



## Evaluation & Management of the Nutritional Needs of a Critically Ill Patient

<b>Description of the Activity</b>	Surgical intensivists must recognize the importance of nutrition in critically ill patients and understand, implement, and manage individualized nutritional strategies for each patient.
<b>Functions</b>	<ul style="list-style-type: none"><li>❖ Resuscitation<ul style="list-style-type: none"><li>➤ Evaluate the premorbid nutritional status of critically ill patients.</li><li>➤ Consider patients' goals of care when initiating nutritional support.</li><li>➤ Pick a suitable route of nutrition for critically ill patients.</li><li>➤ Develop an evidence-based nutritional strategy tailored to premorbid and morbid diagnoses, including calculation of nutrition needs.</li><li>➤ Recognize the risks and contraindications associated with each route of nutrition and how to address them.</li><li>➤ Tailor the use of supplemental micronutrients, vitamins, and minerals to each nutritional support plan.</li><li>➤ Recognize patients who may not be safe for oral (PO) intake.</li></ul></li> <li>❖ Ongoing Management<ul style="list-style-type: none"><li>➤ Recognize that nutritional support is a dynamic process that requires ongoing reassessment.</li><li>➤ Identify and respond to the effects of nutrition on ventilator weaning and wound healing.</li><li>➤ Collaborate and communicate with other medical providers, nutritionists, and pharmacists regarding the nutritional needs of critically ill patients with competing issues.</li><li>➤ Recognize what laboratory values are important to follow in critically ill patients, and identify their limitations.</li><li>➤ Identify the interplay of fluid and electrolyte management with nutrition.</li><li>➤ Manage patients with gastrointestinal losses and chronic diarrhea.</li></ul></li> <li>❖ Transition Of Care<ul style="list-style-type: none"><li>➤ Recognize when patients are achieving endpoints of nutritional resuscitation.</li><li>➤ Recognize the need for long-term feeding access or when nutritional support can be weaned.</li><li>➤ Perform ongoing monitoring and reassessment of nutritional status.</li><li>➤ In the event that disease has become acutely life-limiting and there are no additional disease-directed treatments, identify the end-of-life stage of care, and lead the team in helping patients/caregivers in this stage prioritize comfort and symptom-directed therapy as indicated.</li></ul></li></ul>



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### Scope

- ❖ In scope
  - Critically ill patients with obesity
  - Critically ill patients at risk for malnutrition
  - Selection of nutritional support and mode of administration
    - Enteral
    - Parenteral
  - Assessment of adequacy of nutritional support
  - Critically ill patients with electrolyte, vitamin and fluid abnormalities
  - Critically ill patients with comorbidities impacting nutritional support (e.g. renal dysfunction, hepatic dysfunction)



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<p style="text-align: center;"><b>1</b></p> <p><b><u>Limited Participation</u></b></p> <p>Demonstrates limited critical care knowledge and skills</p> <p><b><u>Framework:</u></b></p> <p>What a learner directly out of residency should know</p> <p>Performs ICU procedures on straightforward patients but requires supervision/direction for more complex patients/procedures</p> <p>Requires continuous direct supervision by the attending for patient management</p>	<ul style="list-style-type: none"> <li>• Completes an initial nutritional assessment of a critically ill patient but without evaluating baseline nutritional status</li> <li>• Recognizes that a critically ill patient requires nutritional support but requires active assistance to choose the correct route, type, and supplements</li> <li>• Demonstrates limited ability to incorporate the current diagnosis into a nutritional support plan (eg, ECF, short gut, recent surgery, malnutrition)</li> <li>• Displays limited understanding of evidence-based guidelines when developing a nutritional support plan for a patient</li> <li>• Develops a nutrition plan but without considering patient/caregiver preferences or goals of care</li> </ul>	<ul style="list-style-type: none"> <li>• Requires active assistance to interpret nutritional data</li> <li>• Requires active assistance to incorporate fluid and electrolyte balance into a nutritional support plan</li> <li>• Requires active assistance to recognize that a nutritional strategy is inadequate or patient status has changed and make the necessary modifications</li> </ul>	<ul style="list-style-type: none"> <li>• Requires active assistance to develop strategies for ongoing management and reassessment of chronic nutritional support</li> <li>• Requires ongoing assistance to recognize long-term complications of parenteral nutrition (including central access)</li> <li>• Needs active assistance to develop a strategy for chronic nutritional support (eg, conversion of NGT to surgical gastrostomy tube)</li> <li>• With active assistance, initiates a goals-of-care conversation with a patient/caregiver(s) about long-term nutritional support</li> <li>• Requires active assistance to recognize the resources involved in long-term nutritional support</li> </ul>
<p style="text-align: center;"><b>2</b></p> <p><b><u>Direct Supervision</u></b></p> <p>Initiates straightforward management for many critical illnesses but requires active direction for further management and complex critical illnesses</p>	<ul style="list-style-type: none"> <li>• Recognizes the need for and initiates nutritional support in a critically ill patient but for a more complex patient requires assistance to choose the correct route, type, and supplements</li> <li>• Completes an initial nutritional assessment of a critically ill patient but needs some</li> </ul>	<ul style="list-style-type: none"> <li>• Requires some assistance to interpret nutritional data</li> <li>• Requires occasional assistance to incorporate fluid and electrolyte balance into a nutritional support plan</li> <li>• Requires intermittent assistance to recognize that a nutritional strategy is</li> </ul>	<ul style="list-style-type: none"> <li>• Requires intermittent assistance to develop strategies for ongoing management and reassessment of chronic nutritional support in a straightforward patient</li> <li>• Requires intermittent assistance to recognize long-term complications of</li> </ul>



