



Complete Summary

GUIDELINE TITLE

Access for administration of nutrition support.

BIBLIOGRAPHIC SOURCE(S)

Access for administration of nutrition support. JPEN J Parenter Enteral Nutr 2002 Jan-Feb; 26(1 Suppl): 33SA-41SA. [125 references]

COMPLETE SUMMARY CONTENT

SCOPE
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INSTITUTE OF MEDICINE (IOM) NATIONAL HEALTHCARE QUALITY REPORT
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SCOPE

DISEASE/CONDITION(S)

Malnutrition

GUIDELINE CATEGORY

Evaluation
Management
Treatment

CLINICAL SPECIALTY

Gastroenterology
Internal Medicine
Nutrition
Surgery

INTENDED USERS

Advanced Practice Nurses
Dietitians

Hospitals
Nurses
Physician Assistants
Physicians

GUIDELINE OBJECTIVE(S)

- To revise the 1993 American Society for Parenteral and Enteral Nutrition Clinical Guidelines so that:
 - The Guidelines are factually up-to-date to reflect current, evidence-based, best approach to the practice of nutrition support
 - The Guidelines support the clinical and professional activities of nutrition support practitioners by articulating evidence-based recommendations upon which to base personal and institutional practices and resource allocation
 - The Guidelines serve as tools to help guide policy makers, health care organizations, insurers, and nutrition support professionals to improve the systems and regulations under which specialized nutrition support is administered
- To assist clinical practitioners who provide specialized nutrition support to patients in all care settings

TARGET POPULATION

Patients for whom enteral (EN) or parenteral (PN) specialized nutrition support (SNS) is indicated

INTERVENTIONS AND PRACTICES CONSIDERED

Enteral Nutrition (EN)

1. Selection of enteral device (nasogastric tube or gastrostomy tube) considering:
 - Gastrointestinal anatomy and function
 - Anticipated duration of enteral feeding
 - Potential for aspiration
2. Nasogastric tube placement
 - Bedside placement technique
 - Fluoroscopic or endoscopic guidance
3. Nasogastric and nasogastric tube placement
 - Radiographic confirmation
 - Monitoring of gastric residual volumes
 - Flushing of feeding tubes
 - Standardized EN protocols

Parenteral Nutrition (PN)

1. Catheter insertion
2. Chest x-ray
3. Full barrier precautions
4. Skin preparation

- Chlorhexidine
5. Disinfection before medication access or blood sampling
 6. Low dose anticoagulant therapy
 7. Specialized nursing teams

Monitoring for Efficacy

1. Comparison of nutrition and outcome goals with nutrition and outcome measures

Monitoring for Complications

1. Laboratory values, including:
 - Serum phosphorus
 - Magnesium
 - Serum electrolytes (sodium, potassium, chloride and bicarbonate)
 - Glucose levels
 - Serum triglyceride levels
2. Liver function tests
3. Bone densitometry
4. Postpyloric placement of feeding tubes (patients at risk for aspiration)

MAJOR OUTCOMES CONSIDERED

- Safety and efficacy of specialized nutrition support
- Rates of complications
- Cost-effectiveness

METHODOLOGY

METHODS USED TO COLLECT/SELECT EVIDENCE

Searches of Electronic Databases

DESCRIPTION OF METHODS USED TO COLLECT/SELECT THE EVIDENCE

Not stated

NUMBER OF SOURCE DOCUMENTS

Not stated

METHODS USED TO ASSESS THE QUALITY AND STRENGTH OF THE EVIDENCE

Weighting According to a Rating Scheme (Scheme Given)

RATING SCHEME FOR THE STRENGTH OF THE EVIDENCE

A modified version of the method used by the Agency for Healthcare Research and Quality (AHRQ), US Department of Health and Human Services was used:

- A. There is good research-based evidence to support the guideline (prospective, randomized trials).
- B. There is fair research-based evidence to support the guideline (well-designed studies without randomization).
- C. The guideline is based on expert opinion and editorial consensus.

METHODS USED TO ANALYZE THE EVIDENCE

Systematic Review

DESCRIPTION OF THE METHODS USED TO ANALYZE THE EVIDENCE

Not stated

METHODS USED TO FORMULATE THE RECOMMENDATIONS

Expert Consensus

DESCRIPTION OF METHODS USED TO FORMULATE THE RECOMMENDATIONS

Experts selected for their detailed knowledge and experience in a chosen niche reviewed the primary literature, synthesized and summarized it, and formulated the guideline statements.

In situations where evidence-based recommendations could not be made because of a lack of relevant clinical studies, recommendations are classified as being based on class C data (see the "Rating Scheme for the Strength of Evidence" field) and reflect an attempt to make the best recommendations possible within the context of the available data and expert clinical experience.

