INPATIENT GUIDE FOR THE MANAGEMENT OF ADOLESCENTS WITH FEEDING AND EATING DISORDERS

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The following Clinical Care Guide (CCG) is intended for the use of physicians and other health care professionals at the Alberta Children's Hospital. This CCG was originally developed by the Section of Adolescent Medicine in conjunction with other disciplines to provide information for consideration in guiding patient management. The recommendations in this CCG do not indicate an exclusive course of treatment to be followed. Variations considering individual circumstances may be appropriate. All CCGs are reviewed, revised, or retired (as needed) on a regular basis. While every attempt is made to ensure the guide is "up to date," users should be aware that new evidence for optimal patient management may arise in the interim. Users of CCGs are encouraged to confirm information within this guide and to continue to review the latest medical evidence for the condition presented.

The objectives of this guide are:
- To emphasize the assessment of the degree of malnutrition.
- To inform the practitioner of current evidence surrounding the management of feeding and eating disorders based on the degree of malnutrition, with an emphasis on approaches to nutritional rehabilitation in the inpatient setting to avoid BOTH the medical complications from refeeding syndrome and underfeeding.

This guide reflects local practice in managing this spectrum of illness to provide practitioners with comfort with this patient population and to provide patients with care that is consistent with the research evidence and best practices across Canada.

Please note that the term ideal body weight (IBW) used in previous CCGs has been replaced with treatment goal weight (TGW) or range reflecting change in best terminology and practice. TGW is the "weight necessary to support puberty, growth and development, physical activity and psychological and social functioning" (Norris, 2018).

Target Population:

Inclusion: This CCG is intended for primary use in pediatric patients, aged 12-18 years old, presenting with a restrictive feeding and eating disorder resulting in significant malnutrition and requiring inpatient medical care.
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Exclusion: Consideration must be given in age groups outside those noted above for either a more fitting primary diagnosis, or for the need to tailor medical decisions in accordance with the age of the patient. Consideration should also be given to patients with an eating disorder that primarily involves bingeing and/or purging behaviours as the recommendations within this CCG may need to be modified.

This document is a guide only and does not replace case-by-case clinical judgement. Given that eating disorders are complex psychiatric illnesses that may intersect with other medical and psychiatric diagnoses, it is not possible for this guide to capture all the possible presentations and management of eating disorders. As such deviation from this guide may be recommended in consultation with Adolescent Medicine in order to provide best patient-centered care.

Target Users:
- Hospital Pediatricians
- Adolescent Medicine specialists
- Community Pediatricians and Emergency Room physicians making decisions regarding patient disposition
- House staff (residents and clinical clerks) on General Pediatrics rotations

Key Areas of Controversy:
- Calorie initiation and advancement
- Duration of hospitalization
- Weight attainment goals prior to discharge
- Extent and duration of monitoring, including electrolyte checks, serial EKGs, and bedside cardiorespiratory monitoring
- Micronutrient supplementation e.g. thiamine, zinc
- Approach to treatment of ARFID

INTRODUCTION

The term “feeding and eating disorder” encompasses a variety of diagnoses. The Diagnostic and Statistical Manual of Mental Disorders, fifth edition (DSM 5) was published in 2013 with several modifications to the diagnostic categories of feeding and eating disorders with the intention to improve the way in which we understand, diagnose, and provide treatment for eating disorders across the life span (APA, 2013). The current classification includes Anorexia Nervosa (AN), Bulimia Nervosa (BN), Binge Eating Disorder (BED), and the newly included Avoidant Restrictive Food Intake Disorder (ARFID). The broad category that encompasses other feeding and eating disorder presentations that do not meet for full criteria for AN, BN, BED, or ARFID is the category of Other Specified Feeding or Disorders (OSFED). Examples of OSFED include but are not limited to Atypical Anorexia Nervosa (AAN) and Purging Disorder. Eating Disorder Not Otherwise Specified (EDNOS) is no longer a diagnostic category in DSM 5.
Important changes to the diagnostic criteria of AN to be aware of include the removal of:

- a numeric cut off to define low weight
- the amenorrhea criterion. In addition, the criteria for fear of weight gain and body image disturbance are more inclusive and can now be met if there is evidence of behaviours that interfere with weight gain or demonstrate body image disturbance even if the patient is not able to articulate these cognitive symptoms (APA, 2013; Golden et al. 2015).

Feeding and eating disorders are complex biopsychosocial disorders with an age of onset often in the adolescent years (Society of Adolescent Health and Medicine (SAHM), 2015). The physical health implications are vast and significant. In particular, AN has the highest mortality rate of any psychiatric illness with death most often secondary to medical complications or suicide (Lock, 2015; Arcelus, 2011). According to the most recently updated practice parameter from the American Academy of Child and Adolescent Psychiatry (Lock, 2015), the prevalence of AN and BN is between 1% and 2% of the female adolescent U.S. population. The prevalence in adolescent males is less well known but estimated to be one male case per every 10 female cases but this may be an underestimation. The epidemiology of the new diagnostic category of ARFID is being studied.

**REFEEDING SYNDROME**

Individuals with feeding and eating disorders are at risk of refeeding syndrome. The term ‘refeeding syndrome’ can be defined as the consequence of severe fluid and electrolyte shifts in malnourished patients when they are re-nourished (oral, enteral, or parenteral route) as a result of increased carbohydrate metabolism. The biochemical derangements usually occur in the first 3-4 days of initiating nutritional support but can still occur in the second week of admission to hospital (Mehanna et al., BMJ, 2008).

The hallmark biochemical feature of refeeding syndrome is hypophosphatemia. In starvation the secretion of insulin is decreased in response to a reduced intake of carbohydrates. Instead fat and protein stores are catabolized to produce energy. This results in an intracellular loss of electrolytes including phosphate. Intracellular phosphate stores can be depleted despite normal serum phosphate concentrations. When patients start to be nutritionally rehabilitated, a sudden shift from fat to carbohydrate metabolism occurs and secretion of insulin increases. This stimulates cellular uptake of phosphate, which can lead to profound hypophosphatemia. Intracellular uptake of glucose, thiamine, potassium and magnesium also occurs which can lead to hypoglycemia, thiamine deficiency, hypokalemia, hypomagnesaemia and salt and water retention (Stanga et al., 2008; SAHM, 2014).

Serum phosphate concentrations of less than 0.50 mmol/l (normal range 1-1.9 mmol/l) can produce the clinical features of refeeding syndrome, which include rhabdomyolysis, leucocyte dysfunction, respiratory failure, cardiac failure, hypotension, arrhythmias, seizures, coma, and sudden death. The clinical features of refeeding syndrome occur primarily because of deficiencies in phosphate, magnesium, and potassium, as these are critical to the normal functioning of nerve, cardiac and skeletal muscle cells (Cheung & Johnston, 2009; Solomon & Kirby, 1990; Crook et al, 2001 and 2014). **Refeeding syndrome should be suspected** if there is a decrease from baseline within 5 days of nutritional rehabilitation in any 1, 2, or 3 of serum phosphorus, potassium, and/or magnesium levels by:

- 10-20% (mild)
- 20-30% (moderate)
>30% (severe)

And/or organ dysfunction resulting from a decrease in any of these and/or due to thiamine deficiency (severe refeeding syndrome) (ASPEN, 2020).

Malnourished patients can also become deficient in thiamine, an important cofactor for carbohydrate metabolism. Body thiamine stores can be depleted in 2-3 weeks in a thiamine deficient diet. Furthermore, malnutrition can further exacerbate the problem as absorption from the gastrointestinal tract of thiamine becomes impaired (Peters, 2007). Wernicke's encephalopathy (WE) and lactic acidosis develop if patients who are deficient in thiamine are refed carbohydrates without prior adequate thiamine replacement due to exacerbation of thiamine deficiency from intracellular shifts during nutritional rehabilitation.

WE can present as the clinical triad of mental status changes (e.g. confusion, somnolence, stupor, coma), ocular signs (e.g. ophthalmoplegia, nystagmus, ptosis), and ataxia. However, WE is thought to be underdiagnosed in pediatrics as children and adolescents may not present with the full clinical triad (Vasconcelos, 1998). In adults with AN, thiamine deficiency has been reported in 38% of individuals and often unrecognized (Winston, 2000). In pediatrics, the literature on WE in patients with AN is mostly limited to case reports with the first case report being published in 2007 (Peters, 2007; Altinayazur, 2010; Renthal, 2014). Case reports vary in terms of management. In one report, one dose of 100 mg IV thiamine and then 50 mg orally daily followed by four additional doses of 100 mg IV daily 20 days later resulted in full resolution of ataxia and nystagmus and marked improvement in confusion (Peters, 2007). A subsequent case report, 250 mg IV thiamine per day was used to improve nystagmus, ataxia and visual and auditory hallucinations but then required increases to 500 mg/day and then to 750 mg/day in order to improve symptoms of confusion and acute psychosis (Altinayazur, 2010). The authors recommended treating empirically with a minimum of 500 mg IV thiamine which is higher than conventional doses. A case report from 2014 only mentioned that IV thiamine was given but no other specific details (Renthal, 2014). A recent prospective cohort study detected thiamine deficiency in 6% adolescents with eating disorders and corrected after 2 weeks of nutritional rehabilitation that included a multivitamin containing 1.5 mg of thiamine however these were patients treated in an outpatient day hospital with a mean percent of ideal body weight of 92.2 and therefore not reflective of the severity of illness in adolescents admitted to a medical unit for stabilization (Bahat, 2020). A systematic review of WE in anorexia nervosa in adults and adolescents suggests that IV thiamine should be given 500 mg three times daily until acute symptoms of WE resolve however, symptoms may improve at lower doses of 100 to 200 mg IV in non-alcohol related cases (Oudman, 2018; EFNS guidelines 2010). In non-eating disorder literature, a case report of a 13 year old with malnutrition secondary to neuroblastoma noted that 100 mg IV daily was insufficient and symptoms of resolution of WE did not occur until 500 mg IV tid of thiamine was given suggesting that higher doses may be necessary in malnutrition in the adolescent population (So Won Park, 2014). Because of the paucity of literature in pediatrics for the treatment of WE, specific dose recommendations are difficult however; adult dosing of 500 mg IV tid may be useful in treating adolescents, especially those approaching adult weights (Lallas, 2014).
**PRINCIPLES OF NUTRITIONAL REHABILITATION**

Malnutrition/undernutrition is a complex disease that can manifest at a variety of weights and body sizes. The medical evaluation is the same regardless of weight which includes a complete history, physical examination and investigations when indicated. Physical and mental health complications of malnutrition from eating disorders and/or bingeing and compensatory behaviours (e.g. self-induced vomiting, laxative abuse, diuretic abuse, diet pill use, excessive exercise, fasting, and insulin misuse) include:

