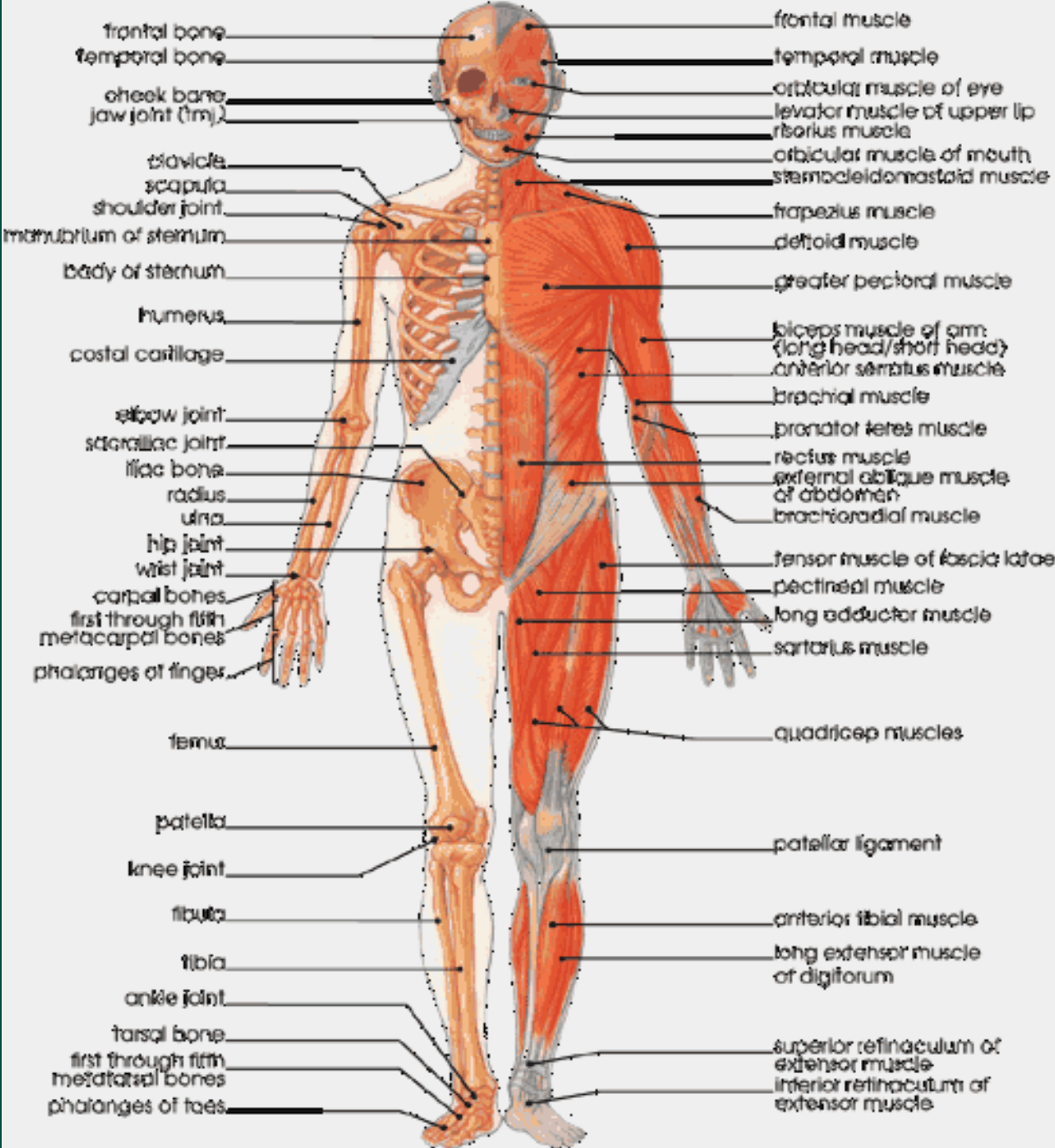
DRG= Diagnosis-Related Group GLOS= Geometric Mean Length of Stay SOI= Severity of Illness ROM= Risk of Mortality Source: University Hospitals Case Medical Center, Erica Remer MD. Used from FNCE 2015 presentation.

