**Faltering Growth v1.0: Direct admission and ED management**

**PHASE I (E.D.)**

**Inclusion Criteria**
- Age <1 year
- Meet criteria for faltering growth
  - Weight <2nd percentile
  - Weight for length < 10th percentile
  - Fall across 2 weight percentile lines

**Exclusion Criteria**
- Known medical diagnosis causing faltering growth (CF, VSD, etc)
- Ill appearing (hemodynamic instability, altered mental status, etc)
- Prior admission for faltering growth

**Contact for direct admission**
- Review of growth charts
- Review of prior interventions
- Review of testing/diagnostics to date

**Initial ED assessment**

**Meets criteria for admission**

**To Inpatient Phase**

**Severe malnutrition:**
- Weight/length z-score -3 or greater
- BMI for age z score -3 or greater
- Length z score -3 or greater
- Mid-upper arm circumference z score -3 or greater
- Weight gain velocity <25% of norm
- Inadequate intake (<25% of estimated caloric/protein needs)

**Admit Criteria**
- Concern for underlying disorder requiring urgent workup (i.e. CHF, inborn error of metabolism)
- Failure to respond to outpatient feeding plan
- Severe malnutrition
- Suspected abuse/neglect

Labs and imaging are not recommended during the initial evaluation

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For questions concerning this pathway, contact: FalteringGrowthPathway@seattlechildrens.org

Last Updated: December 2018
Next Expected Review: December 2023
Inpatient Admission

- Obtain a comprehensive history and physical including:
  - Pregnancy and birth history
  - Family and social history (including food/housing insecurity)
  - Feeding history (type of feeds, frequency, type of bottle/nipple used, feed preparation, environment during feeds)
  - Breastfeeding/pumping history
  - Concerning symptoms (increased WOB, stridor, abnormal stool, etc.)
  - Review of all outside records including past interventions and available growth charts

- Observed feedings

- Obtain consults within 24 hours from:
  - Nutrition
  - PT/OT
  - Lactation (if applicable)
  - Social work

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Measurements

- Input growth chart data from PCP into CIS if available

Document feeding behaviors and dynamics

- Was the caregiver focused on the infant during the feeding?
- Did the caregiver start the feed at based on hunger cues/time since last feed?
- Did the caregiver end the feed at based on satiety cues/volume taken?
- Did the caregiver establish an appropriate environment for the feed (minimal distractions, positioning, etc.)?
- Did the feeding seem enjoyable for the infant and caregiver with minimal stress or tension?

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  - Social work

Signs/symptoms of an underlying disorder?

- Yes
  - Additional Workup Indicated
    - Testing/consultation for diagnosis of suspected disorder
    - Develop feeding plan with nutrition and feeding therapists
    - NG placement if unable/unsafe to take full volumes PO

- No
  - No Additional Workup Indicated
    - Develop feeding plan with nutrition and feeding therapists
    - NG placement if unable/unsafe to take full volumes PO

Feeding plan successful?

- Yes
  - Discharge Teaching
    - Provide written detailed feeding plan to family and include in discharge summary
  - Discharge Criteria
    - Weight gain on current feeding plan
    - Additional workup completed
    - Teaching complete
    - Follow up arranged with planned twice weekly weight checks

- No
  - Broaden differential and pursue additional workup

Discharge Instructions

- Nutrition plan (mixing formula, etc.)
- PT/OT plan (positioning, bottle type, etc.)
- NG/pump teaching if applicable

Signs/symptoms of an underlying disorder?

- Yes
  - Additional Workup Indicated
  - If tube feeds are started, develop criteria for their discontinuation

- No
  - No Additional Workup Indicated
  - Consider admit M-Th during daytime hours if possible

Discharge Teaching

- Provide written detailed feeding plan to family and include in discharge summary

Discharge Criteria

- Weight gain on current feeding plan
- Additional workup completed
- Teaching complete
- Follow up arranged with planned twice weekly weight checks

Discharge Instructions

- Nutrition plan (mixing formula, etc.)
- PT/OT plan (positioning, bottle type, etc.)
- NG/pump teaching if applicable
Faltering Growth Approval & Citation

Approved by the CSW Faltering Growth team for December 7, 2018

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Please cite as:
Evidence Ratings

This pathway was developed through local consensus based on published evidence and expert opinion as part of Clinical Standard Work at Seattle Children’s. Pathway teams include representatives from Medical, Subspecialty, and/or Surgical Services, Nursing, Pharmacy, Clinical Effectiveness, and other services as appropriate.

When possible, we used the GRADE method of rating evidence quality. Evidence is first assessed as to whether it is from randomized trial or cohort studies. The rating is then adjusted in the following manner (from: Guyatt G et al. J Clin Epidemiol. 2011;4:383-94.):

- **Quality ratings are downgraded** if studies:
  - Have serious limitations
  - Have inconsistent results
  - If evidence does not directly address clinical questions
  - If estimates are imprecise OR
  - If it is felt that there is substantial publication bias

- **Quality ratings are upgraded** if it is felt that:
  - The effect size is large
  - If studies are designed in a way that confounding would likely underreport the magnitude of the effect OR
  - If a dose-response gradient is evident

Guideline – Recommendation is from a published guideline that used methodology deemed acceptable by the team.

Expert Opinion – Our expert opinion is based on available evidence that does not meet GRADE criteria (for example, case-control studies).

**Quality of Evidence:**
- 🌟🌟🌟🌟 High quality
- 🌟🌟🌟🌟🌟 Moderate quality
- 🌟🌟🌟 Low quality
- 🌟🌟🌟🌟 Very low quality

**Guideline**
**Expert Opinion**
Summary of Version Changes

- **Version 1.0 (12/7/2018):** Go live
Medical Disclaimer

Medicine is an ever-changing science. As new research and clinical experience broaden our knowledge, changes in treatment and drug therapy are required.

The authors have checked with sources believed to be reliable in their efforts to provide information that is complete and generally in accord with the standards accepted at the time of publication.

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