Faltering Growth v1.0: Direct admission and ED management

Approval & Citation | Summary of Version Changes | Explanation of Evidence Ratings

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

!

Labs and imaging are not recommended during the initial evaluation

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

Initial ED assessment

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

Meets criteria for admission

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)

To Inpatient Phase

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

Last Updated: December 2018
Next Expected Review: December 2023

Faltering Growth v1.0: Inpatient Management

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PHASE II (Inpatient)

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

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?

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

! **Consider admit M-Th during daytime hours if possible**

! **If tube feeds are started, develop criteria for their discontinuation**

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?

NO

Broaden differential and pursue additional workup

YES

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

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

Last Updated: December 2018
Next Expected Review: December 2023

Faltering Growth Approval & Citation

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

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Retrieval Website: http://www.seattlechildrens.org/pdf/faltering-growth-pathway.pdf

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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

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Summary of Version Changes

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

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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.

However, in view of the possibility of human error or changes in medical sciences, neither the authors nor Seattle Children's Healthcare System nor any other party who has been involved in the preparation or publication of this work warrants that the information contained herein is in every respect accurate or complete, and they are not responsible for any errors or omissions or for the results obtained from the use of such information.

Readers should confirm the information contained herein with other sources and are encouraged to consult with their health care provider before making any health care decision.

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Bibliography

Becker, P.; Carney, L.; Corkins, M.; et al. Consensus statement of the Academy of Nutrition and Diatetics/American Society for Parenteral and Enteral Nutrition: indicators recommended for the identification and documentation of pediatric malnutrition (undernutrition). Nutrition in Clinical Practice 2014, 30(1): 147-161.

Berwick, D.; Levy, J.; Kleinerman, R. Failure to thrive: diagnostic yield of hospitalization. Archives of Disease in Childhood 1982, 57, 347-351.

Ficicioglu, C.; an Haack, K. Failure to thrive: when to suspect inborn errors of metabolism. Pediatrics 2009, 124 (3): 972-979.

Larson-Nath, C.; St Clair, N.; Goday, P. Hospitalization for failure to thrive: a prospective descriptive report. Clinical Pediatrics 2018, 57(2):212-219.

National Institute for Health and Care Excellence. Faltering growth: recognition and management of faltering growth in children. National Institute for Health and Care Excellence (UK); 2017 Sep.

Thompson, R.; Bennett, W.; Finnell, M.; et al. Increased length of stay and costs associated with weekend admissions for failure to thrive. Pediatrics 2013, 131(3): e805-e810.

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