Issues Considered During Recommendation Formulation

- A thread running throughout many of the disease-specific guidelines is the rationale for choosing enteral over parenteral specialized nutrition support (SNS) or alternatively parenteral over enteral when a decision to use SNS has been made.
- Another fundamental issue that influenced many of the discussions and recommendations is the relationship between nutrition assessment, nutrition status, malnutrition, and severity of disease.

Refer to the companion document: Guidelines for the use of parenteral and enteral nutrition in adult and pediatric patients. Section I: Introduction. JPEN J Parenter Enteral Nutr 2002 Jan-Feb;26(1 Suppl): 1SA-6SA.

RATING SCHEME FOR THE STRENGTH OF THE RECOMMENDATIONS

Not applicable

COST ANALYSIS

There are some data suggesting a relationship between nutrition efficacy monitoring and improved cost-effectiveness. These studies include three prospective trials. Two randomized trials investigated enhanced specialized nutrition support (SNS) versus standard SNS in a heterogeneous group of patients, and one study looked at early enteral nutrition (EN) versus no nutrition intervention in gastrointestinal surgical patients. In all three studies, nutrition efficacy was monitored and the incidence of complications was an outcome that was measured. In all three studies, the intervention groups had significantly fewer complications and lower costs compared with standard therapy. In one study, nitrogen balance was also used as an outcome variable, and positive nitrogen balance was associated with decreased costs as well.

METHOD OF GUIDELINE VALIDATION

External Peer Review
Internal Peer Review

DESCRIPTION OF METHOD OF GUIDELINE VALIDATION

Completed drafts were reviewed by the section editors (the members of the Clinical Guidelines Task Force [CGTF]), edited and/or rewritten, and then reviewed twice by the members of the CGTF as a group. The entire document was then reedited by the CGTF Chair. This four-times–edited draft was submitted to the American Society for Parenteral and Enteral Nutrition (A.S.P.E.N.) Board of Directors and more than 180 experts in the field of nutrition support (including experts and organizations outside of A.S.P.E.N.) for content, format, and style review. These reviewers were also specifically asked to check each guideline statement for appropriateness, accuracy, and strength of evidence. This review phase stimulated a final cycle of editing by the CGTF and the CGTF Chair. The final document was then approved by the A.S.P.E.N. Board of Directors and submitted to the Journal of Parenteral and Enteral Nutrition for publication.

RECOMMENDATIONS

MAJOR RECOMMENDATIONS

The strength of the evidence supporting each guideline statement is coded A, B, or C. Definitions of these classifications is provided at the end of the "Major Recommendations" field.

Enteral Access

1. Decisions regarding access for enteral nutrition (EN) should be made considering the effectiveness of gastric emptying, gastrointestinal anatomy, and aspiration risk. (B)
2. Nasoenteric tube placement should initially be attempted using a spontaneous or other bedside placement technique; if this is unsuccessful, fluoroscopic or endoscopic guidance should be used. (A)

3. Radiographic confirmation of the feeding tube tip position should be obtained after placement of a nasogastric or nasoenteric access tube. (B)
4. Gastric residuals should be checked frequently when feedings are initiated and feedings should be held if residual volumes exceed 200 mL on two successive assessments. (A)
5. Feeding tubes should routinely be flushed with 20 to 30 mL of warm water every 4 hours during continuous feedings and before and after intermittent feedings and medication administration. (A)
6. Standardized protocols for enteral nutrition ordering, administration, and monitoring should be utilized. (B)

Parenteral Access

1. Parenteral nutrition (PN) should be delivered through a catheter located with its distal tip in the superior vena cava or right atrium. (A)
2. A chest x-ray should be obtained after catheter insertion unless internal jugular or upper extremity IV access is obtained by interventional radiology techniques. (B)
3. Full-barrier precautions should be used during the insertion of central lines. (B)
4. Skin preparation before catheter insertion should be performed using chlorhexidine. (B)
5. Catheter hubs and sampling ports should be disinfected before access for medication administration and blood drawing. (C)
6. Central catheters should not be exchanged routinely over guide wires. (A)
7. The use of antimicrobial-impregnated catheters is recommended in high risk patients and high risk care settings. (B)
8. Low dose anticoagulant therapy should be used in patients requiring long-term catheterization. (B)
9. Specialized nursing teams should care for venous access devices in patients receiving PN. (B)

Monitoring for Efficacy

1. Nutrition and outcome goals should be stated in the nutrition assessment prior to the initiation of specialized nutrition support (SNS). (C)
2. Nutritional and outcome parameters should be measured serially during SNS therapy. (B)
3. Periodic comparison of nutritional and outcome measures with SNS goals should occur to monitor efficacy of therapy. (C)

Monitoring for Complications

1. Malnourished patients at risk for refeeding syndrome should have serum phosphorus, magnesium, potassium, and glucose levels monitored closely at initiation of SNS. (B)
2. In patients with diabetes or risk factors for glucose intolerance, SNS should be initiated with a low dextrose infusion rate and blood and urine glucose monitored closely. (C)
3. Blood glucose should be monitored frequently upon initiation of SNS, after any change in insulin dose, and until measurements are stable. (B)

