Children’s Hospital at Dartmouth: Inpatient Eating Disorder House Staff Protocol

Based on the Boston Children’s Hospital Clinical Practice Guidelines, Mass General Hospital for Children Nutritional Deficiency Protocol, Vermont Children’s Hospital Eating Disorder Guidelines, Newton Wellesley Hospital Guidelines and evidence based recommends from American Academy of Pediatrics.

This protocol has been written as a guideline and resource for the inpatient house staff.

Outline:

1) Background Information
2) Diagnostic Criteria based on DSM-V
3) Medical Complications of ED
4) Indications for In-patient Admission
5) Admission Check List –H&P, Labs, Medications, Consults
6) Daily Monitoring
7) Nutrition protocol
8) Privileges
9) Visitors
10)Discharge Criteria

Background Information:

The incidence and prevalence of eating disorders in the pediatric and adolescent population has increased. They affect both males and females and are becoming more prevalent in the younger adolescent ages (<12 yrs). Eating disorders are associated with serious and irreversible complications which require timely intervention to prevent negative outcomes. They most commonly occur in females age 15-19 yrs. The lifetime prevalence of AN is 0.3-0.6% in females and 1-2% for BN (Update on Medical Management of ED, JAH 2015. Katzman). Anorexia nervosa is the 3rd most common chronic disease of female adolescents (Schwartz, et al. JAH. 2008). These are fatal diseases and have a high rate of recurrence if not diagnosed and treated early. The American Psychiatric Association’s Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition (DSM V) have outlined strict criteria for classic eating disorders including Anorexia Nervosa (AN), Bulimia Nervosa (BN), Avoidant Restrictive Food Intake Disorder (ARFID) and Binge Eating Disorder (BED). Below outlines three common eating disorders leading to inpatient admissions.
DSM V Diagnostic Criteria:

Anorexia Nervosa:
- Persistent restriction of energy intake leading to significantly low body weight (in context of what is minimally expected for age, sex, developmental trajectory, and physical health).
- Either an intense fear of gaining weight or of becoming fat, OR persistent behaviour that interferes with weight gain (even though significantly low weight).
- Disturbance in the way one's body weight or shape is experienced, undue influence of body shape and weight on self-evaluation, or persistent lack of recognition of the seriousness of the current low body weight.

Subtypes:
Restricting type
Binge-eating/purging type

Severity:
Mild ~ BMI >/= 17
Moderate ~ BMI 16-17
Severe ~ BMI 15-16
Extreme ~ BMI < 15

Bulimia Nervosa:
- Recurrent episodes of binge eating. An episode of binge eating is characterised by both of the following:
  o Eating, in a discrete period of time (e.g. within any 2-hour period), an amount of food that is definitely larger than most people would eat during a similar period of time and under similar circumstances.
  o A sense of lack of control over eating during the episode (e.g. a feeling that one cannot stop eating or control what or how much one is eating).
- Recurrent inappropriate compensatory behaviour in order to prevent weight gain, such as self-induced vomiting, misuse of laxatives, diuretics, or other medications, fasting, or excessive exercise.
- The binge eating and inappropriate compensatory behaviours both occur, on average, at least once a week for three months.
- Self-evaluation is unduly influenced by body shape and weight.
- The disturbance does not occur exclusively during episodes of Anorexia Nervosa.

Severity:
Mild: 1-3 purging episodes/month
Moderate: 4-7 purging episodes/month
Severe: 8-13 purging episodes/month
Extreme: > 14 purging episodes/month
Avoidant/Restrictive Food Intake Disorder (ARFID)

- An Eating or Feeding disturbance as manifested by persistent failure to meet appropriate nutritional and/or energy needs associated with one (or more) of the following:
  1. Significant loss of weight (or failure to achieve expected weight gain or faltering growth in children).
  2. Significant nutritional deficiency
  3. Dependence on enteral feeding or oral nutritional supplements
  4. Marked interference with psychosocial functioning
- The behavior is not better explained by lack of available food or by an associated culturally sanctioned practice.
- The behavior does not occur exclusively during the course of anorexia nervosa or bulimia nervosa, and there is no evidence of a disturbance in the way one’s body weight or shape is experienced.
- The eating disturbance is not attributed to a medical condition, or better explained by another mental health disorder. When it does occur in the presence of another condition/disorder, the behavior exceeds what is usually associated, and warrants additional clinical attention.