<table>
<thead>
<tr>
<th>Cardiorespiratory</th>
<th>Neuropsychiatric</th>
<th>Renal and Endocrine/Metabolic</th>
<th>Gastrointestinal</th>
<th>Hematological</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bradycardia</td>
<td>Cerebral atrophy</td>
<td>Refeeding syndrome</td>
<td>Acute GI bleeding (e.g. Mallory-Weiss tear)</td>
<td>Hemolysis</td>
</tr>
<tr>
<td>Hypotension</td>
<td>Seizure</td>
<td>Electrolyte disturbances e.g. hypokalemia, hypophosphatemia</td>
<td>Esophageal or gastric rupture</td>
<td>Anemia</td>
</tr>
<tr>
<td>Syncope</td>
<td>Ataxia</td>
<td>Dehydration</td>
<td>Esophagitis/gastritis</td>
<td>Neutropenia</td>
</tr>
<tr>
<td>Second/third degree heart block</td>
<td>Confusion/delirium</td>
<td>Rhabdomyolysis</td>
<td>Gastric outlet obstruction</td>
<td>Thrombocytopenia</td>
</tr>
<tr>
<td>Ventricular arrhythmias</td>
<td>Wernicke’s encephalopathy (rare)</td>
<td>Hypoglycemia</td>
<td>Superior mesenteric artery syndrome</td>
<td>Coagulopathy</td>
</tr>
<tr>
<td>Prolongation QTc</td>
<td>Peripheral neuropathy</td>
<td>Acute kidney injury</td>
<td>Pancreatitis</td>
<td></td>
</tr>
<tr>
<td>Congestive heart failure</td>
<td>Acute psychosis</td>
<td>Pseudo barter syndrome</td>
<td>Severe constipation</td>
<td></td>
</tr>
<tr>
<td>Cardiac arrest</td>
<td>Mood changes/emotional dysregulation/anxiety</td>
<td>Renal calculi</td>
<td>Delayed gastric emptying</td>
<td></td>
</tr>
<tr>
<td>Pericardial effusion</td>
<td>Suicidality</td>
<td>Euthyroid sick syndrome</td>
<td>Paralytic ileus</td>
<td></td>
</tr>
<tr>
<td>Mitral valve prolapse</td>
<td></td>
<td>Amenorrhea</td>
<td>Cathartic colon</td>
<td></td>
</tr>
<tr>
<td>Acute respiratory failure</td>
<td></td>
<td>Hypercortisolism</td>
<td>Rectal prolapse</td>
<td></td>
</tr>
<tr>
<td>Pneumomediastinum</td>
<td></td>
<td>Pubertal delay</td>
<td>Liver dysfunction/ hepatitis</td>
<td></td>
</tr>
<tr>
<td>Aspiration pneumonitis</td>
<td></td>
<td>Growth delay/arrest</td>
<td>Gallstones</td>
<td></td>
</tr>
</tbody>
</table>

**Note:** this is not an exhaustive list of potential medical/surgical complications but is representative of the most common and/or severe complications.

In patients with restrictive eating disorders, starvation leading to a state of being malnourished increases the risk of vital sign instability and physical complications. However, there is evidence to suggest that the total amount of weight loss (an indication of chronic adaptation to starvation) and/or recent weight loss (an indication of acute adaptation to starvation) are also important contributing factors to the physical manifestations and complications seen in patients with eating disorders rather than being underweight on its
own (Peebles, R. et al., 2010; Whitelaw M. et al., 2014; Sawyer SM et al., 2016; Garber, 2018; Whitelaw et al., 2018). This is especially important when assessing a patient that has gone from living at a higher weight state and has lost a significant amount of weight. Despite significant weight loss, these patients can often present at a “normal weight” but can still be very medically compromised and malnourished.

In mild to moderately malnourished patients, there is evidence that a more aggressive refeeding schedule can be adopted (Sylvester, 2008; Whitelaw et al., 2010 and 2014; O-Connor and Nicholls, 2013; Garber, 2020). Starting caloric intakes of \(<1200\) kcal/day should be avoided as this may lead to underfeeding, worsening of malnutrition, weight loss, and prolongation of inpatient admission (Junior MARSIPAN, 2012; MARSIPAN, 2014). Using hypocaloric diets with a “start low, go slow” approach to avoid refeeding syndrome is no longer considered the gold standard approach to nutritional rehabilitation in cases of mild to moderate malnutrition from restrictive eating disorders. Starting nutritional rehabilitation at 1200 calories/day or less leads to further weight loss in the first week in most adolescents and without weight gain until after the first week of hospitalization which may cause complications from prolonged vital sign instability, further loss of muscle mass and potentially worsen bone health outcomes (Kohn, 2011). Starting low and advancing slow can thus result in prolonged hospitalization and delayed nutritional rehabilitation (Kohn, 2011; Katzman, 2012; Garber, 2012, 2013, 2018, 2020; SAHM 2014 and 2015).

**MEDICAL ASSESSMENT AND ADMISSION CRITERIA**

Criteria for admission to hospital to a medical unit for stabilization (one or more of the following are present):
- Vital sign instability
- Moderate to severe malnutrition
- Fluid and/or electrolyte disturbance
- Cardiac complications
- Significant risk of refeeding syndrome or other severe physical complications
- To interrupt the binge/purge cycle
- Acute medical/surgical complications of malnutrition and/or bingeing/purging behaviours
- Comorbid medical condition that might become life-threatening in the presence of malnutrition
- Acute psychiatric emergency

**Rationale for Admission Criteria:**

**Vital Sign Instability:**
- HR: <45 beats per minute
  - Note: Children aged 6-11 years normally have higher resting heart rates than adolescents so consideration of admission for less severe bradycardia (i.e. HR <50) could be considered if the overall presentation is concerning.
  - Bradycardia is a physiologic, adaptive response to starvation and is the most common arrhythmia in patients with eating disorders. Bradycardia should not be automatically attributed to athleticism or training in patients who are underweight, who have experienced rapid weight loss, or who have inadequate nutritional intake for their level of activity (AED, 2016)
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- BP: <80/45 mm Hg
  - Note: Use SBP <70 + 2x age in children 6-9 years old

- Orthostatic changes:
  - Heart rate change of >35 beats per minute.
    - Note: consider the whole clinical picture; this change alone in the absence of symptoms and/or other vital sign instability is commonly followed as an outpatient.
  - Postural drop in systolic blood pressure >20 mm Hg or >10 mm Hg diastolic.
  - May also need admission if highly symptomatic and/or associated with syncope.

- Temperature: any temperature equivalent to an oral body temperature <35.6 degrees Celsius if coupled with above findings

CAUTION WITH IV FLUID BOLUSES: It is important to keep in mind that eating disorder patients are in a state of malnutrition and may also be chronically dehydrated leading to a secondary hyperaldosteronism state; therefore oral rehydration is the preferred route of giving fluids to correct deficits slowly; IV fluids should be avoided if possible and if given, judicious use of IV fluids is recommended to avoid rapid fluid and electrolyte shifts that can lead to fluid overload/edema and/or rarely cardiac failure or acute hypertensive crisis. Consider establishing IV access if there are concerns that patient is at risk for clinical deterioration. Refer to Fluid Section below.

Degree of Malnutrition/Undernutrition:
Assessing degree of malnutrition at point of care is important as this will guide clinical decision making with respect to determining risk of refeeding syndrome and other medical complications, including the rare risk of Wernicke’s encephalopathy. Starting caloric intake and fluid management is ultimately guided by this assessment. There are different ways in which degree of malnutrition/undernutrition can be assessed in the context of weight loss from a restrictive eating disorder. Severe rapid and/or significant loss of body weight appears to be a better predictor of physical complications than admission weight (Whitelaw, 2018).

Consider admission if one or more of the following is present:
- ≤ 75% median BMI (mBMI) (Note: mBMI = 50th percentile; %mBMI=current BMI/mBMI x 100)
- Severe rapid and/or significant loss of body weight (please refer to Table 1 and Table 2)
- BMI z-score < negative 3
- BMI < 15
- BMI < 3rd percentile
- Acute weight decline with food refusal
- Weight loss or failure to gain weight associated with arrested growth and development. (Note: children or adolescents who have fallen off their normal height trajectory and require catch-up growth can have falsely reassuring weights/BMIs)
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Table 1:

<table>
<thead>
<tr>
<th>Malnutrition</th>
<th>%mBMI</th>
<th>% weight loss*</th>
<th>BMI z-score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mild</td>
<td>80-90%</td>
<td>&gt;10%</td>
<td>-1 to -1.9</td>
</tr>
<tr>
<td>&gt;Moderate</td>
<td>70-79%</td>
<td>&gt;15%</td>
<td>-2 to -2.9</td>
</tr>
<tr>
<td>Severe</td>
<td>&lt;70%</td>
<td>&gt;20%</td>
<td>&lt;-3</td>
</tr>
</tbody>
</table>

Example of BMI z-score calculator: AnthroCalc app for Android and iOS

*Interpret % weight loss in context of time frame in Table 2.

Table 2:

<table>
<thead>
<tr>
<th>Time Frame (months)</th>
<th>Moderate</th>
<th>Severe</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>&lt; 5%</td>
<td>&gt;5%</td>
</tr>
<tr>
<td>3</td>
<td>&lt; 7.5%</td>
<td>&gt;7.5%</td>
</tr>
<tr>
<td>6</td>
<td>&lt; 10%</td>
<td>&gt;10%</td>
</tr>
<tr>
<td>12</td>
<td>&lt; 20%</td>
<td>&gt;20%</td>
</tr>
</tbody>
</table>

**Fluid and/or Electrolyte Disturbance:**

In restrictive eating disorders, it is common to have normal serum electrolytes at baseline. Electrolyte abnormalities are more likely at baseline if they are engaging in bingeing/purging behaviours (e.g. anorexia nervosa-binge/purge subtype or bulimia nervosa). If abnormalities are present at baseline in patient with restrictive eating disorders, refeeding syndrome should be considered and there should be a low threshold for inpatient admission.

- Hypokalemia – serum potassium <3mmol/L
  - Assess need for treatment and admission due to ongoing losses
  - See regional potassium guidelines regarding management
  - Low threshold for admission of adolescents who present with hypokalemia even if vital signs are stable.
- Hyponatremia or hypernatremia.
- Hypophosphatemia (< 0.8 mmol/L)
- Hypoglycemia (<2.6 mmol/L) - this can both be caused by refeeding syndrome and a post-prandial drop in blood sugar due to insulin surge and low glycogen stores
- Hypomagnesemia (<0.65 mmol/L)
- Renal impairment/Acute Kidney Injury – caution advised when interpreting creatinine results as even though result reported as “normal”, creatinine may be elevated when reduced muscle mass from starvation is considered.
- Dehydration
- Metabolic alkalosis

**CAUTION:** The assessment of fluid and electrolyte disturbances in patients presenting with an eating disorder can be challenging due to the usual markers of volume status being less reliable. Risk factors for electrolyte abnormalities include refeeding which induces a metabolic change from catabolism to anabolism and chronic intravascular volume depletion from fluid restriction, vomiting, and use of laxatives and/or diuretics. Patients with AN often have impaired osmoregulation and difficulty concentrating urine when dehydrated. They can also have impairments in secretion of antidiuretic hormone and renal concentrating ability as well as secondary
hyeraldosteronism. This is relevant to interpretation of urine output on history as well as interpretation of urine specific gravity. For example, a patient who appears dehydrated based on other indices may have a reasonable urine output on history and urine specific gravity that is not concentrated. Additionally, patients are often bradycardic at baseline, thus resting heart rate is not a good indicator of intravascular volume status. Interpretation of serum sodium at admission is generally a poor indicator of hydration status. Water intoxication with severe hyponatremia is very rare. In the context of an acute presentation, it is more common to have normal serum sodium despite dehydration (BC Children’s Hospital, 2016).