4. Serum electrolytes (sodium, potassium, chloride, and bicarbonate) should be monitored frequently upon initiation of SNS until measurements are stable. (B)
5. Patients receiving intravenous fat emulsion should have serum triglyceride levels monitored until stable and when changes are made in the amount of fat administered. (C)
6. Liver function tests should be monitored periodically in patients receiving PN. (A)
7. Bone densitometry should be performed upon initiation of long-term SNS and periodically thereafter. (C)
8. Postpyloric placement of feeding tubes should be considered in patients at high risk for aspiration who are receiving EN. (C)

Definitions:

Rating Scheme

- A. There is good research-based evidence to support the guideline (prospective, randomized trials).
- B. There is fair research-based evidence to support the guideline (well-designed studies without randomization).
- C. The guideline is based on expert opinion and editorial consensus.

CLINICAL ALGORITHM(S)

Clinical algorithms of the Nutrition Care Process and Route of Administration of Specialized Nutrition Support are provided in the companion document: Nutrition care process. Section II: Nutrition Care Process. JPEN J Parenter Enteral Nutr 2002 Jan-Feb;26(1 Suppl): 7SA-8SA.

EVIDENCE SUPPORTING THE RECOMMENDATIONS

TYPE OF EVIDENCE SUPPORTING THE RECOMMENDATIONS

The type of evidence supporting the recommendations is not explicitly stated.

BENEFITS/HARMS OF IMPLEMENTING THE GUIDELINE RECOMMENDATIONS

POTENTIAL BENEFITS

- Enteral nutrition (EN) protocols allow standardized management of tube feedings and also help educate practitioners on the importance and monitoring of outcomes. Several studies have demonstrated that tube feeding delivery is improved with EN protocols.
- The nasogastric tube has low complication rates, is relatively inexpensive, and easy to place; it is indicated for short term use.

POTENTIAL HARMS

Considerable cost and serious complications are associated with specialized nutrition support.

QUALIFYING STATEMENTS

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These American Society for Parenteral and Enteral Nutrition (A.S.P.E.N.) Clinical Guidelines are general statements. They are based upon general conclusions of health professionals who, in developing such guidelines, have balanced potential benefits to be derived from a particular mode of medical therapy against certain risks inherent with such therapy. However, the professional judgment of the attending health professional is the primary component of quality medical care. The underlying judgment regarding the propriety of any specific procedure must be made by the attending health professional in light of all of the circumstances presented by the individual patient and the needs and resources particular to the locality. These guidelines are not a substitute for the exercise of such judgment by the health professional, but rather are a tool to be used by the health professional in the exercise of such judgment. These guidelines are voluntary and should not be deemed inclusive of all proper methods of care, or exclusive of methods of care reasonably directed toward obtaining the same results.

IMPLEMENTATION OF THE GUIDELINE

DESCRIPTION OF IMPLEMENTATION STRATEGY

An implementation strategy was not provided.

INSTITUTE OF MEDICINE (IOM) NATIONAL HEALTHCARE QUALITY REPORT CATEGORIES

IOM CARE NEED

Getting Better
Living with Illness

IOM DOMAIN

Effectiveness

IDENTIFYING INFORMATION AND AVAILABILITY

BIBLIOGRAPHIC SOURCE(S)

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ADAPTATION

Not applicable: The guideline was not adapted from another source.

DATE RELEASED

2002 Jan-Feb

GUIDELINE DEVELOPER(S)

American Society for Parenteral and Enteral Nutrition - Professional Association

SOURCE(S) OF FUNDING

Not stated

GUIDELINE COMMITTEE

Clinical Guidelines Task Force

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FINANCIAL DISCLOSURES/CONFLICTS OF INTEREST

Not stated

GUIDELINE STATUS

This is the current release of the guideline.

GUIDELINE AVAILABILITY

Electronic copies: Not available at this time.

Print copies: Available from the American Society for Parenteral and Enteral Nutrition (ASPEN), 8630 Fenton St, Suite 412, Silver Spring, MD 20910-3805; (800) 741-8972. For details, please see the [ASPEN Web site](#).

AVAILABILITY OF COMPANION DOCUMENTS

The following are available:

- Guidelines for the use of parenteral and enteral nutrition in adult and pediatric patients. JPEN J Parenter Enteral Nutr 2002 Jan-Feb;26(1 Suppl): 1SA-6SA.
- Nutrition care process. JPEN J Parenter Enteral Nutr 2002 Jan-Feb;26(1 Suppl): 7SA-8SA.

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PATIENT RESOURCES

None available

NGC STATUS

This summary was completed by ECRI on May 5, 2004.

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