Medical Complications from Eating Disorders:

General
- Fatigue
- Dehydration

Neurologic/Psych
- Cognitive deficits/slowing
- Cortical Atrophy
- Mood symptoms
- Suicide

HEENT
- Dental carries (BN)
- Parotid enlargement (BN)

Cardiovascular
- Bradycardia
- Arrhythmias
- Long QT syndrome
- AV block
- Poor perfusion
• Cardiomyopathy
• Pericardial effusion
• MVP
• Syncope
• Edema

GI/Renal
• Esophagitis (BN)
• Mallory Weiss tear (BN)
• GERD
• Delayed gastric emptying
• Post prandial fullness; Bloating
• Constipation
• Hypoglycemia
• Hypercholesterolemia
• Abnormal LFTs
• Electrolyte – hypochloremic metabolic alkalosis (vomiting), hyperchloremic metabolic acidosis (laxative abuse), hypocalcemia (laxative), hypomagnesemia, hyponatremia

Endocrine
• Sick euthyroid syndrome
• Growth retardation, pubertal delay
• Hair thinning
• Low bone mineral density, osteoporosis
• Secondary amenorrhea
• Elevated cortisol

Hematologic
• Anemia
• Leukopenia
• Thrombocytopenia

Dermatologic
• Lanugo hair
• Dry scaly skin
• Yellow discoloration
• Acrocyanosis
• Angular stomatitis
• Nail changes
Goals of Inpatient Management

Goal:
- Medical stabilization
- Identify psychiatric co-morbidities
- Nutritional rehabilitation
- Arrange for outpatient comprehensive multidisciplinary services at discharge

Note: The objective is not to cure the patient. It is to provide nutritional rehabilitation and medical stabilization while supporting a safe discharge. Please apply the protocol to the individual patient needs.

A standard protocol has been developed which patients and their families must review and sign before initiating therapy. The purpose of the protocol is to provide clear expectations for both the providers and patient/family members and to ensure there is no miscommunication during the hospitalization.

Indications for inpatient admission (*JAH. Golden, NH. Et al. 2014)

- < 75% BMI for age and sex OR ongoing weight loss despite intensive management
- Dehydration
- Refusal to eat
- Electrolyte disturbance (hypokalemia, hyponatremia, hypophosphatemia)
- EKG abnormalities (Long QT, severe bradycardia)
- Physiologic instability:
  - Severe bradycardia: Heart rate < 50 bpm in daytime; < 45 bpm at nighttime
  - Hypotension: < 90/45 mm Hg
  - Hypothermia: T< 96 F
  - Orthostatic increase in pulse (> 20 bpm) or decrease in BP (>20 mm Hg systolic or > 10 mm Hg diastolic)
- Arrested growth and development
- Uncontrollable bingeing and purging
- Acute medical complications of malnutrition (syncope, seizures, cardiac failure, pancreatitis, esophageal tear, hematemesis)
- Suicidal Risk
- Failure to respond outpatient therapy
House Officer Admission Check List

- H&P
- Labs/Orders
- Consults
- Discharge Prep
Admission H&P Sample Template

Patient Name:
DOB:

PCP:
Therapist:
Nutritionist:

CC:

HPI:

Weight history
- Date of onset of weight loss
- Current weight
- Intentional vs Unintentional
- Fear of gaining weight? Recognition of low weight
- Weight loss strategies (i.e. exercise, diet pills, purging)
- Body image perception

Diet
- 24 hour diet recall
- Specific restrictions – types of food, amount of food

Exercise
- Type, Duration, Frequency

Menstrual History
- Age of Menarche
- LMP
- Duration of menses
- Cycle length
- OCP