**Cardiac Complications:**
- prolonged QTc > 450 ms,
- bradycardia
- second- or third-degree heart block
- EKG changes secondary to hypokalemia
- ventricular arrhythmias
- pericardial effusion

An EKG should routinely be performed in the emergency department to assess for potential cardiac complications:
- Prolonged QT interval is a risk factor for ventricular dysrhythmia and sudden death. Studies have shown that patients with anorexia nervosa are at more likely to have prolonged QT intervals than healthy controls, including healthy controls deemed “constitutionally thin.”
- Decreased heart rate variability has been identified as a predictor of sudden cardiac death. It is felt that lost variability may be due to starvation related autonomic dysfunction. This, in conjunction with the finding that the degree of orthostatic changes in vital signs often increase in the early days of re-feeding, means that the absence of orthostatic changes in HR and BP at the time of presentation/admission to hospital, in the setting of severe caloric restriction and bradycardia, may be an ominous finding (Casiero and Frishman, 2006).

**High risk for refeeding syndrome** or severe physical complications such as Wernicke’s encephalopathy (see also Table 1 and Table 2 re: malnourishment):
- < 70% mBMI
- weight loss >20% of initial body weight in 1 year or >10% in 6 months
- BMI z-score < -3
- < 12 years of age
- Little or no intake for greater than 7 days
- Caloric intake <1000 calories per day for two weeks prior to admission as confirmed by reliable history; NOTE: this does not mean that calories are to be started at <1000.
- SUSS test positive – stand from squat or sit up from lying with difficulty i.e. needing to use upper limbs for support
- Evidence of severe loss of subcutaneous fat and/or muscle mass
- Low levels of potassium, phosphate or magnesium prior to feeding
To Interrupt the Binge/Purge Cycle

**Acute medical/surgical complications**, such as (but not limited to; see also above list):

- Syncope
- Seizures
- Wernicke’s encephalopathy (WE)*
- Cardiac failure
- Renal failure
- Hepatitis
- Superior mesenteric artery syndrome

*Note: Children and adolescents often do not present with the full clinical triad of WE. Therefore, consideration of WE is warranted if any component of WE is present in the clinical context of malnutrition from an eating disorder.

If there is concern of WE, this should be treated as a medical emergency. Consult pediatric neurology and start IV thiamine right away in the Emergency Department after drawing a serum thiamine level and prior to giving carbohydrate source (includes IV dextrose). An MRI is recommended to support the diagnosis.

**REFER TO ADMISSION ORDERS FOR DOSAGE RECOMMENDATIONS OF IV THIAMINE**

**Comorbid medical condition** that may become life threatening by the presence of malnutrition and an eating disorder, such as (but not limited to):

- Type 1 Diabetes Mellitus
- Pregnancy

**Acute Psychiatric Emergency:**

- Suicide ideation/risk
- Homicidality
- Exacerbation of comorbid psychiatric condition requiring acute intervention
- Overdose
- Risk of significant self-harm

*Note: the presence of a comorbid psychiatric condition e.g. severe depression, suicidal ideation, severe obsessive compulsive disorder may also indicate the need for hospitalization but a determination based on medical stability and degree of malnutrition should be made whether the appropriate location for admission would be the medical unit or mental health unit.

**ADMISSION ORDERS AND MANAGEMENT**

Team and Allocation:

- All patients admitted for an eating disorder are admitted under Hospital Pediatrics to the Red Team (unless outstanding circumstances arise).
- Patients with eating disorders are targeted to Unit 4, where nursing staff are familiar with management guidelines for the patient population.
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Nutrition (see Appendix A):

- Consult Unit 4 eating disorder program (EDP) dietician.
- There is a strong focus on diet in the order set due to the concept that “food is medicine” for medically unstable and malnourished patients. After medical stabilization of life-threatening complications, nutritional rehabilitation is the next priority. **Without a concerted refeeding effort, no meaningful response to SSRIs and/or psychotherapy can take place, due to starvation-induced cognitive deficits.**
- Close ongoing medical monitoring is required with shift in practice to higher caloric diets.
- If it is psychologically challenging for the patient to have daily increases, consideration can be given to slowing the rate of increase to every other day in consultation with the eating disorder dietician and/or adolescent medicine.
- Nursing staff must supervise and support meals and snacks initially, until the CEDP dietician has met with the parents and established that parents are ready and appropriate for meal supervision.
- Group meal supervision is a psychological intervention that requires the appropriate therapeutic milieu and staff experience to give the desired treatment benefits and minimize potential harms. Appropriateness should always be discussed with the CEDP dietician and/or adolescent medicine.
- **Case by case modifications to nutrition** may be required when very young age and/or greater degree of malnutrition is present. For example, an 11 y.o. individual who has a mBMI of 69% will have different nutrition recommendations than an 8 y.o. individual who has a mBMI 50%. Consultation on complex cases should occur with Adolescent Medicine and the CEDP dietician as these patients may require lower starting calories and a slower rate of increase.
- Thiamine should be administered in any patient at risk for refeeding syndrome. Route, dose and length of supplementation will vary based on degree of risk.
- Metabolic changes of refeeding syndrome should be suspected if there is a decrease from baseline in any 1, 2, or 3 of serum phosphorus, potassium, and/or magnesium levels by 10-20%. Refer to the ASPEN 2020 Consensus Recommendations for Refeeding Syndrome (see Key Links) for further information on classification of refeeding syndrome based on severity of metabolic and/or clinical changes. **Serum phosphate concentrations of less than 0.50 mmol/l (normal range 1-1.9 mmol/L) can produce the clinical features of refeeding syndrome.**
- In general, IV dextrose solutions are to be avoided as they can precipitate refeeding syndrome. However, if deemed clinically necessary and/or medications are infused in dextrose, calories from dextrose should be considered in the total daily caloric intake. Dextrose contains 3.4 calories per gram. For example, 5% Dextrose has 0.17 kcal per milliliter.
- For the purposes of the nutritional rehabilitation pathways, Day 0 is the day of admission and Day 1 is the first full 24 hours that the patient is admitted to hospital.
- **Pathway A:**
  - These patients can be started on 1700 Kcal on Day 1 of admission and advance by 200-300 kcal daily until they achieve a daily caloric intake of 2500-2600 Kcal/day. Then increase as needed.
  - Routine thiamine replacement 100 mg PO once daily should be started.
  - Routine phosphate supplementation is not recommended however if phosphate decreases, supplementation should be started as phosphate effervescent 500 mg tab (16 mmol) PO once (mild hypophosphatemia) to twice daily (moderate hypophosphatemia).
Severe hypophosphatemia should be treated with IV doses as per Lexicomp/AHS parenteral monograph and/or ACH pharmacist. There is a Connect Care order set for Sodium Phosphate IV administration, MAX dose is 15 mmol over 2-4 hrs.

- If patient is >= 12 years of age and more severely malnourished (e.g. 60-70% mBMI) refer to Appendix A, Pathway B:
  - Start at 1400 calories on Day 1 of admission.
  - Calories are advanced by 200-300 kcal every one to two days with an end point as per CEDP dietician as this will vary.
  - The following supplements are recommended with the first dose given in ER/unit prior to any carbohydrate (including IV dextrose):
    - Phosphate effervescent 500 mg tab (16 mmol) PO bid
    - Thiamine:
      - Wernicke’s Encephalopathy Prophylaxis:
        - Thiamine 2 mg/kg up to max 200 mg IV or IM daily for 3 days. 100-200 mg IV or IM is recommended for adolescents with AN.
        - Then thiamine 100 mg PO tid for 1-2 weeks followed by 100 mg PO daily and then reassess once discharged in ED outpatient clinic.
      - For Suspected Wernicke’s Encephalopathy:
        - Consult pediatric neurology as this is a medical emergency
        - Draw a serum thiamine level prior to giving thiamine or any carbohydrate (including IV dextrose).
        - Thiamine 200-500 mg IV q8h for 5-7 days.
        - Then 250 mg IV or IM daily for additional 3-5 days (or until clinical improvement ceases).
        - Then 100 mg PO tid for 1-2 weeks followed by 100 mg PO daily and then reassess as per pediatric neurology.
        (ASPEN 2020; Lexicomp)
  - NOTE: There is no high-quality evidence to guide prophylactic and treatment doses, route or duration of thiamine in cases of WE in children and adolescents with AN and therefore it is strongly recommended that pediatric neurology be consulted on cases of WE and dosing be confirmed with pharmacy and/or Lexi-comp. Higher doses in adolescents with AN is supported in case reports. AHS adult inpatient orders for WE are available here.
  - IV thiamine allows for rapid increase in thiamine in the CNS and avoids less reliable absorption from the gastrointestinal tract due to malnutrition. Resolution of ocular changes and ataxia should occur rapidly within hours to days and confusion should improve over several weeks, possibly sooner with higher doses. Peripheral neuropathy may take longer to recover.

- In extreme cases of malnutrition (e.g. BMI < 13, %mBMI < 60%) and/or patients considered very high risk for refeeding syndrome, refer to Appendix A, Pathway C and refer to the ASPEN 2020 Consensus Recommendations for Refeeding Syndrome to guide clinical decision making (see Key Links). These cases may require management in the PICU setting especially if there is clinical evidence of refeeding syndrome (cardiorespiratory failure; arrhythmias; delirium, severe hemolysis) and/or significant multi-organ dysfunction from malnutrition and/or eating disorder behaviours.
Initiate nutrition at 10-20 kcal/kg with a maximum of 40-50% of goal and then advance cautiously every 1 to 2 days in consultation with Adolescent Medicine and the dietician based on clinical presentation and stability of potassium, magnesium and phosphorus. If electrolytes become difficult to correct or drop precipitously during the initiation of nutrition or there are clinical signs of refeeding syndrome, it is recommended that calories be decreased by 50% and then increased slowly again every 1 to 2 days based on clinical presentation. In some cases, dropping calories to initiation level or cessation of nutrition and then starting the process again may be required (ASPN, 2020).

Remember to include calories from IV dextrose solutions and medications being infused in dextrose in the daily limit. Best to avoid dextrose solutions if clinically possible.

Phosphate and thiamine prophylactic supplementation should be started same as per Pathway B.

Monitoring of sodium, potassium, phosphate, magnesium, and calcium should be done at least twice daily for the first 5 days and then reassessed.

Hypokalemia, hypocalcemia and hypomagnesemia should be managed as per PCCG Guidelines (see Related Links).

These patients may also require continuous NG feeds with a low glycemic index formula such as Nutren Junior to reduce insulin surges from carbohydrates during nutritional rehabilitation and further decrease the risk of refeeding syndrome. Extremely malnourished patients are also at risk of obstruction from bolus feeding providing further rationale for the consideration of continuous NG feeds. Consultation on these cases should occur with Adolescent Medicine and the CEDP dietician.

- If patient is <12 years old, consultation is advised with Adolescent Medicine and the CEDP dietician as caloric requirements will vary. See Appendix A, Pathway D.

