Consider referral to Dietitian

Outpatient Management
PCP follow up within 72 hours
Consider referral to Dietitian, OT (if feeding), Speech Therapy (if swallowing) and Lactation (if breastfeeding)

Fail Outpatient Management?
Continue to manage as appropriate in the outpatient setting

Outside of scope: Individualized management

Pathologic/Organic condition requiring intervention ruled out?

Mild to Moderate malnutrition AND psychosocial assessment with no concerns?

Assess for discharge readiness

Inclusion/Exclusion Criteria

Inclusion criteria: children ≤ 24 months of age admitted to the hospital with malnutrition

Exclusion criteria: children > 24 months of age, children with a known medical disorder which can cause growth delay, previous inpatient admission for malnutrition

Malnutrition criteria (meet one or more):*
- Weight for length z score: ≤ -2 or lower
- Decrease in weight for length/height z score: decline of 2 z scores
- Decrease in weight for age across two major percentile lines and/or decline of 2 z scores
- Weight gain velocity: less than 50% of the norm for expected weight gain
- Inadequate nutrient intake: 26-50% estimated energy/protein need

HIGHER risk criteria*: Medical instability
- Moderate or severe malnutrition with concern for refeeding syndrome
- Moderate or severe dehydration
- Failed outpatient management
- Suspicion of abuse/neglect
- Concerns about parent – child interaction
- Risk for loss of follow-up

Discharge Criteria:
- Patient medically stable with appropriate fluid/caly intake and stable/improved weight
- Labs/imaging consults recommendations appropriate for outpatient management
- Caregiver interaction and care appropriate or concerns adequately addressed
- Caregiver demonstrates understanding of nutrition recommendations and growth expectations and understands discharge plan/education

Discharge Home: PCP follow up within 1-3 days with appointment scheduled prior to discharge

Admit
- Perform malnutrition specific Admission H & P (use Epic template; include IHELP social history)
- Order set: “EBIP Malnutrition Initial Assessment and Evaluation Order Set”
- Consult social work with full psychosocial assessment
- If concern for child abuse: non-accidental trauma workup, report to child protective services and Child Protection Team consult
- Consult Dietitian
- Consult OT with concerns related to feeding/oral motor skills, positioning, and self-feeding skills
- Consult Speech with concerns related to: swallowing and feeding (oral/pharyngeal/signs and symptoms of esophageal dysphagia) and parent education for safe swallow techniques
- Consult Lactation if breastfeeding
**Critical Points of Evidence***

**Evidence Supports**
- Providers should consider obtaining an upper GI or endoscopy in children admitted with malnutrition and vomiting. (3-7) – Weak recommendation, very low quality evidence

**Evidence Against**
- Providers should not obtain screening labs and imaging in children with malnutrition without specific indication identified on history and physical exam as it does not change the diagnosis or management in these patients. (3-7) – Strong recommendation, very low quality evidence

**Consensus Recommendations**
- A multidisciplinary team should be involved with all pediatric malnutrition admissions. Consult social work with full psychosocial assessment. If concern for child abuse: complete non-accidental trauma workup, report to child protective services, and consult Child Protection Team. Consult Dietitian. Consult OT with concerns related to: feeding/oral motor skills, positioning, and self-feeding skills. Consult Speech with concerns related to: swallowing and feeding (oral/pharyngeal/signs and symptoms of esophageal dysphagia) and parent education for safe swallow techniques. Consult Lactation if breastfeeding. –Consensus recommendation
- If a patient with malnutrition is at risk for refeeding syndrome refer to the Refeeding Syndrome Guideline. –Consensus recommendation

*NOTE: The references cited represent the entire body of evidence reviewed to make each recommendation.

**References**

Clinical Standards Preparation
This pathway was adapted from clinical standards at Nationwide Children's Hospital as part of the Pediatric Initiative for Clinical Standards (PICS) Collaborative. Development of this clinical standard supports the TCH Quality and Patient Safety Program initiative to promote clinical standards and outcomes that build a culture of quality and safety within the organization.