ROS
(Screen for IBD, Hypothalamic-Pituitary Tumors, TB/HIV, Hodgkin’s/Leukemia)
- Fatigue
- Headaches
- Weakness
- Dizziness
- Dental Caries
- Nausea
- Dysphagia
- Abdominal Pain
- Bloating
- Diarrhea
- Constipation
- Bloody stool
- Hair changes
- Dry Skin
- Cold intolerance
- Purging
- Bingeing
- Diet pills
- Laxatives

**PMH:**
- Fractures?
- Previous ED evaluations
- Psychiatric Hx
  - Screen for Depression, Anxiety, Suicidality

**Medications** (including OTC/herbal/alternative)

**Allergies**

**Immunizations**

**Developmental History:**

**Family History:**
- Eating disorders
- Mental illness
- Obesity
- Other - ? IBD

**Social History:**
- Home
- School
- Stressors
- Sexual Activity
- Substance Use
Physical Exam

Current Vital Signs:
T: ___ HR: _____ BP: ______ RR: _____ SpO2: _____
Orthostatics: Supine BP ____ HR ____ Standing BP ____ HR ____
Wt (kg): _____ (%) 
Ht (cm): _____ (%) 
*median BW (kg): _____ (%) 

General:

HEENT:
Dental:
Thyroid:
Cardiac:
Resp:
Abdo:
GU (Tanner Stage):
Ext:
MSK:
Neuro:
Psych:

* Calculate % Median Body Weight
Plot current height and weight – growth chart will calculate current BMI
Identify the 50th% BMI for patient age and sex = median/ideal BMI
100 x Actual BMI + Median BMI = % Median/Ideal BW
Avoid the term “ideal body weight”
**Admission Labs**

- CBC
- CPM – Severe electrolyte disturbances may require transfer to the ICU
- UA
- Urine HCG
- EKG 12 Lead – Discuss with Cardiology. Consider transfer to PICU for severe bradycardia, abnormal rhythms (Long QTc, ventricular triplets, AV block)
- TSH (if not done in past month)
- CRP, ESR
- Celiac screen (TTG IgA, Total IgA) if not done in past month
- Ferritin
- 25-OH D
- Lipids
- + Amenorrhea: Prolactin, LH, FSH, Estradiol, TFTs
- Male: Testosterone, LH/FSH, Prolactin
- Consider DEXA scan
- Consider based on history: Amylase, Lipase, PPD, HIV, Hemoccult stool, AM Cortisol
- If high risk of refeeding syndrome order daily BMP, Mg, Phos, Calcium x 5 days

**Admission Consults:**

- Adolescent Medicine (Dr. Loud)
- Child Psychiatry
- Nutrition
- Social Work- clarify insurance status and options for transfer to residential/inpatient facility on admission
- Child Life
- Contact outpatient team if already established care
- Cardiology is screening EKG abnormal
- GI – if high risk of refeeding syndrome

**Medications:**

- Daily multivitamin with iron and zinc
- Calcium, Vit D
- Consider daily neutraphos (unless phos > 4.5 on admission)
- Consider IVF pending level of dehydration
- Colace PRN (constipation) only if patient is fulfilling nutritional requirements
Monitoring:

Vital Signs:
- Daily height and post void weights (obtain a blind weight after first morning void. Underwear only).
- Obtain daily first morning voids to monitor specific gravity. If AM spec grav < 1005 suspicious for water loading. Consider repeating urine dip and re-weighing the patient. Also monitor the volume of the AM void. If volume is low, have patient void again (holding urine will falsely elevate weight)
- Q 4hrly vitals – BP, HR, RR, Temp
- Q4 I/O – monitor stooling pattern. Gastric dysmotility and constipation are common and should slowly resolve with increased nutrition.
- Q AM Orthostatics until stable – patient must lie down for 5 minutes, measure BP and pulse. Patient stands for 2 minutes then repeat BP and pulse.