**Fluids:**

- Maximum fluids 1.5 x maintenance; fluids can be ordered as 1-1.5x maintenance for most adolescents based on hydration status. Caution if very malnourished and/or renal dysfunction and adjust fluids accordingly based on clinical presentation. Severely malnourished children who are inactive may only require 75% maintenance fluids.
- Include Ensure in fluids (Ensure is 82% water)
- Oral encouraged, IV if necessary; the recommended maintenance fluid for hospitalized patients requiring intravenous therapy is normal saline; If hypoglycemia is present, patient should be offered oral options first to correct hypoglycemia. If refused, then an NGT should be placed; caution is advised in using IV dextrose as can cause rebound hypoglycemia as well as precipitate refeeding syndrome
- Severe malnutrition secondary to AN will diminish cardiac mass and weaken cardiac function. Judicious use of fluid rehydration is paramount.
- In the case of chronic purging behaviours, intravascular volume depletion and extra-renal chloride loss leads to activation of the renin-angiotensin-aldosterone system. Therefore, large and rapid volume rehydration can cause significant peripheral edema, which can be emotionally distressing and exacerbate electrolyte abnormalities. The activated RAS may take several weeks to normalize even after cessation of purging behaviours.

- Recommendations:
  - Oral is the preferred route for gentle rehydration with fluid.
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♦ Weight-based intravenous volume boluses (10 mL/kg/dose) only if oral rehydration is not possible or indicated.
♦ Avoid rapid infusion of fluid to avoid fluid overload and/or acute hypertensive crisis
♦ Normal saline is the IV fluid of choice; avoid dextrose-based IV solutions

Bowel Regime:

- In patients who purge, rebound constipation can develop after cessation of stimulant laxatives.
- Constipation is also common in the AN population and commonly made worse during the nutritional rehabilitation process in hospital due to slow colonic transit time
- Recommendations:
  - Start all patients on PEG 3350 17 PO once daily at admission. Titrate to effect.
  - Avoid stimulant laxatives (risk for long-term abuse).
  - Avoid fibre-based products that can cause bloating.

Ins and Outs:

- Accurate ins and outs per shift.
- Order a “dip” for specific gravity daily on the first morning void.

Weight Monitoring:

- Daily weights, post-void, pre-breakfast, in underwear and hospital gown only. No jewellery.
- Weight information is NOT to be discussed with the patient or family (instead, the focus should be on restoration of health). Patient should stand backwards on the scale to ensure the information is not seen.
- Treatment goal weights (TGW) are typically determined in consultation with adolescent medicine and the dietician. Further information on how a TGW is determined can be found here.
- If the daily weights are fluctuating widely, consider random weights, and look to the ins/outs/balances as well as urine specific gravity for clues.
- Expected daily weight gain is 0.2 kg (200 grams) per day leading to a goal of 1-2 kg per week. Initial weight loss during the first few days of admission are frequently observed if starting caloric intake is too low.
  - If gaining more than this, consider a weighing error, or the change may be due to fluid loading or edema from fluid shifts and/or cardiac failure from refeeding.
  - If not gaining adequately, calories should be increased (200 - 300 kcal/day) in consultation with the dietician.
    - Consider that the patient may be attempting to lose weight through exercise or purging.
  - After one week in hospital, weight gains should be analyzed by the average over a week, instead of via day to day variations. Goal is 1-2kg per week.

- Most adolescent patients will have ongoing weight gain once calories in hospital typically reach 2500 kcal/day. Patients who are not gaining on this amount of nutrition may need closer observation for food discarding or purging behavior. A metabolic cart can also be considered. However, some patients may need more calories as patients are hypermetabolic during nutritional rehabilitation and can require higher than expected amounts of energy to achieve weight restoration. The maximum amount of calories is usually 3000 kcal/day.
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Cardiac Monitoring:
- All bradycardic patients should be on 24h continuous cardiac monitoring.

Vital Signs Monitoring:
- Vital signs should be measured every 4 hours with orthostatic vital signs (HR and BP) done when awake.
  - Orthostatic vital signs should be done first in the supine position, after the patient has been lying down for 5 minutes, then standing after the patient has been upright for 2 minutes.
  - Note: According to Shamim et al, “pulse is a more sensitive indicator of vital sign stability than blood pressure.” In that study, researchers found that on admission 60% of patients with AN had orthostatic pulse changes (compared to 15% with orthostatic BP changes); by day 4 of admission, this had increased such that more than 85% of patients had orthostatic pulse changes. The percentage of patients with orthostatic pulse changes then improved over time, with 70% affected by 2 weeks of hospitalization, and the vast majority showing resolution by 3 weeks in hospital.

Activity:
- Bathroom precautions for all patients – this means the bathroom in the patient room is locked and opened for monitored use by the RN.
- Patients cannot use the bathroom for 1 hour after meals (purging risk).
- Strict medical bedrest means the patient is always in bed and uses a commode instead of the washroom. This should be used at the discretion of the admitting physician.
- Medical bedrest means the patient is in bed except to use the washroom and to be weighed. This should be used if the patient is medically unstable in more than one parameter (HR, BP, orthostatic changes).
- Advances in activity can be considered when stability parameters are achieved and maintained for approximately 48 hours.
  - If unstable in only one parameter, the patient may be allowed to take short (10-15 minute) supervised walks 3-4 times per day, or to be off the ward in a wheelchair (supervised) for short periods (ie. 20-30 minutes, 3 times per day).
  - It is important to advance activity when parameters allow as orthostatic instability can be initiated or worsened by deconditioning.

Initial Investigations:
- CBC with differential
- electrolytes including calcium, magnesium, phosphate
- glucose
- Creatinine, urea
- Liver enzymes and liver function (including albumin, INR/PTT, bilirubin)
- Iron studies
- LH, FSH, TSH, estradiol. Consider prolactin.
- Celiac screen (note: the patient must be taking in gluten for this test to have any value. Consider deferring or repeating the test in a restricted diet)
- CRP (if need to rule out organic causes of weight loss; note that it can be suppressed in malnutrition providing false reassurance)
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- Urinalysis
- Beta HCG (if indicated)
- EKG (looking especially for prolonged QT interval or heart block)
- ECHO to be considered in the following circumstances: weight <70% of expected or BMI <15, heart murmur, or abnormal EKG out of keeping with usual findings. These patients are at risk compromised cardiac contractility with poor ejection fraction and pericardial effusion.
- In patients with diabetes mellitus, an A1C should be ordered as patients may be withholding insulin as a weight loss measure
- thiamine level if presenting with signs and symptoms of Wernicke’s encephalopathy

Ongoing Investigations:
- First morning void for specific gravity throughout hospitalization.
- Refeeding labs: electrolytes, creatinine, urea, calcium, magnesium, phosphate, glucose – daily for 5 to 14 days depending on the patient. (nadir in phosphate tends to occur on day 4 of nutritional rehabilitation; refeeding syndrome often presents as cardiorespiratory failure in week one and neurological manifestations such as delirium in week 2 so more severely malnourished patients may benefit from prolonged monitoring of labs).

Medications:
- Caution must be used in prescribing medications that may prolong the QT interval, as patients with eating disorders are already at risk for this potentially life-threatening anomaly (Bhadoria et al., 2010).
- Order the medications the patient was taking at home, at the discretion of the admitting physician.
- Standard medications:
  - PEG 3350 17 g po OD
  - Vitamins and minerals:
    - Multivitamin with minerals 1 tablet po daily (Centrum Forte Essentials)
    - Calcium carbonate 500 mg elemental tablet po BID.
      - Adjust if young age or patient receiving enough calcium through diet as per dietician.
    - Vitamin D 1000 international units per day.
    - Elemental Zinc 10 mg po daily
      - Based on Level II evidence, oral administration of 14 mg of elemental zinc daily for 2 months in all patients with AN should be routine (WFSBP Guidelines, 2011). This in combination with the amount of elemental zinc in the multivitamin will be the equivalent of 17.5 mg daily.
      - Caution in patients that are very low weight as recommended prophylactic and treatment doses for zinc deficiency are 0.5-1 mg/kg/day in children and adolescents (Lexicomp).
    - Thiamine 100 mg po daily (unless different dose and route indicated elsewhere in Pathway)
INPATIENT GUIDE FOR THE MANAGEMENT OF ADOLESCENTS WITH FEEDING AND EATING DISORDERS

- Medications used with CAUTION (i.e., not routine for all patients due to limited benefit and risk of adverse side effects in patients with eating disorders). Prescriber should also refer to Lexicomp with respect to dosing:
  - Domperidone 10 mg by mouth three times daily prn before meals if >= 40 kg. Use 0.25 mg/kg up to 10 mg TID in younger and very low weight patients (Lexicomp).
    *caution with prolonged QT interval, heart failure, or electrolyte abnormalities; There is a risk of serious ventricular arrhythmias or sudden death in patients taking more than 30 mg per day (Health Canada, 2012).
  - Metaclopromide 5-10 mg by mouth three times daily prn before meals if >=50 kg. Use 0.1-0.2 mg/kg/dose in younger and lower weight patients (Lexicomp).
    *caution as this medication can have neurological side effects e.g., acute dystonic reaction. It should not be used for longer than 12 weeks due to concerns of causing tardive dyskinesia.

- May need electrolyte supplementation, depending on lab results (ie. potassium, magnesium, phosphate).
- Decisions regarding initiation of psychiatric medications, such as anti-depressants, should be left to the discretion of the Adolescent Medicine specialists and/or Psychiatrist involved.

Consultations and Referrals:
- The Adolescent Medicine service should be consulted for all patients admitted for management of an eating disorder. Adolescent Medicine has on-service coverage from 8 am to 5 pm Monday to Friday.
- The Unit 4 Eating Disorder Team dietician should be consulted on pager 01478.
- Multidisciplinary care is felt by experts in the field to be essential to maximizing recovery. The Adolescent Medicine service will coordinate referrals to the various members of the Eating Disorder team: Psychiatry, counselling, specialized outpatient nursing, etc.
- When there are admitted eating disorder patients on Unit 4, representatives from Red Team are invited to participate in the multidisciplinary team rounds. These occur at 11:00 am on Wednesdays in the dining room of the eating disorder day program (4th floor clinic across from Unit 4 and behind the NICU).

INPATIENT MONITORING INCLUDING NURSING GUIDANCE

The following information is provided to guide the admission and Unit 4 nurses, so does not need to be ordered. It is included so practitioners can understand the expectations placed on patients admitted with eating disorders.

