NUTRITION

INTRODUCTION

Optimal nutrition in the hospital setting has been shown to improve outcomes in adult patients, and there is a growing body of evidence that the same is true for pediatric patients. Malnutrition refers to any disorder of nutritional status resulting from a deficiency or excess of nutrient intake, imbalance of essential nutrients, or impaired nutrient metabolism. Malnutrition occurs in up to half of hospitalized children in the United States, but varies considerably by age and disease state. An understanding of the fundamental nutritional requirements of pediatric patients is essential to providing optimal care for hospitalized children. Pediatric hospitalists should be experts in making objective nutritional assessments and managing frequently encountered nutritional problems. Pediatric hospitalists should lead, coordinate, or participate in multidisciplinary efforts to screen for malnutrition and improve the nutritional status of hospitalized pediatric patients.

KNOWLEDGE

Pediatric hospitalists should be able to:

- Describe the normal growth patterns for children at various ages and the potential effect of malnutrition on growth.
- List the anthropometric measurements commonly used to assess acute and chronic nutritional status.
- Describe the basic nutritional requirements for hospitalized pediatric patients, based on gestational age, chronologic age, weight, activity level, and other characteristics.
- Compare and contrast the composition of human milk versus commonly used commercial formulas, and explain why human milk is superior nutrition for infants.
- Describe the differences in composition of commonly used commercial formulas, as well as protein hydrosylate and other special formulas, and list the clinical indications for each type of formula.
- Compare and contrast the benefits and costs of blended foods versus commonly used enteral formulas as complete nutritional sources for children receiving gastric, duodenal, or jejunal tube feedings.
- List the indications for specific vitamin and mineral supplementation, including exclusive breastfeeding, chronic anti-epileptic therapy, food allergies resulting in extreme dietary restrictions, and others.
- List the factors that place hospitalized pediatric patients at risk for poor nutrition.
- Compare and contrast marasmus and kwashiorkor.
- Define the term protein-energy malnutrition.
- List the signs and symptoms of common vitamin and mineral deficiencies.
- List the indications and contraindications for both enteral and parenteral nutrition, and describe the complications associated with each type of supplemental nutrition.
- Discuss the monitoring needs for pediatric patients on chronic enteral or parenteral nutrition attending to electrolyte and mineral disturbances, growth, and other parameters.
- Describe the refeeding syndrome and list the risk factors associated with its development.
- Explain the importance of nutrition screening, as well as the indications for consultation with a nutritionist, gastroenterologist, or other subspecialist.

SKILLS

Pediatric hospitalists should be able to:

- Use anthropometric data to determine the presence, degree, and chronicity of malnutrition.
- Conduct a focused history and physical examination, attending to details that may indicate a particular nutrient, vitamin, or mineral deficiency.
- Conduct a directed laboratory evaluation to obtain information about nutritional status and vitamin or mineral deficiencies, as indicated.
- Calculate the basic caloric, protein, fat, and fluid requirements for hospitalized pediatric patients, for both daily needs and catch up growth.
- Provide lactation support to all mothers, especially those who are experiencing difficulty with initiating or maintaining breastfeeding or milk supply or those who have a complication from breastfeeding, including plugged ducts or mastitis.

- Choose an appropriate formula, delivery device, and method of administration when enteral nutrition is required.
- Initiate and advance parenteral nutrition using the appropriate initial composition of parenteral nutrition solution, delivery device, and method of administration when parenteral nutrition is required.
- Appropriately monitor laboratory values to ensure the efficacy of supplemental nutrition support and to screen for complications.
- Recognize and treat complications of both enteral and parenteral nutrition, such as metabolic derangements, infection, and delivery device malfunction.
- Recognize and treat the refeeding syndrome.
- Consult a nutritionist, gastroenterologist, or other subspecialists when indicated.

ATTITUDES

Pediatric hospitalists should be able to:

- Recognize the importance of screening for malnutrition and optimizing nutritional status for hospitalized pediatric patients.
- Communicate effectively with patients, the family/caregiver, and healthcare providers regarding findings and care plans.
- Collaborate with a nutritionist or subspecialists to devise and implement a nutrition care plan.
- Collaborate with the primary care provider and subspecialists to ensure coordinated, longitudinal care for children requiring specialized nutrition support.
- Arrange for an effective and safe transition of care from the inpatient to outpatient providers, preserving the multidisciplinary nature of the nutrition care team when appropriate.

SYSTEMS ORGANIZATION AND IMPROVEMENT

In order to improve efficiency and quality within their organizations, pediatric hospitalists should:

- Lead, coordinate, or participate in efforts to develop systems that support the initiation and maintenance of breastfeeding for infants
- Work with hospital administration, hospital staff, subspecialists, and other services/consultants to promote prompt nutritional screening for all hospitalized patients and multidisciplinary team care to address nutritional problems when indicated.
- Lead, coordinate or participate in the development and implementation of cost-effective, evidence-based care pathways to standardize the evaluation and management for hospitalized children with nutritional needs