Activity:
- Bed rest first 24 hours. Discontinue after 24 hrs if vitals are stable (HR> 50 awake, no orthostatic changes, BP > 90/50, T > 97 F/36 C). If orthostatic use bedside commode, otherwise bathroom privileges are granted
- Room rest (sitting in chair/bed) until vital signs stabilize. No standing unless going to the bathroom. If vital signs stable, gradual increase to wheel chair rides or 10 min walks on floor. If patient exercises in room/bed privileges may be revoked
- Seated shower if orthostatic and during initial 24 hr period. If vitals stable, patients may take a shower for 5 minutes
- No waste baskets in room
- If history of purging, bathrooms locked for 2 hours after meals and bed rest is mandatory for 2 hours after meals
- Bedrest for 1 hour after meals and 30 minutes after snacks

Meal Plan/Nutrition ** Review with Catherine Giguere-Rich and Marcia Herrin
- Per Nutrition recommendations**: 1750-2000 kcal/day (~severity of malnourishment), slow daily increase to prevent refeeding syndrome. Increase caloric intake 250 cal/day
- Weight expectation 0.2 kg/day
- Contact PCP to calculate predicted height and goal weight
- Meals must be eaten in 30 minutes and snacks in 15 minutes. If 100% of meal/snack is not eaten including sauces/drinks, give patient Ensure (equal to the number of calories not consumed) with a 20 minute period to drink it
- Refusal of meal = 2 Ensure cans
- If patient does not drink Ensure consider NGT placement (discuss with Hospitalist Attending)
- If patient requests more food discuss with Hospitalist and Nutritionist
• Bedrest (as outlined above) after meals/snacks
• No outside food
• Discuss fluid goal with nutritionist
• **1:1 sitter/observer during and after meal/snack time. If patient’s weight increases and is compliant with meals consider unsupervised meals
• No phone/visitors during and after meal time. Okay to watch TV
• Lactose free diet respected if proven
• Religious diets respected
• No light or diet foods allowed
• Vegetarian diets?*** - discuss with nutritionist
• No chewing gum/mints/caffeine

Visitors:
• No visitors or family members during meal/snack time
• One parent can stay overnight
• Limit time to 4 hours during the day

Privileges:
• Resident should establish a privilege list. Privileges are granted if the patient is compliant with daily routine. They may be revoked if the patient does not follow the nutritional/medical protocol (i.e., complete all meals PO, no exercising/purging). The patient and family will be required to sign the protocol before instituting the treatment plan.
• Examples of privileges:
  o Unsupervised meals pending weight increase
  o D/C bedrest to allow for 10 minute walks or wheelchair ride off unit
  o Increase visitor time

House Staff Daily Rounding Checklist:

☐ AM Post void weight – Calculate change from previous day. Take into if the patient received IVF
☐ Morning POC UA – spec grav
☐ Morning Orthostatics
☐ Overnight minimum HR
☐ Daily increase in meal plan by 250 kcal until at goal
☐ Consider team meeting – will need within 48 hr of admission
☐ Discharge preparation
☐ Avoiding giving actual numbers to patients about their weight. You can say if they met their goal but do not disclose the true weight. Avoid the term “ideal body weight” instead use “median body weight”
Discharge Criteria and Materials:

Criteria for Discharge*

- Heart Rate > 50 bpm awake
- HR > 40 bpm asleep
- SBP > 90 mm Hg
- Temp > 96 F
- Resolution of arrhythmia
- Resolution of electrolyte abnormalities
- Resolution of hematemesis/esophageal tears
- Resolution of vomiting
- No suicidal ideation
- Meal eaten with parent/guardian

*Strandjord, et al. Eating and weight disorders- studies on anorexia, bulimia and obesity. 2015

Steps for discharge

- Outpatient team contacted and follow up arranged
- School notified
- Vital sign stabilization and/or improvement from admission (see above)
- Caloric goal met and meal eaten with guardian
- Information pack given (**Katie Shea, Psychiatry working on this)
- Parent/Patient Resources book reviewed