Academy/ASPEN Adult Malnutrition Guidelines

| Clinical Characteristics | Malnutrition in the context of acute illness or injury | | Malnutrition in the context of chronic illness | | Malnutrition in the context of social or environmental circumstances | |
|--------------------------|--|---|--|--|--|--|
| | Non-severe | Severe | Non-Severe | Severe | Non-Severe | Severe |
| Energy intake | <75% est needs >7 days | ≤50% est needs ≥5 days | <75% est needs ≥1 month | ≤75% est needs ≥1 month | <75% est needs ≥3 months | ≤50% est needs ≥1 month |
| Weight loss | 1-2% in 1 week 5% in 1 mo 7.5% in 3 mo | >2% in 1 week >5% in 1 mo >7.5% in 3 mo | 5% in 1 mo 7.5% in 3 mo 10% in 6 mo 20% in 1 year | >5% in 1 mo >7.5% in 3 mo >10% in 6 mo >20% in 1 year | >5% in 1 mo >7.5% in 3 mo >10% in 6 mo >20% in 1 year | >5% in 1 mo >7.5% in 3 mo >10% in 6 mo >20% in 1 year |
| Body Fat Loss | Mild | Moderate | Mild | Severe | Mild | Severe |
| Muscle Mass Loss | Mild | Moderate | Mild | Severe | Mild | Severe |
| Fluid Accumulation | Mild | Moderate to Severe | Mild | Severe | Mild | Severe |
| Grip Strength | N/A | Measurably reduced | N/A | Measurably reduced | N/A | Measurably reduced |



Nutrition-Focused Physical Exam (NFPE)



Rationale for NFPE:

- Included in nutrition assessment (NCP process)
- Height/Weight may be inaccurate or unavailable
- Standard of Practice
- Helps monitor response to nutrition intervention/nutrition support
- Necessary to identify malnutrition
- Responsibility to students/interns

What are we looking at:

- Subcutaneous fat loss:
 - orbital fat pads, buccal fat, triceps, ribs
- Muscle wasting:
 - temple, clavicle, shoulder, scapula, interosseous, thigh, calf
- Micronutrients:
 - hair, eyes, mouth, skin, nails
- Edema:
 - Generalized, sacral, lower extremity

Hand Grip Strength



Hand dynamometer can be used to determine if the patient has reduced grip strength. The normative standards are supplied by the manufacturing company of the measurement device.

Hand-grip strength has been shown to predict post-op complications, length of stay, readmission, likelihood of returning to previous home setting and mortality in hospitalized patients.

Sample PES (Problem-Etiology-Solution) Statements

Severe Malnutrition in context of acute illness or injury

- Severe malnutrition related to inadequate protein-energy intake in setting of acute pancreatitis, and inadequate enteral nutrition infusion as evidenced by enteral nutrition meeting less than 50% of estimated energy needs; moderate muscle wasting (temple, clavicle), and subcutaneous fat loss (orbital region, triceps).

Severe Malnutrition in Context of Chronic Illness

- Severe Malnutrition related to inadequate protein-energy intake with increased protein-energy needs in setting of chemo treatment for stage II renal cancer as evidenced by <75% energy intakes compared to estimated needs for 2 months; weight loss of 10% (15 pounds) over 7 weeks; severe subcutaneous fat loss (depressed orbital fat pads, triceps, apparent ribs) and muscle wasting (sunken temples, protruding clavicle, squared shoulders, depressed interosseous).

Non-Severe Malnutrition in Context of Social or Environmental Circumstances

- Moderate Malnutrition related to inadequate oral intake due to limited access of food in setting of financial strains as evidenced by consuming <50% of estimated energy needs for >5 months; moderate muscle wasting (temple, clavicle) and subcutaneous fat loss (orbital region).

Malnutrition Project at Mercy

Reimbursement Rates

- Mercy's baseline reimbursement for patients discharged with a malnutrition diagnosis was found to be 3.2%.
- Similar hospitals (one being University of Iowa) reported baseline reimbursement rates of 4.4%.

Interdisciplinary Team

- Dietitians

- Obtained training for proper documentation of malnutrition, which includes a nutrition focused physical exam 5/9/16.
- Use “PES” statements in our notes for nutrition diagnoses.

Continued...

- Assume responsibility for ensuring a patient's nutrition care plan is documented carefully in the EHR, updated regularly, and communicated effectively to all health care providers.
- Provide patients, family members, and caregivers with nutrition education and a comprehensive post-hospitalization healthcare plan.
- Ensure patient and caregiver understand the importance of follow-up nutrition assessment and education.