Weights:
- Weights to be done at same time daily
- Post void, pre-breakfast
- Patient is to be weighed in underwear and hospital gown only
- No jewelry
- Patient is to go backwards on the scale
- If patient and/or family has questions regarding the weight, these will be discussed with them by the eating disorder program staff
Nutrition:
- Meals: 30 minutes for breakfast, lunch, and snacks; 45 minutes for supper
- No outside food or drink is permitted
- Food substitutions are generally not permitted as they are often a symptom of the eating disorder; if the child or adolescent has a long history of food dislike or a religious or cultural dietary restriction that predates the eating disorder, then this may be accommodated. Please also consult with the Unit 4 eating disorder team dietician.
- All meals to be supervised; a helpful meal support video for instructions on how to do meal support can be found at https://keltyeatingdisorders.ca/. The CEDP also has a meal support video that is shared with Unit 4 staff. During meal support, conversations about the quantity, type, and contents of the food as well as dieting should be avoided; It is important to take a neutral stance with food. The approach should be one of “food is medicine” and “all foods fit”. Avoid categorizing foods as “good” or “bad” or “healthy” or “unhealthy”.
- Post-meal supervision necessary for 1 hour
- We will accommodate religious dietary requirements as much as possible. We are not able to accommodate vegan diets.
- No diet or low-fat products, no outside food
- No caffeine, (i.e., Pop, tea or coffee)
- Always start with solid food if patient will tolerate
- If patient is unable to eat the solid food, or does not finish food in allotted time, then Ensure is offered as another choice to replace food not eaten.
- Ensure replacement: Replace calories 1:1 whereby 1 kcal of uneaten food = 1 mL of Ensure.
- If patient is unable to drink the Ensure, an NG tube is offered to help support their nutrition and help their body recover; It should not be discussed as a punishment but rather a tool in the toolbox to support them given that eating is very difficult at this time due to their illness (i.e., should not be viewed as a “bad behavior” but rather that their illness if very loud and they need extra support).
- Parenteral nutrition is rarely needed, except in the most challenging of cases. This should only be considered in consultation with an Eating Disorder Specialist.

Fluids:
- Use clinical judgment
- Can increase fluids as patient becomes more stable
- Be careful not to overload with fluids
- Check urine specific gravity daily
- It is common to observe large negative fluid balances initially from fluid and electrolyte shifts during nutritional rehabilitation

Vitals:
- Orthostatic vitals to be done as per admission orders
- Patient to be on medical bed rest if vitals unstable
- Continuous cardiac monitoring initially
- When HR during the day >45 may be off monitor during the day (still need at night)
- When HR at night >45 may be off monitor at night as well
- If HR at night <40, patient should be assessed.
  - Check temperature, warm them up (add warm blankets)
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- Check for adequate perfusion
- Wake them up and check mental status
- Do ECG once at the low resting HR to look for prolonged QTc or evidence of heart block. If the ECG is normal, do not need to repeat ECG every time the HR gets this low. The patient should be re-evaluated if HR gets even lower and decision for further ECG/treatment based on clinical findings

Advancement of Activity:
- Initially, medical bed rest x48 hours
- When unstable in only one parameter x 24 -48 h and no orthostatic symptoms, may start wheelchair rides off monitor, off ward, supervised for 20 -30 minutes t.i.d.
- May progress to short, supervised walks off monitor, off ward 15 min t.i.d.
- If vitals stable and able to gain expected weight with short walks, may be allowed to be out of bed around ward in addition to off ward walks
- Meals must still be supervised
- If unable to make required weight gain may need to be put back on medical bed rest to observe

Investigations:
- Daily lytes, urea, creatinine, calcium, magnesium, phosphate, glucose while at risk for re-feeding syndrome
- Length of time will vary (range is 5 to 14 days)
- Minimum monitoring period: 5 days
- May need to monitor longer if severely emaciated and unable to advance calories as quickly as would like to
- May need to supplement phosphate, potassium, or magnesium as necessary based on labs
- During the refeeding process, there is a postprandial surge in insulin, resulting in a drop in blood glucose. This occurs most commonly in the first 2-3 days of refeeding. If a patient is symptomatic for hypoglycemia after meals, a bedside blood glucose is recommended. Hypoglycemia should be corrected orally as first line.
- Daily first a.m. void for specific gravity
- Consider echocardiogram if severe anorexia nervosa, evidence of cardiac abnormalities on ECG
- If amenorrhea x 6 months, consider bone density testing – can be done as an outpatient
- Additional labs patient specific

DISCHARGE AND FOLLOW-UP

There has been substantial change in the average length of stay for patients admitted to hospital for management of feeding and eating disorders over the past three decades. The average length of stay for a patient admitted to hospital for management of AN in 1984 was almost 150 days; in 1998, the average length of stay was 24 days (Sylvester et al., 2008). Currently in the last decade, change in length of stay and readmissions to hospital has been largely driven by the development of manualized, intensive, outpatient treatments such as Family Based Treatment or FBT for AN-R however gaps remain for those patients also struggling with bingeing and compensatory purging behaviours. Research is active at better understanding best treatment approaches to new DSM 5 categories of other restrictive eating disorders that can present with severe malnutrition and medical instability such as ARFID and atypical anorexia nervosa.
According to Shamim et al, with appropriate improvements in nutrition and weight, “normalization of vital signs takes approximately 3 weeks and occurs when subjects reach 80% of their [ideal body weight]” or treatment goal weight (TGW). It is at this time that transfer to an outpatient setting is likely most appropriate.

### Discharge Criteria Include:

- **Vital Sign Stability – maintained for minimum 48 hours:**
  - Heart rate >45 beats per minute (both daytime and night-time heart rates).
  - Blood pressure >80/45 mmHg.
  - Orthostatic heart rate change of <35 beats per minute and systolic blood pressure change <20 mmHg.
  - Consistently able to maintain a core body temperature >35.6 degrees Celsius.
  - Stable electrolytes.

- **Attainment of Appropriate Weight:**
  - There is no strict weight criterion for discharge.
  - Children and adolescents with AN-R are most likely to be recommended Family Based Treatment (FBT): a manualized, intensive, outpatient treatment model where weight recovery is built into the treatment. Prolonged hospitalization for this specific subset of patients is counterproductive to the treatment model and as such admissions to hospital for medical stabilization are short with the goal to achieve medical stability ONLY. As such, patients are often discharged at low weights and with little weight gain achieved during the inpatient stay.
  - As there are fewer resources for children under 14 yo, it is a strong consideration to keep those patients in hospital longer to achieve more lofty weight goals in order to maximize recovery if they are not going to transition to FBT as there is a significantly increased risk of re-hospitalization when discharge occurs at low weights in the absence of FBT. Under these circumstances, the MRP from Hospital Pediatrics can speak directly to the Adolescent Medicine Specialist on service that month to discuss whether a transfer of care under Adolescent Medicine would be appropriate.

- **Social Status conducive to discharge:** Patient and family are able to commit to ongoing recommendations regarding caloric intake and exercise restriction.
- **RD has completed discharge planning with the parent.**
- **No ongoing acute psychiatric comorbidity that requires further stabilization on a mental health unit prior to discharge once the patient is medically stable. PCL should be consulted if a transfer to mental health is indicated as the patient is best served by a mental health team including child and adolescent psychiatrist under these circumstances and is not appropriate for transfer of care under Adolescent Medicine.**

- **Assured Follow-up:**
  - All patients should be followed as outpatients through the Eating Disorder Program.
  - Eating Disorder Program: 403-955-7700
REFERENCES


28. Lexicomp. © 2020 UpToDate, Inc. and its affiliates and/or licensors.


32. Determining treatment goal weights for children and adolescents with anorexia nervosa. Norris, ML, Hiebert, JD, Katzman, DK. Practice Point. Canadian Paediatric Society 2018


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50. Predictors of complications in anorexia nervosa and atypical anorexia nervosa: Degree of underweight or extent and recency of weight loss? Whitelaw et al. JAH, 2018; 63(6): 717—723


APPENDIX A: CLINICAL PATHWAYS

Malnutrition Assessment Tables

Table 1:

<table>
<thead>
<tr>
<th>Malnutrition by degree of weight loss from original body weight (SAHM, 2015)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Malnutrition</td>
</tr>
<tr>
<td>----------------</td>
</tr>
<tr>
<td>Mild</td>
</tr>
<tr>
<td>&gt; Moderate</td>
</tr>
<tr>
<td>Severe</td>
</tr>
</tbody>
</table>

Example of BMI z-score calculator: AnthroCalc app for Android and iOS.
@Interpret % weight loss in context of time frame in Table 2.

Table 2:

<table>
<thead>
<tr>
<th>Assessing malnutrition by time frame of weight loss (SAHM, 2015)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Time Frame (months)</td>
</tr>
<tr>
<td>---------------------</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>1</td>
</tr>
<tr>
<td>3</td>
</tr>
</tbody>
</table>
### High risk factors for Refeeding Syndrome

<table>
<thead>
<tr>
<th>Risk factor</th>
<th>Criteria</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>&lt; 12 years old</td>
</tr>
<tr>
<td>%mBMI</td>
<td>&lt;70% mBMI</td>
</tr>
<tr>
<td>Amount of weight loss</td>
<td>weight loss &gt;20% of initial body weight in 1 year or &gt;10% in 6 months</td>
</tr>
<tr>
<td>BMI z-score</td>
<td>BMI z-score &lt; -3</td>
</tr>
<tr>
<td>Intake</td>
<td>No or minimal intake for &gt; 7 days</td>
</tr>
<tr>
<td>Caloric Intake</td>
<td>Caloric intake &lt;1000 calories/ day for 2 weeks prior to admission</td>
</tr>
<tr>
<td>SUSS TEST</td>
<td>Positive SUSS test which refers the need to use upper limbs for support from squat or sit up from lying.</td>
</tr>
<tr>
<td>Muscle and subcutaneous fat</td>
<td>Evidence of severe loss of subcutaneous fat and/or muscle mass</td>
</tr>
<tr>
<td>Electrolytes</td>
<td>Low levels of potassium, phosphate or magnesium prior to feeding</td>
</tr>
</tbody>
</table>
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Initial Clinical Assessment Algorithm

Step 1: Initial Assessment

- Complete history + physical exam to assess for overall medical stability and disposition from the Emergency Department:
  - Vital sign stability (i.e. orthostatic vital)
  - Degree of malnutrition (Table 1, 2, 3)*
  - Binge/purging behaviors
- Initial investigations:
  - CBC, lfts, Cr, Urea, Po4, Mg, Ca, Glucose
  - LH, FSH, TSH, estradiol, beta-HCG (if applicable), urine analysis
  - Celiac screen (if not done in the past)
  - ECG, consider ECHO (IF weight <70% expected BMI, BMI<15, murmur, atypical EKG)

Note: management of acute electrolyte disturbances +/- medical/surgical complications should be initiated in the ED.

Points to Consider

- DDx for malnutrition: based on clinical presentation other investigations may be warranted to rule out other etiologies.

- Patients with severe malnutrition may not mount a typical response to infection and inflammation such as fever, or abnormal markers like CRP/leukocytosis.

- Are there associated comorbid medical conditions?

- **Consider the whole clinical picture, this change alone in the absence of symptoms or other vital sign instability is commonly followed in the outpatient setting.

**STOP!**
- Be judicious of bolus fluids for hemodynamic instability (rare).
- IV DEXTROSE can precipitate refeeding syndrome (use normal saline only).