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<p><b>Framework:</b></p> <p>Demonstrates a sufficient fund of knowledge for basic critical care and some knowledge of complex critical illness</p> <p>Performs ICU procedures on straightforward patients but may require supervision/direction for more complex patients/procedures</p> <p>The attending gives active help throughout to direct the clinical course.</p>	<p>prompting to include baseline nutritional status</p> <ul style="list-style-type: none"> <li>• Incorporates the current diagnosis(es) into a nutritional support plan (eg, ECF, short gut, recent surgery, malnutrition) with supervision</li> <li>• Requires prompting to apply evidence-based guidelines when developing a nutritional support plan for a more complex patient</li> <li>• With prompting, implements a nutrition plan taking into account patient/caregiver preferences and goals of care</li> </ul>	<p>inadequate or patient status has changed and make the necessary modifications</p>	<p>parenteral nutrition, including central access</p> <ul style="list-style-type: none"> <li>• Needs some assistance to develop a strategy for chronic nutritional support (eg, conversion of NGT to surgical gastrostomy tube)</li> <li>• With some assistance, initiates a goals-of-care conversation with a patient/caregiver(s) regarding long-term nutritional support</li> <li>• Requires some assistance to recognize the resources involved in long-term nutritional support</li> </ul>
<p><b>3</b></p> <p><b>Indirect Supervision</b></p> <p>Manages most critical illnesses but may require guidance for more complex patients or atypical presentations</p> <p><b>Framework:</b></p> <p>Demonstrates a sufficient fund of knowledge for basic and most complex critical care</p> <p>Independently performs most ICU procedures and</p>	<ul style="list-style-type: none"> <li>• Chooses the correct route, type, and supplements for a straightforward patient and requires intermittent assistance for a more complex patient</li> <li>• Completes initial nutritional assessment of a critically ill patient and includes baseline nutritional status</li> <li>• Incorporates current diagnosis(es) into a nutritional support plan (eg, ECF, short gut, recent surgery, malnutrition) with minimal input</li> </ul>	<ul style="list-style-type: none"> <li>• Requires occasional assistance to interpret nutritional data in a complex patient</li> <li>• Requires intermittent assistance to incorporate fluid and electrolyte balance into a nutritional support plan and modify the supplement type or route of administration in a complex patient</li> <li>• Recognizes that a nutritional strategy is inadequate or patient status has changed and makes the necessary modifications for a straightforward patient</li> </ul>	<ul style="list-style-type: none"> <li>• Requires minimal assistance to develop strategies for ongoing management and reassessment of chronic nutritional support in a complex patient</li> <li>• Requires minimal assistance to recognize long-term complications of parenteral nutrition, including central access</li> <li>• Needs intermittent assistance to develop a strategy for chronic nutritional support (eg, conversion of NGT to surgical gastrostomy tube) in a complex patient</li> </ul>



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<p>supervises procedures on straightforward patients</p> <p>The learner can manage a critically ill patient in straightforward circumstances but may require input to manage the most complicated ICU patients.</p>	<ul style="list-style-type: none"> <li>Applies evidence-based guidelines when developing a nutritional support plan for a more complicated patient</li> <li>With minimal assistance, implements a nutrition plan, taking into account patient/caregiver preferences and goals of care</li> </ul>		<ul style="list-style-type: none"> <li>Requires minimal assistance to initiate a goals-of-care conversation with a patient/caregiver(s) surrounding long-term nutritional support</li> <li>Requires minimal assistance to recognize the resources involved in long-term nutritional support</li> </ul>
<p><b>4</b></p> <p><b><u>Practice Ready</u></b></p> <p>Independently manages complex critical illnesses and leads a critical care team</p> <p><b><u>Framework:</u></b></p> <p>Demonstrates an attending-level fund of knowledge</p> <p>Independently performs and supervises procedures</p> <p>The attending is available at the request of the learner but is not routinely needed for common or complex critical illness.</p>	<ul style="list-style-type: none"> <li>Independently develops and implements a nutritional support plan using consultative services as indicated</li> <li>Incorporates baseline nutritional status into a nutritional support plan and adjusts the plan accordingly</li> <li>Recognizes implications of the current diagnosis(es) on the nutritional support plan (eg, ECF, short gut, recent surgery, malnutrition) and independently develops and implements a comprehensive plan</li> <li>Critically appraises and applies evidence-based guidelines when developing a nutritional support plan for a critically ill patient while reconciling uncertainties or conflicting data</li> <li>Independently engages with a patient/caregiver(s) to formulate an appropriate nutrition plan that aligns with goals of care</li> </ul>	<ul style="list-style-type: none"> <li>Orders and interprets objective data as it relates to nutritional status and adjusts the nutritional support plan accordingly</li> <li>Modifies the nutritional support plan (eg, changes in route of administration or supplement type) for a patient with complex needs (eg, hepatic failure, enteroatmospheric fistula) or when status and needs change</li> <li>Leads and contributes to a multidisciplinary team to optimize patient nutritional status</li> </ul>	<ul style="list-style-type: none"> <li>Independently develops a chronic nutritional support monitoring plan and adjusts nutritional support accordingly for a complex patient (eg, ECF, hepatic dysfunction)</li> <li>Anticipates and addresses complications of long-term nutritional support and access</li> <li>Independently engages with a complex patient and their caregiver(s) to develop a chronic nutritional support plan that aligns with goals of care</li> <li>Coordinates care and navigates barriers to care for a patient with long-term nutritional support needs</li> </ul>