Resources We Used:

- Abbott webinars regarding malnutrition and simulations of nutrition-focused physical exam
- AND on-site training for nutrition-focused physical exam.
- JPEN /AND publications regarding the assessment and diagnosis of malnutrition (“Consensus Statement of the Academy of Nutrition and Dietetics/American Society for Enteral and Parenteral Nutrition: Characteristics Recommended for the Identification and Documentation of Adult Malnutrition (Undernutrition)”, “Differentiating Malnutrition Screening and Assessment: A Nutrition Care Process Perspective” (JAND), “Evaluation of Muscle and Fat Loss as Diagnostic Criteria for Malnutrition” (JPEN), “Critical Role of Nutrition in Improving Quality of Care: An Interdisciplinary Call to Action to Address Adult Hospital Malnutrition” (MEDSURGE Nursing).
- AND Malnutrition listserve

Continued...

- Learned from real-life experiences:
 - Read publications on case-studies/implementation of Malnutrition coding
 - Communicated with University of Iowa to learn how they implemented and maintained their project on diagnosing malnutrition
- Nutrition Focused Physical Exam Pocket Guide (AND)
- ASPEN Online Malnutrition Toolkit

Interdisciplinary team continued..

- Documentation Specialists
 - Ensure all necessary information is available for physician.
 - Communicate dietitian diagnosis to physician.

Interdisciplinary team continued..

- Physicians

- Include malnutrition diagnosis (ICD 10) in documentation if in agreement with dietitian.
- Incorporate nutrition into routine care checklists and processes.
- Help to communicate program and educate other physicians.
 - Dr Rooney, Dr Gueverra-Hernandez, Dr Rowlet, Dr Ntatin, Dr Ibrahim.

Interdisciplinary team continued..

- Finance
 - Track reimbursement and communicate denied claims for resubmission to learn new criteria for third party reimbursement.

Interdisciplinary team continued..

- Information Systems/IT
 - Possibly develop “smart template” for physician to be able to directly pull dietitian diagnosis into their note
 - Revise EHR with “smart phrases” to facilitate easier documentation and communication of information.

What is Nursing's Role?

- Recognize the essential role that nurses play in enhancing patient nutrition outcomes
- Incorporate nutrition into routine care checklists/processes
- Discuss patient's intakes into team rounds

What is Nursing's Role?

- Ensure every hospital patient is screened for malnutrition within 24 hours of admission
 - Malnutrition Screening Tool (MST)
 - Complete as accurately as possible
 - Automatically generates a consult to the dietitian for every score of “2” or greater
 - Dietitians are responsible for assessing patients within 48 hours of receiving an MST consult

MST (Malnutrition Screening Tool)

| | |
|--|---|
| Has the resident/patient lost weight recently without trying? | |
| No | 0 |
| Unsure | 2 |
| Yes, how much? | |
| 1 - 5 kg | 1 |
| 6 - 10 kg | 2 |
| 11 - 15 kg | 3 |
| >15 kg | 4 |
| Has the resident/patient been eating poorly because of a decreased appetite? | |
| No | 0 |
| Yes | 1 |
| Total score _____ | |

Malnutrition Screen

Eating Poorly Due to
Decreased Appetite

- ☐ No
☒ Yes

Unplanned Weight Loss in
Past 3 to 6 Months

- ☐ No
☐ Yes
☒ Unsure

Unplanned Weight Loss
Amount

- ☐ 2-13 lbs / 0.9-5.9 kg
☐ 14-23 lbs / 6.4-10.5 kg
☐ 24-33 lbs / 10.6-15 kg
☐ 33 lbs or more / 15 kg or more
☒ Unsure

Malnutrition Screening
Tool Total

5

Malnutrition Screening Tool Score Greater than or Equal
to 2 = RN provides oral nutrition supplement 2-3 times
per day per facility standards.

Malnutrition Screening
Tool Risk Level

- ☐ Patient not at risk ☒ Patient at risk

What is Nursing's Role?

- When possible, avoid disconnecting TPN or TF's for patients when they are ambulating, repositioning, transferring, or for procedures
- Monitor and document food and oral nutrition supplement intake.
 - Cerner, calorie counts
- Consult dietitian regarding concerns about oral intake.

