Body Mass Index and malnutrition: Interrelated comorbidities

by Richard D. Pinson, MD, FACP, CCS

Documentation of both malnutrition and body mass index (BMI) affects MS-DRGs’ assignment as CCs or MCCs and can clarify the patient’s SOI as well as the complexity of care required to treat him or her. Understanding the interrelationship between BMI and malnutrition as well as the clinical criteria and coding rules applicable to both of these concepts is a fundamental skill for CDI specialists to master.

Defining BMI

Except for extremely muscular individuals, BMI is a relatively accurate measure of an individual’s body fat content. The higher a person’s BMI, the greater the health risks. For example, conditions such as diabetes, hypertension, cardiovascular disease, and increased cancer risk are directly related to the degree of obesity as measured by BMI. Conversely, low BMI (less than 19 kilograms per square meter [kg/m²]) is also associated with increased morbidity and mortality; the lower the BMI, the greater the risk.

BMI is calculated using a person’s height and weight and the following equation: BMI = (weight in pounds) ÷ 2.2 = kg/m [height in inches ÷ 39.6]².

BMI as significant comorbidity

For inpatient coding purposes, a BMI less than 19 (V85.0) or greater than or equal to 40 (V85.4X) is considered a significant comorbidity which may contribute to SOI and impact DRG assignment. To qualify for code assignment, the BMI must be documented in the medical record by the physician, or by a clinician (e.g., a nutritionist or nurse). There must also be a clinical diagnosis or condition documented by the physician that corresponds to the abnormal BMI and thereby explains its significance, according to AHA Coding Clinic for ICD-9-CM, Second Quarter 2010, p. 15, and Fourth Quarter 2008, p. 191. A nutrition note may be the only place in the medical record where BMI is documented, and it may also provide clues to the underlying condition. Certainly, the presence of a nutrition note implies that an underlying condition is likely present.

Electronic medical records typically offer an excellent opportunity for documenting BMI. Electronic records automatically populate the BMI as calculated from the

Malnutrition query opportunity

Editor’s Note: The following physician query scenario and sample was provided by Richard D. Pinson, MD, FACP, CCS.

Mr. Smith is a 72-year-old male with esophageal cancer who is admitted for aspiration pneumonia. The documentation includes the following:

- Nutrition consult indicates a body mass index (BMI) of 15.9 and weight loss of 25 pounds in the last three months
- Lab shows albumin = 1.8, prealbumin = 4.7, and hemoglobin = 9.0
- Physical exam notes temporal wasting and muscle atrophy
- GI consult ordered for possible PEG tube

What are the query opportunities in this case?

Answer: A BMI less than 19 qualifies as a CC if there is an associated condition documented that makes it clinically significant. Esophageal cancer may qualify, but Mr. Smith has multiple clinical criteria for severe malnutrition, which would be an MCC.

Sample query to Dr. Jones

Dear Dr. Jones,

Mr. Smith was admitted with esophageal cancer and aspiration pneumonia. Other information in the medical record indicates that he has a BMI of 15.9, weight loss of 25 pounds, albumin 1.8, prealbumin 4.7, temporal wasting, muscle atrophy, and may need a PEG tube.

Based on your professional judgment, can you further clarify in the progress notes the clinical significance or condition that these findings represent, if any, and its severity?

For permission to reproduce part or all of this newsletter for external distribution or use in educational packets, please contact the Copyright Clearance Center at www.copyright.com or 978/750-8400.
patient’s height and weight—especially if the BMI is incorporated into the provider’s history and physical.

**Abnormal BMI-associated conditions**

While the clinical definition of morbid obesity is a BMI greater than or equal to 40, documentation of “obesity,” “overweight,” or similar terms should suffice. For a BMI less than 19, a diagnosis such as “malnutrition,” “underweight,” or “nutritional risk” should do, especially if the physician requests a nutrition consult. The conditions typically associated with specific BMI ranges are listed in the table below titled “Clinical descriptions associated with BMI.”

Conditions such as obesity, morbid obesity, overweight, and underweight are not classified as CCs themselves—typically because they are often used subjectively by clinicians in contrast to the more specific BMI calculation.

**Malnutrition**

Although BMI is a clean, precise mathematical calculation, the concept of malnutrition is inexact and somewhat subjective. First, there are no authoritative definitions of malnutrition or the severity of malnutrition, although some are expected soon from the American Dietetic Association. Furthermore, the diagnosis of malnutrition is a complicated, multi factorial clinical determination (see the table titled “General classification of malnutrition” at right) that requires more than simply finding a low albumin or prealbumin. Malnutrition includes such criteria as:

» Physical findings like emaciation, cachexia or muscle/adipose wasting, or atrophy (e.g., temporal wasting, thenar atrophy)

» Presence of risk factors such as cancer, chemotherapy, AIDS, alcoholism, end-stage disease, malabsorption syndromes, or other gastrointestinal and pancreatic disorders

» Biochemical markers including low albumin, prealbumin, cholesterol, transferrin, blood urea nitrogen/creatinine ratio, and/or anemia

» Recent or progressive weight loss, low body weight, or low BMI

The ultimate diagnosis of malnutrition and its severity depends upon the physician’s clinical judgment based on a constellation of the above findings in each individual case. No particular finding is required or definitive.