Malnutrition: Initial Assessment and Evaluation Content
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EBOC Team

No relevant financial or intellectual conflicts to report.

Development Process
This clinical standard was developed using the process outlined in the EBOC Manual. The literature appraisal documents the following steps:
1. Review Preparation
   - PICO questions established
   - Evidence search confirmed with content experts
2. Review of Existing External Guidelines
3. Literature Review of Relevant Evidence
   - Searched: PubMed, Cochrane Library
4. Critically Analyze the Evidence
   - 0 meta-analyses, 1 randomized controlled trial, and 4 nonrandomized studies, as applicable
5. Summarize the Evidence
   - Materials used in the development of the clinical standard, literature appraisal, and any order sets are maintained in a Failure to Thrive evidence-based review manual within EBOC.

Evaluating the Quality of the Evidence
Published clinical guidelines were evaluated for this review using the AGREE II criteria. The summary of these guidelines are included in the literature appraisal. AGREE II criteria evaluate Guideline Scope and Purpose, Stakeholder Involvement, Rigor of Development, Clarity and Presentation, Applicability, and Editorial Independence using a 4-point Likert scale. The higher the score, the more comprehensive the guideline.

This clinical standard specifically summarizes the evidence in support of or against specific interventions and identifies where evidence is lacking/conclusive. The following categories describe how research findings provide support for treatment interventions.
- “Evidence Supports” provides evidence to support an intervention
- “Evidence Against” provides evidence against an intervention.
- “Evidence Lacking/Inconclusive” indicates there is insufficient evidence to support or refute an intervention and no conclusion can be drawn from the evidence.

The GRADE criteria were utilized to evaluate the body of evidence used to make practice recommendations. The table below defines how the quality of the evidence is rated and how a strong versus weak recommendation is established. The literature appraisal reflects the critical points of evidence.

<table>
<thead>
<tr>
<th>Quality</th>
<th>Type of Evidence</th>
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<tbody>
<tr>
<td>High</td>
<td>Consistent evidence from well-performed RCTs or exceptionally strong evidence from unbiased observational studies</td>
</tr>
<tr>
<td>Moderate</td>
<td>Evidence from RCTs with important limitations (e.g., inconsistent results, methodological flaws, indirect evidence, or imprecise results) or unusually strong evidence from unbiased observational studies</td>
</tr>
<tr>
<td>Low</td>
<td>Evidence for at least 1 critical outcome from observational studies, RCTs with serious flaws or indirect evidence</td>
</tr>
<tr>
<td>Very Low</td>
<td>Evidence for at least 1 critical outcome from unystematic clinical observations or very indirect evidence</td>
</tr>
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</table>

Recommendations
Practice recommendations were directed by the existing evidence and consensus amongst the content experts. Patient and family preferences were included when possible. The Content Expert Team and EBOC team remain aware of the controversies in the diagnosis/management of failure to thrive in children. When evidence is lacking, options in care are provided in the clinical standard and the accompanying order sets (if applicable).

Approval Process
Clinical standards are reviewed and approved by hospital committees as deemed appropriate for its intended use. Clinical standards are reviewed as necessary within EBOC at Texas Children’s Hospital. Content Expert Teams are involved with every review and update.

Disclaimer
Practice recommendations are based upon the evidence available at the time the clinical standard was developed. Clinical standards (guidelines, summaries, or pathways) do not set out the standard of care and are not intended to be used to dictate a course of care. Each physician/practitioner must use his or her independent judgment in the management of any specific patient and is responsible, in consultation with the patient and/or the patient’s family, to make the ultimate judgment regarding care.

Version History
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<th>Date</th>
<th>Action</th>
<th>Comments</th>
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<tr>
<td>May 2018</td>
<td>First Iteration</td>
<td>Updated criteria to reflect z scores. Changed terminology from “failure to thrive” to “malnutrition”</td>
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<tr>
<td>Mar 2023</td>
<td>Reaffirmed with revisions</td>
<td></td>
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