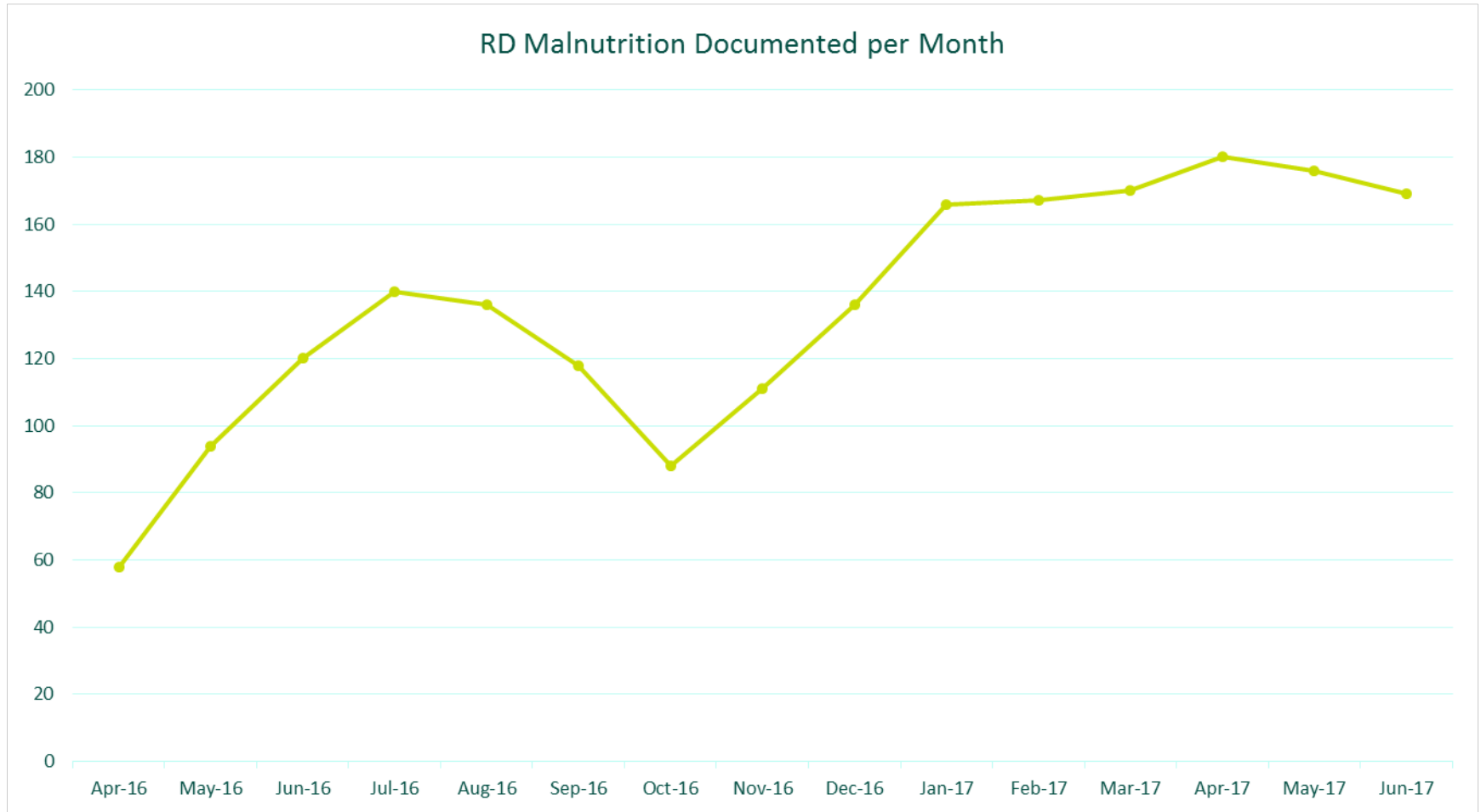
What is Nursing's Role

- Include discussions about nutrition into handoff of care and nursing care plans.
- Include nutrition as part of conversations with patients and their family members/caregivers
- Understand that dietitians use nursing documentation of height, weight, oral intakes, I/O's, edema.
 - Key components to assess and monitor a patient's nutrition status.