ADMISSION CRITERIA

ONE OR MORE OF THE FOLLOWING:
1. Vital sign instability:
   - HR<45, HR>50 can be considered for children < 12 years old
   - BP<80/46 or hypotension based on age (6 to 9 years of age)
   - Orthostatic changes:**
   - Heart rate Δ > 35 bpm
   - Postural drop in systolic blood pressure Δ > 20 mmHg or 10 mmHg diastolic
   - Oral Temp <35.5 degrees Celsiu
2. Moderate to severe malnutrition (high risk refeeding syndrome) refer to Table 1, 2, 3
3. Significant fluid and/or electrolyte disturbances: hypok, hypopO4, acute kidney injury. Low threshold for admission if any of these abnormalities are present at baseline. Interpret creatinine in the context of malnutrition/low muscle.
4. Cardiac abnormalities: e.g. prolonged QTc, arrhythmia, heart block, pericardial effusion
5. Acute medical/surgical complications of malnutrition and or binge/purge cycle (see Table 4).
6. To interrupt binge/purge cycle
7. Acute psychiatric emergencies e.g. acute suicidality

NUTRITIONAL PATHWAY

* If patient meets admission criteria enter appropriate pathway based on age and degree of malnutrition.
* Note patient can change clinically during treatment and thus can move between pathways based on the clinical picture.
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NUTRITIONAL PATHWAYS

PATHWAY A
≥ 12 years old and MILD/MODERATE malnutrition

PATHWAY B
≥ 12 years old and SEVERE malnutrition

PATHWAY C
≥ 12 years old and EXTREME malnutrition

PATHWAY D
< 12 years old
M-F 8am-5pm Page Adolescent Medicine Specialist +CEDP RD on call
After hours page ACH RD on call
Nutritional Pathway A:
≥12 Years of age and mild to moderate malnourishment (e.g. %mBMI >=70%)

**NUTRITION:** (Day 0 = day of admission; Day 1 = first full 24 hours in hospital)
- Start 1700 kcals on Day 1 (divided into 3 meals and 3 snacks) and advance by 200 to 300 kcals DAILY as tolerated until about 2500-2600 kcal/day. Can be tailored beyond as needed based on weight gain.
- Fluids: encourage oral intake with a maximum of 1.5X maintenance fluids in a day.
- Vitamins: Thiamine 100 mg po daily, Multivitamin 1 tablet po daily, Vitamin D 1000 units po daily, Elemental Zinc 10 mg po daily, Calcium 500 mg Elemental tablet po BID.
- Phosphate is not recommended routinely unless phosphate decreases. Dose: 500 mg po daily (mild hypophosphatemia) or 500 mg po BID (moderate hypophosphatemia).
- PEG 17 g po daily as routine.

**INPATIENT INVESTIGATIONS:**
- Daily AM lyes, Cr, Urea, glucose, phos, Mg, Ca, for 5 days
- Daily AM Urine analysis
- Other investigations may be warranted based on clinical presentation

**Daily Patient care:**
- Assess daily for clinical stability, complications of malnutrition, and signs/symptoms of refeeding syndrome.
- Vitals: continuous cardiac monitor, orthostatic vital signs Q4H.
- Accurate ins and outs
- Daily weight first thing in the AM, post-void, pre-breakfast, in hospital gown
- Medications: as above, home medications.
- Nutrition: see above; aim for weight gain of ~0.2 kg/day or 1-2 kg per week. CEDP RD determines when parent-led or group meal support is appropriate.
- Activity: 1:1 supervision for all meals, bed rest, no bathroom privileges.

- Other electrolyte supplementation may be needed based on initial labs. Re-evaluate Pathway if significant electrolyte disturbance at baseline or during course of admission.
- Severe hypophosphatemia should get IV dosing as per Lexicomp and/or ACH pharmacist.

- Please refer to the text body for more details on advancement of activity.
- For patient interaction tips refer to Section 2 of this appendix.
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Nutritional Pathway B:

- >= 12 Years of age and severely malnourished (e.g. %mBMI > 60 and < 70%)

- If patient presents during 08:00-17:00, consult Adolescent Medicine Specialist listed in ROCA.
- Have ready pertinent info such as: age, wt, ht, BMI, nutritional status, percent weight loss over time, presentation, management in hospital to date, vitals w/ orthostatic changes, electrolyte disturbances and other pertinent medical + psychosocial factors.
- If you have questions or uncertainty about nutrition orders can page CEDP RD (pg 01478). After hours, the RD on call can be paged.
- Use the ACH SCM or Connect Care order set.

NUTRITION: (Day 0 = day of admission; Day 1 = first full 24 hours in hospital)

- Start 1400 kcal on Day 1 (divided into 3 meals and 3 snacks). Increase by 200-300 kcal/day every one to two days with an end point based on the CEDP RD recommendations.
- Fluids: encourage oral intake with a maximum of 1.5x maintenance fluids in a day. Consider if fluid restriction indicated.
- Vitamins: Multivitamin 1 tablet po daily, Vitamin D 1000 units po daily. Elemental Zinc 10 mg po daily, Calcium 500 mg elemental tablet po BID.
- Phosphate 500 mg (16 mmol) po BID.
- Wernicke’s encephalopathy prophylaxis: Thiamine 2 mg/kg up to 200 mg IV OR IM daily for 3 days followed by thiamine 100 mg po TID for 1-2 wks, then 100 mg po daily.
- First dose of Phosphate and Thiamine to be given in ER/unit prior to ANY carbohydrate including IV DEXTROSE.
  Avoidance of IV dextrose solutions is recommended unless otherwise indicated.
- PEG 17 g po daily as routine.

For suspected Wernicke’s encephalopathy:
Consult pediatric neurology as this is a medical emergency. Draw a serum thiamine level prior to giving thiamine or any carbohydrate (including IV dextrose). Thiamine 200-300 mg q8h b.i.d for 3-7 days. Then 250 mg IV or IM daily for additional 3-5 days (or until clinical improvement occurs). Then 100 mg po tid for 1-2 weeks followed by 100 mg po daily and then wean as per pediatric neurology.

INPATIENT INVESTIGATIONS:
- Daily AM Lys, Cre, Urea, glucose, phos, Mg, Ca, for 5 days or longer if indicated.
- Daily AM Urine analysis
- Other investigations may be warranted based on clinical presentation.

Daily Patient care:
- Assess daily for clinical stability, complications of malnutrition and signs/symptoms of refeeding syndrome.
- Vitals: continuous cardiac monitor, orthostatic vital signs QAH.
- Accurate Ins and outs
- Daily weight first thing in the AM, post-void, pre-breakfast, in hospital gown
- Medications: as above; home medications.
- Nutrition: see above; aim for weight gain of >0.2 kg gain /day or 1-2 kg per week. CEDP RD determines when parent-led or group meal support is appropriate.
- Activity: 1:1 supervision for all meals, bed rest, no bathroom privileges.

- Other electrolyte supplementation maybe needed based on initial labs. Re-evaluate Pathway if significant electrolyte disturbance at baseline or during course of admission.
- Severe hypophosphatemia should get IV dosing as per Lexicomp and/or ACH pharmacist.

- Please refer to the text body for more details on advancement of activity.
- For patient interaction tips refer to Section 2 of this appendix.
INPATIENT GUIDE FOR THE MANAGEMENT OF ADOLESCENTS WITH FEEDING AND EATING DISORDERS

Nutritional Pathway C:

>=12 Years of age + extreme malnutrition (e.g. BMI <13, %mBMI <60%)

**NUTRITION:** (Day 0 = day of admission; Day 1 = first full 24 hours in hospital)
- Start at 10-20 kcal/kg/day on Day 1 for a max of 40 to 50% of goal. NG continuous feeds with low glycemic formula should be used. IV fluids may be needed to avoid insulin surges and risk of obstruction from bolus feeds.
- Advance cautiously every 1 to 2 days based on clinical presentation and stability of potassium, magnesium, and phosphorus. If electrolytes become difficult to correct or drop precipitously or there are clinical signs of refeeding syndrome decrease calories by 50% and then increase slowly again every 1 to 2 days based on clinical presentation. In severe cases, consider if dropping calories to initiation levels or stopping nutrition is needed to stabilize the patient.
- Fluids: these patients may require fluid restriction based on significance of end-organ dysfunction.
- Vitamins: Multivitamin 1 tablet po daily, Vitamin D 1000 units po daily. Elemental Zine 10 mg po daily, Calcium 500 mg elemental tablet po BID.
- Phosphate 500 mg (16 mmol) po BID AND Wernicke’s encephalopathy prophylaxis: Thiamine 2 mg/kg up to 200 mg IV OR IM daily for 3 days followed by thiamine 100 mg po TID for 1-2 wks, then 100 mg po daily.
- First dose of Phosphate and Thiamine to be given in ER/unit prior to ANY carbohydrate including IV DEXTROSE; avoidance of IV dextrose solutions is recommended unless otherwise indicated.

**INPATIENT INVESTIGATIONS:**
- Twice daily lites. Cr, Urea, glucose, phos, Mg, Ca, for 5 days or longer if indicated
- Daily AM Urine analysis
- Other investigations may be warranted based on clinical presentation

**Daily Patient Care:**
- Assess daily for clinical stability, complications of malnutrition or sign/symptoms refeeding syndrome.
- Vitals: continuous cardiac monitor, orthostatic vital signs Q4H.
- Accurate ins and outs
- Daily weight first thing in the AM, post-void, pre-breakfast, in hospital gown
- Medications: as above, home medications
- Nutrition: see above, aim for weight gain of ~0.2 kg gain/day or 1-2 kg per week. CEDP RD determines when parent-fed or group meal support is appropriate.
- Activity: 1:1 supervision for all meals, bed rest, no bathroom privileges

- Other electrolyte supplementation may be needed based on initial labs. Re-evaluate Pathway if significant electrolyte disturbance at baseline or during course of admission.
- Severe hypophosphatemia should get IV dosing as per Lexicomp and/or ACH pharmacist.

*Please refer to the text body for more details on advancement of activity. For patient interaction tips refer to Section 2 of this appendix.
Nutritional Pathway D:

<12 years old requires consultation with Adolescent Medicine Specialist

For suspected Wernicke's encephalopathy:
Consult pediatric neurology as this is a medical emergency. Draw a serum thiamine level prior to giving thiamine or any carbohydrate (including IV dextrose).
Use pediatric IV thiamine dosing as per Lexicomp/ACH pharmacist.

INPATIENT INVESTIGATIONS
- Daily AM lyses, Cr, Urea, glucose, phos, Mg, Ca, for 5 days
- Daily AM Urine analysis
- Other investigations may be warranted based on clinical presentation

Daily Patient Care:
- Assess daily for clinical stability, complications of malnutrition or sign/symptoms refeeding syndrome.
- Vitals: continuous cardiac monitor, orthostatic vital signs Q4H.
- Accurate ins and outs
- Daily weight first thing in the AM, post-void, pre-breakfast, in hospital gown
- Medications: as above; home medications.
- Nutrition: see above; aim for weight gain of ~0.2 kg gain/day or 1-2 kg per week. CEDP RD determines when parent-led or group meal support is appropriate.
- Activity: 1:1 supervision for all meals, bed rest, no bathroom privileges.