As summarized in the “General classification of malnutrition” table, the severity of malnutrition should be classified as mild (code 263.1), moderate (code 263.0), or severe (codes 260, 261, 262). Therefore, “unspecified” malnutrition (263.9) really has no clinical meaning, but it is a coding convention used when the severity of malnutrition has not been documented by a provider.

For MS-DRGs, severe malnutrition is considered an MCC that contributes to a higher SOI. It’s interesting to note that coding rules consider the term “emaciation” to be severe malnutrition (code 261)—an MCC. However, the term “cachexia” (code 799.4) is only a CC, even though physicians sometimes document emaciation and cachexia interchangeably.

If the provider documents cachexia, it may be worth a query to determine if the true condition is emaciation or severe malnutrition, as long as the appropriate criteria are present. Malnutrition, unspecified (code 263.9) is classified as a CC, while malnutrition specified as mild or moderate is neither a CC nor an MCC.

<table>
<thead>
<tr>
<th>General classification of malnutrition*</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Criteria</strong></td>
</tr>
<tr>
<td>Albumin (gm/dl)</td>
</tr>
<tr>
<td>Prealbumin (mg/dl)</td>
</tr>
<tr>
<td>Ideal body weight (IBW)</td>
</tr>
<tr>
<td>Usual body weight (UBW)</td>
</tr>
<tr>
<td>BMI (kg/m²)</td>
</tr>
</tbody>
</table>

*The diagnosis of malnutrition is multifactorial and includes other clinical criteria. Ultimately it is based on a provider’s professional judgment. No particular finding is required or definitive.
Marasmus and kwashiorkor

The exotic terms marasmus (code 261) and kwashiorkor (code 260) have been used for almost a century to describe two distinct clinical manifestations of severe malnutrition in children living in underdeveloped countries.

The term “kwashiorkor” was first used in 1933 by Dr. Cicely Williams to describe severe protein deficiency with some degree of preserved caloric (carbohydrate) intake among children in Africa. The most striking and characteristic finding is severe edema associated with malnutrition. Other symptoms include retarded growth, changes in skin and hair pigment, immune deficiency, and pathologic changes in the liver. Kwashiorkor was never meant to apply to adults, and such severe protein deficiency alone is an extremely rare condition in America.

The word “marasmus” has more ancient origins, coming into use during the mid-17th century and derived from Greek and Latin words meaning “to wither or waste away.” Since that time, marasmus has been commonly used to describe severe malnutrition or starvation. Only more recently did it become specifically associated with severe childhood protein-calorie malnutrition without edema—in contrast to kwashiorkor, where protein deficiency and edema are hallmarks of the disease.

While kwashiorkor and marasmus continue to capture academic interest and still have pertinence in describing childhood malnutrition in underdeveloped regions of the world, these terms have no clinical application to malnourished adults in America. Seeing either of these conditions in American children would likewise be a most unusual event indeed. The classification of malnutrition as severe, moderate, and mild is a much more appropriate and scientific approach for healthcare in America and other developed nations.

Obesity as malnutrition?

Defining obesity as a form of malnutrition is an area of great controversy, with vocal adherents on both sides. Certainly, the word “malnutrition” in its broad, literal sense of “bad” (“mal-”) nutrition could be applied to obesity. On the other hand, the historical context and clinical application of the term has always implied “undernourishment.” In either case, even obese patients can be malnourished (based on the criteria discussed above) if they become severely ill.

Summary

In summary, if a patient has an abnormal BMI less than 19 kg/m² or greater than or equal to 40 kg/m², a CDI specialist should ensure that the patient’s BMI is documented in the medical record as well as the clinical condition associated with it. Both of these are assigned as CCs under MS-DRGs.

The recognition of malnutrition and its severity is crucial for proper patient management. It should be classified as mild, moderate, or severe. Diagnosis requires the provider to consider multiple clinical variables.

Since there are currently no authoritative guidelines, each hospital should develop its own multidisciplinary criteria for malnutrition (and its severity) to be used by nutritionists, physicians, and other clinical staff. Such institutional criteria will support the correct and compliant coding of malnutrition.

Editor’s Note: Dr. Pinson is a principal of HCQ Consulting, which specializes in CDI program implementation, restructuring, and education of physicians, documentation specialists, and coders. He is coauthor, with Cynthia L. Tang, RHIA, CCS, of The 2012 CDI Pocket Guide, published by HCPro. The content of this article is adapted with permission from HCQ Consulting.

The 2012 CDI Pocket Guide

Richard D. Pinson, MD, FACP, CCS, and Cynthia L. Tang, RHIA, CCS, created this 200-plus page pocket manual to help CDI and coding professionals focus on the most common high-volume, high-yield opportunities to improve clinical documentation, coding, and DRG assignment. The 2012 CDI Pocket Guide helps you take clinical findings, dig deeper, and look for additional details—such as medications and other factors—to develop the most accurate picture of the patient’s condition.

To purchase a copy for yourself and your staff, call toll-free 800/650-6787 or e-mail customerservice@hcpro.com.