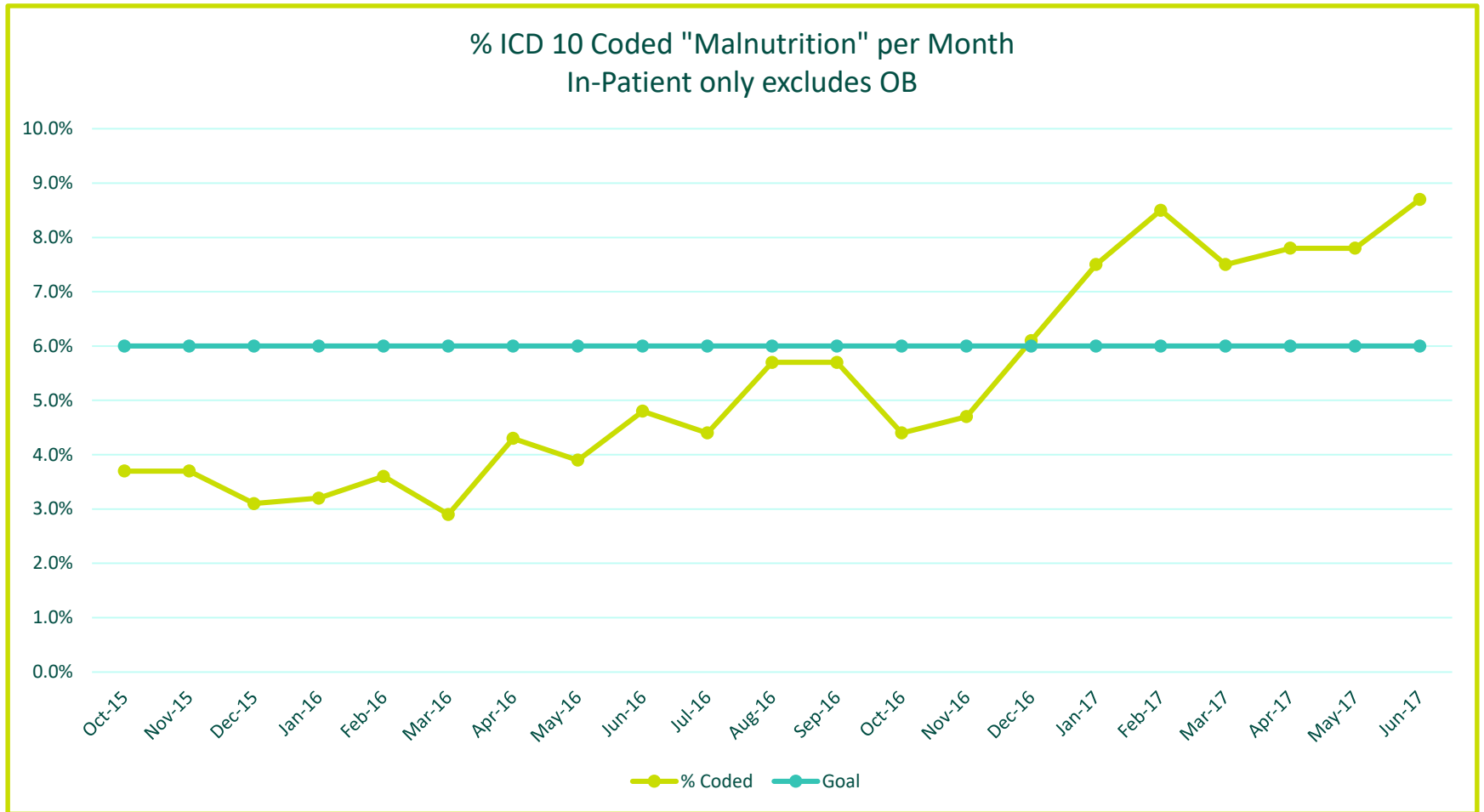
What is Nursing's Role?

- Encourage Oral Intakes
 - Meals, beverages, snacks
 - Oral nutrition supplements
 - Ensure, Mighty Shakes, Ensure Clear, Glucerna, Magic Cup, Ensure Pudding, Juven, Beneprotein (protein powder), Unjury (protein powder)

Mercy data



Data Continued...



Summary

- Nutrition care is low risk and cost-effective and should be a high priority in the hospital setting.
- Early nutrition intervention in collaboration with the interdisciplinary team is critical in addressing the problem of malnutrition and has great potential to improve patient care/ and outcomes as well as reduce hospital costs.

References

1. Field, LB. Differentiating Malnutrition Screening and Assessment: A Nutrition Care Process Perspective. *J Acad Nutr Diet*. 2015; 115(5): 824-828.
2. Kirkland, L, Kashiwagi, D, Brantley, S, Scheurer, D, Varkey, P. Nutrition in the hospitalized patient. *J Hosp Med*. 2013;8(1):52-58.
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4. White JV, Gunther P, Jensen G, Malone A, Schofield M. Consensus Statement of the Academy of Nutrition and Dietetics/American Society for Parenteral and Enteral Nutrition: Characteristics Recommended for the Identification and Documentation of Adult Malnutrition *J Acad Nutr Diet*. 2012; 112 (5): 730-738.

Questions