• Other electrolyte supplementation may be needed based on initial labs
• Severe hypophosphatemia should get IV dosing as per Lexicomp and/or ACH pharmacist
• Please refer to the text body for more details on advancement of activity.
• For patient interaction tips refer to Section 2 of this appendix.
## Sample Progress Note for Eating Disorder Patients

<table>
<thead>
<tr>
<th>Date: ________________</th>
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<tbody>
<tr>
<td>ID: _________________</td>
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<tr>
<td>Day of Admission: (Day 0 = day of admission; Day 1 = first full 24 hours in hospital): ________________</td>
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<td>Admission weight: (this is the first morning weight on the unit after admission): ________________</td>
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<td>Percent of pre-illness weight: ________________</td>
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<td>BMI: ________________</td>
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<td>%median BMI (mBMI = 50th percentile; %mBMI=current BMI/mBMI x 100): Degree of malnutrition (e.g. mild, moderate, severe): ________________</td>
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<td>Treatment Goal weight: Current % of treatment goal weight: Nutritional rehabilitation pathway: _____________</td>
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<td>Current caloric intake: ________________</td>
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<td>Adolescent Medicine Specialist: ________________</td>
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<td>CEDP Dietician: ________________</td>
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<td>CEDP Unit 4 therapist: ________________</td>
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<td>Other consultants involved: ________________</td>
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<td>Other medical and/or psychiatric comorbidities: Social determinants of health to consider: ________________</td>
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<td>Overnight: ________________</td>
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<td>RN concerns:</td>
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<td>Patient concerns/ symptoms? Parental concerns:</td>
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<td>Medications:</td>
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<td>Pertinent exam findings:</td>
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<td>Today's weight: ________________</td>
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<td>Impression:</td>
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<tr>
<td>Problem list/ Plan:</td>
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</tbody>
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Note: Ensure that all parents receive a copy of Appendix B: Caring for Yourself and Your Child in Hospital.
<table>
<thead>
<tr>
<th>Medical/ Surgical Complications of Eating Disorders</th>
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<tbody>
<tr>
<td><strong>System</strong></td>
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<td>Neuropsychiatric</td>
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Eating Disorder Management: A Biopsychosocial Approach

Eating disorders are complex biopsychosocial illnesses (see Figure 1), involving multiple biological factors (i.e.: adolescent physiology and brain development, starvation effects, developmental considerations), psychological factors (i.e.: high emotional reactivity, low emotional expressivity, trait perfectionism), and social contributions (i.e.: reinforcement of the thin ideal, and mischaracterizations of “fitness” as an expressions of discipline and success).

STARVATION IS THE PRIMARY PERPETUATING FACTOR IN THIS ILLNESS. RENOURISHMENT MUST OCCUR FIRST IN ORDER FOR PSYCHOLOGICAL TREATMENT TO BE EFFECTIVE.

Figure 1:

![Biopsychosocial model for anorexia nervosa.](image-url)
Effective communication with an Eating Disorder patient can be challenging as one must consider the overlapping influences of adolescent brain development, malnutrition and eating disorder cognitions:

**Assessment of the Adolescent**

*Communication Toolbox:*
Note: these are provided as possible communication tools that can be used during clinical encounters with an adolescent and/or their caregiver(s). Discretion is advised as to which tools will be most appropriate based on the clinical context.
INPATIENT GUIDE FOR THE MANAGEMENT OF ADOLESCENTS WITH FEEDING AND EATING DISORDERS

Coaching Stance:

Consider the following mnemonic when communicating with the patient and the family.
NAVIGATE©Elliott&Jericho

N: Notice yourself
  ▪ Our emotional state sets the tone for every encounter. Check in with yourself and notice how you are feeling prior to engaging. Taking a moment to recognize your emotional state can help you to prepare, re-set, and enter the conversation with less internal distraction.

A: Attune to the present moment
  ▪ Be here and now. Paying attention and listening without judgement is a vital part of the care you provide, and as important as your spoken expertise.

V: Validate the other persons experience
  ▪ Practice active listening, and validate for the patients expressed concerns, even if you disagree with them; ("It must be difficult to be here and feel you don't need to be...", "Anyone would find it challenging to have to stay in bed all day"...)

I: Introspection
  ▪ Check in with yourself throughout the visit, if you are distracted or struggling with strong emotions, take a break.

G: Guess (gently) at unspoken signals
  ▪ Cautiously, tentatively, curiously guessing and articulating the un-verbalized emotions you are recognizing.
  ▪ "You look a little angry ........................... did I get that right?"

A: Accurately reflect what you've heard
  ▪ Copying, paraphrasing, summarizing
  ▪ "I heard you say you were feeling really frustrated..."

T: Truthfulness
  ▪ It can be tempting to bend the rules for a patient with an eating disorder who is struggling, which can lead to confusion and splitting between team members. It is important to always be clear and honest about the requirements for recovery.

E: Empathy
  ▪ “I know this is difficult ...”
  ▪ Thanking the adolescent for sharing with you today, acknowledging it may have been challenging
INPATIENT GUIDE FOR THE MANAGEMENT OF ADOLESCENTS WITH FEEDING AND EATING DISORDERS

Setting the Stage for the Interview:

- The health care provider (HCP) should greet the adolescent first, and then ask the adolescent if it is okay to meet with them with their parent(s)/caregiver(s) for a few minutes. Explain the order of the visit, goals of the visit, confidentiality, and review the parent(s)/caregiver(s) concern(s) briefly and then ask them to step out. It is important to reassure the parent(s)/caregiver(s) that they will have time later with the HCP.
- After asking the parent(s)/caregiver(s) to step out, reassure the adolescent again of confidentiality. It is important to gather information on the history of the eating disorder and the psychosocial history with the adolescent on their own in order to gain trust and rapport. Many of the questions are sensitive and can be a source of embarrassment and shame. Additionally, parental pressures and family dynamics may prevent the adolescent from feeling safe telling their full history with their parents present. An empathetic, respectful, and non-judgmental stance is therefore critical in these interactions.
- Refer to SSHADESSS questionnaire for psychosocial history. There may be elements of the psychosocial history that become important as part of the overall case formulation and treatment plan, however, unless there is an immediate safety concern, the HCP is advised to use discretion as to the best timing and context for these conversations.
- At the end of any visit, the health professional/trainee should summarize the issues and plans with the adolescent and review which parts you feel are important to discuss with their parent(s)/caregiver(s). This ensures that there are no surprises and gives the adolescent and the HCP the opportunity to discuss how best to approach more sensitive topics.
- When communicating with the adolescent try to provide reassurance about the known symptoms of eating disorders and normalize them. For example, “many of my patients tell me about thoughts that they have that are hard to control and that tell them not to eat. Is that something that you can relate to?”, or “It sounds like those thoughts are strong right now and the eating disorder is loud and that you are having a tough time. How can I support you in this moment?”
- Remember this is a complex illness and treatment is a process. Medical stabilization represents the first stage of this process. The average length of time until full recovery is 1-2 years.

Motivational Interviewing:

Motivational Interviewing (MI) takes into consideration the patient’s readiness for change. It is important to recognize that is common for the patient, caregiver(s) and HCPs to be in different stages of change. Acknowledging these differences is important to the treatment process for several reasons. First, it allows for validation that people can be impacted differently by the illness, and that differences are acceptable. Second, it facilitates being able to move forward with supportive treatment plans tailored appropriately to the stage of change (See also Appendix B). It is important to remember that change is often non-linear, and that setbacks, confusion and ambivalence are a normal part of the recovery process and do not represent “treatment failure.”
5 Principles of Motivational Interviewing (DARES):

- **Develop discrepancy** – between the patient’s goals and values and their current behaviours; weigh the pros and cons of changing; the patient presents the case for change
eg. “On one hand I hear you say that you are not sure that there is an eating problem. On the other hand, I hear you say that the doctors who admitted you to hospital are worried about your heart due to lack of nutrition. How do you understand those two ideas?”
- **Avoid arguing** – resist the urge to prove that you are right
- **Roll with resistance** – ambivalence is normal
- **Express empathy** – non-judgmental acceptance of patient’s perspective eg. It sounds like you are having a tough time. How can I support you?”
- **Support self-efficacy** – belief in the possibility of change
Skills to try (OARS):

Open-ended questions
- E.g. questions that can’t be answered with a “yes” or “no”. “What do you like about…….”
  “What don’t you like about …….”
  “You told me that you’ve cut down purging for a month in the past. Why did you decide to do that? How were you able to do that?”
  “What do you see yourself doing after hospital? How does [behaviour] fit in with your plans?”

Affirmations
- E.g. “I’m really impressed that you came in today to talk about this.”
  “Your parents made you come today and you really don’t want to be here, but you came anyways. That took a lot of courage.”

Reflective listening
- E.g. “So what I hear you saying is…..”
  “If I understand you correctly…….”
  “It sounds like…….”

Summaries:
- Reflective listening on a larger scale
- allows you to show the patient that you have been listening and to intentionally reflect back important parts of the conversation
- can be used to highlight discrepancy
  - e.g. “I’m going to stop and summarize what we’ve just talked about so that I can be sure I’ve understood everything you have said. You’re not sure that you want to be here today and you really only came because your parents insisted on it. At the same time, you’ve had some thoughts of your own about what’s been happening, including how much you’ve been annoyed recently that your parents are on your case for not eating. Did I miss anything? What are your thoughts about what this might mean?”

FAQ: Frequently Asked Questions

Questions Pertaining to Assessment and Management:
- What information is important to include when calling the Adolescent Medicine Specialist for a consult?
  Please ensure to know the following:
  - Eating disorder symptoms; Specific consult question
  - Degree of malnutrition including percent loss of initial body weight, time frame of weight loss, current weight, height, BMI, and % median BMI
  - Vital signs
  - Work up and course of hospitalization to date. (This is especially important in cases of weight loss NYD or when it is a consult for possible ARFID as the differential diagnosis is broad and other medical and/or other psychiatric comorbidities should not better explain the feeding difficulties and/or malnutrition).
  - Other consultants involved.
INPATIENT GUIDE FOR THE MANAGEMENT OF ADOLESCENTS WITH FEEDING AND EATING DISORDERS

It is recommended that the MRP page and speak to the Adolescent Medicine Specialist directly for complex cases e.g. ARFID, undifferentiated cases.

- **What is the value to repeated EKGs in ED patients with known bradycardia?**
  - The literature does not provide clarity on this. The feeling of our local specialists is if we have two normal EKGs documented (i.e. no prolonged QTc) and there are no new medications that have been initiated that could cause cardiac side effects, it is reasonable to try warm blankets and waking the patient to ensure lucidity. If these measures are effective in raising the heart rate and determining patient safety, a repeat EKG is likely not needed.

- **When a new patient with an eating disorder is admitted to hospital, should we consult psychiatry?**
  - When the diagnosis is a restrictive eating disorder based in fears of weight gain and disturbance in body image, the primary service that should be notified is Adolescent Medicine. This specialist will inform and engage the Eating Disorders team at the ACH. The Eating Disorders team includes a Child and Adolescent Psychiatrist with expertise in the area of Eating Disorders. It is at the discretion of the Adolescent Medicine Specialist to consult the CEDP Psychiatrist for diagnostic clarity or for additional specific ED treatment. If there is a clinical question about other psychiatric comorbidities (e.g. OCD, acute suicidality) the PCL team is the psychiatry service to consult.
  - The Eating Disorder team also includes a psychologist and dietician who will meet with the patient and family while on Unit 4.
  - The inpatient focus is on medical stabilization and nutritional rehabilitation. Intensive counselling is not beneficial to the patient until there is sufficient nutritional rehabilitation, due to “starvation-induced cognitive deficits” (Katzman, 2012).
  - In cases of possible ARFID, a conversation with the Adolescent Medicine specialist is recommended before implementing the ED protocol in its entirety and involving the Eating Disorder team.
  - Presentations are often complex, and the etiology of restrictive eating may require a broader medical and psychiatric work-up. Understanding the primary driving force behind the weight loss and malnutrition is necessary in order to formulate treatment recommendations and best fit for services.

- **At what point in the hospitalization is it reasonable to discontinue the CR monitor?**
  - After the highest period of risk for refeeding syndrome and acute medical deterioration has passed (usually after the first 5 days of admission) it is reasonable to:
    - Discontinue daytime monitoring when awake heart rates are over 45 beats per minute for 48 hours.
    - Discontinue the cardiac monitor at night if the HR is >45 at night for 2 nights in a row.

- **When is it reasonable for an inpatient to be allowed a shower?**
  - Patients with orthostatic changes, especially when symptomatic, are at risk for syncope in a shower, which could be a dangerous event. If a patient is asymptomatic, but medically unstable in more than one parameter, a sit-down shower could be considered after about day 4. An alternative would be hair washing at the sink in a wheelchair.
INPATIENT GUIDE FOR THE MANAGEMENT OF ADOLESCENTS WITH FEEDING AND EATING DISORDERS

- Why do we not provide anti-depressants for their mood symptoms while they are an inpatient?
  - Without a concerted refeeding effort, no meaningful response to SSRIs and/or psychotherapy can take place, due to starvation-induced brain and metabolic effects. In addition, the malnourished brain can mimic many mental health conditions, including mood disorders. The patient may not be suffering from Depression, and diagnostic accuracy is a challenge when a patient is malnourished and struggling with the impact of an Eating Disorder. The diagnosis and treatment of co-morbidities takes time and is most often managed in the outpatient setting.

- Why are adolescents with Eating Disorders admitted to hospital when they are not “acutely” ill?
  - Eating disorders are life-threatening, complex biopsychosocial illnesses. For example, AN has the highest mortality rate of any psychiatric disorder with estimates of 5-7%, although some reports that it is as high as 18%. Adolescents with AN are 10 X more likely to die than their healthy peers. Cardiac arrest (secondary to arrhythmias) and suicide are the most common causes of death.
  - Eating Disorders are also associated with significant medical and mental health morbidity. The impact of Eating Disorders, and the work of recovery is significant and can be debilitating for patients and their families. As such children and adolescents with severe Eating Disorders may be admitted to hospital for medical and/or psychiatric stabilization.

Questions Pertaining to Communication:

- What are potential barriers to effective communication with this patient population:
  - If the patient is being admitted to hospital, it is likely that they are significantly malnourished. A malnourished brain can struggle with intense moods, and mood regulation issues. Patients are often lacking insight and do not believe they are sick or that they need to change; this is part of the illness! Their Eating Disorder can convince them that they are fat, which drives an intense phobic response to food. They are often terrified and angry, and as a result may deceive, or engage in splitting behavior to try to control the situation. This is the result of their mental illness, and not the choice of the patient. Think about how you would feel being forced to experience something you were terrified of with no chance of escape.

- How do I discuss bed rest and eventually activities with my patients?
  - The preferred terminology is “advancement in activities.” What the Eating Disorder team would like to avoid is references to “privileges” as this is seen as punitive. Instead of punishment, discussions around advancements should focus on patient safety. After all, nutrition is the key “medicine” we are providing. Bed rest should also be viewed as “medicine” and advancement in activities occurs once the body is responsive to the medicine of nutrition and bed rest which is shown by improvement in vital signs and physical examination of peripheral circulation.

- Can I tell them their weight? Can I tell them other numbers such as the number of calories we started them?
  - No, at this stage of treatment this information may be interpreted through the lens of a malnourished brain and the eating disorder which can create significant psychological distress. Consider the following response instead: “do you think that would be helpful for you to know your weight right now? “How would that change what you need to do today?”
INPATIENT GUIDE FOR THE MANAGEMENT OF ADOLESCENTS WITH FEEDING AND EATING DISORDERS

- Why do so many parent(s)/caregiver(s) struggle with the diagnosis?
  - Societal stigma reinforces that this disorder is a choice, and this can lead to denial of the reality of Eating Disorders in some cases, and a belief that the presentation is a behavioral choice (a diet).
  - The effects of the malnourished brain such as difficulty regulating emotions, anger, food preoccupation and anxiety around meals can be very distressing for parent(s)/caregiver(s), who are uncertain about why these changes are happening for their child. These effects also overlap with many other potential mental health presentations and this creates normal questions about how we differentiate this diagnosis from other diagnoses such as anxiety and depression.
  - The eating disorder cognitions leading to behaviours such as bargaining, avoidance, secrecy, and impulsive behaviours can also be very confusing and trigger strong emotions in others. This experience is not unique to caretaker(s) and can also trigger an emotional response in health care providers.

- Why do ED patients require large volumes of food, and why must they eat a broad range of food types, when it may be easier for them to eat foods that feel “safe” for them?
  - A fundamental part of the disease is fear of eating, and particularly energy dense foods. Recovery focuses on the patient being able to eat all kinds of food without experiencing psychological distress. Thus, it is important to expose patients to a wide range of foods and to not categorize them as ‘good’ or ‘bad’. All foods fit.
  - Many people are surprised by how much food is ordered for these patients. This is to ensure the patient gets enough nutrition to repair their body (e.g. heart) so that they are safe to go home. In can be helpful to explain to caregiver(s) that there are many energy demands on the body currently including organ repair, weight restoration, possible catch up growth and ongoing puberty, return of normal physiological functions (e.g. menstruation), as well as increased energy demands as the body switches from catabolism to anabolism (body can become hypermetabolic for a period after being used to being hypometabolic). Activity is also an additional energy demand that needs to be accounted for. Therefore, for all these reasons, the nutrition prescribed accounts for all these demands and is higher than for an adult that does not have all these energy demands.
  - TIPS:
    - Encourage caretaker(s) to take a neutral stance with food. The approach should be one of “food is medicine” and “all foods fit”. Avoid categorizing foods as “good” or “bad” or “healthy” or “unhealthy”.
    - Helpful meal support video for caretaker(s): https://keltyeatingdisorders.ca/.

- What are some important messages to highlight to the parents?
  - It is not their fault that their child has an Eating Disorder. Eating Disorders are complex diseases with many possible predisposing and precipitating factors. There is no “one root cause”, and the focus should be about moving forward, rather than looking back. They have an experienced, interdisciplinary, and specialized team to support them both during the admission and after discharge.
Discharge Criteria

Note there can be adjustments made to these criteria in consultation with Adolescent Medicine. Please refer to MRP document (Appendix C) for further details.

**Transfer to Adolescent Medicine Specialist Criteria**

- Medical stability for min 48 hours meeting ALL criteria:
  - HR > 45bpm (day and night)
  - Normal blood pressure (> 80/45, or normal for patients age)
  - Orthostatic HR change < 35 bpm, and SBP change < 20
  - Maintaining core temperature of > 35.6
  - No ongoing significant risk of refeeding syndrome or acute medical deterioration
  - Normal electrolytes after 5 days of standard labs
  - Resolution of acute medical complications
  - No ongoing acute psychiatric comorbidity that requires further stabilization on a mental health unit
  - Adolescent Medicine recommends a longer hospitalization for further nutritional rehabilitation

**DISCHARGE CRITERIA**

- Vital sign stability AND other indicators of medical stability as above.
- There is no specific weight attainment criteria for discharge
- Social status conducive to discharge
- No ongoing acute psychiatric comorbidity that requires further stabilization on a mental health unit
- Registered dietician completed discharge plan and teaching with parents.
- Assure all patients are followed up through the Eating Disorder Program: 403-955-7700.

**RESOURCES**

- Resources: see unit 4 handout (Appendix B) for list of additional resources recommended by the CEDP.
- Ensure all parents of patients admitted on Unit 4 received a copy of Appendix B during the admission.
Caring for Yourself and Your Child in Hospital

Calgary Eating Disorder Program

Case Manager: ___________ Phone: ___________
Dietician: _______________ Phone: ___________
Dear Parent,

If you are reading this handout then you have a child who is hospitalized on Unit 4. We recognize that having a loved-one in hospital can be an overwhelming and challenging experience. This handout is meant to provide you with some basic information about how to support your loved-one to the best of your ability, and how to care for yourself during this time.

Up until now, you have been supporting your child at home. You tried your best to keep your child safe. At some point your loved-one had to be admitted to the hospital for a medical stabilization. Your child’s admission does not mean you have failed in taking care of them. Even though they have been admitted to hospital, you play a key role in the treatment and recovery process.

First, let’s take a look at how your child might be feeling, and what their current experience may be.

Effects of Malnutrition

When someone is malnourished their brain function is often affected. Malnutrition can cause a decrease in concentration and memory, and increased preoccupation with food. Mood changes may occur, such as irritability, lack of humour, and difficulty regulating emotions. You may notice increased anxiety and/or anger responses. It is important to remember that these behaviours result from changes in the body, and are often not the choice of your child.

The malnourished brain can often have trouble making sense of a situation. It is in survival mode, and may find certain things threatening that might not seem that way for others.

Some behaviours you might notice in your child that are effects of the Eating Disorder and a malnourished brain could be:

- **Bargaining**
  "If you let me come home I’ll start eating lunch..."

- **Threatening**
  "If you don’t let me come home I’ll stop eating and get myself kicked out..."

- **Avoidance**
  Running away, refusing to talk etc.

- **Impulsive Behaviours**
  Cutting, burning, drinking, lying etc.
INPATIENT GUIDE FOR THE MANAGEMENT OF ADOLESCENTS WITH FEEDING AND EATING DISORDERS

When your loved-one is emotionally dysregulated the key is for you to validate their emotions and help them to bring their emotions down to a manageable level.

Some examples of validating their experience could sound like:

"It sounds like you are having a tough time. How can I support you?"

"I hear that you are frustrated. We still need to follow through with your treatment."

"The eating disorder voice sounds very loud right now. What does [child's name] have to say?"
Externalizing the Eating Disorder

As the Eating Disorder can be very tricky and a mastermind at shaping families to do what it wants (cater to its food preferences, believe not pushing your child to eat is helpful, and convincing you there’s not a problem or focusing on it will make things worse), it’s important you educate yourself about all the loop holes the Eating Disorder uses and how it makes your child do things they normally wouldn’t do. For example, they might lie, hide, manipulate, and go to great lengths to lose weight and/or avoid treatment.

It’s essential in treatment that you are able to separate the Eating Disorder from your child. This will enable you to decrease your frustration with them, blaming them for behaviours not under their control (would you blame a person with cancer with their symptoms?), and assist you in attacking the illness and not your child. Parents do not cause Eating Disorders, Eating Disorders cause Eating Disorders!

YOUR CHILD is not the disorder.

Consider these scenarios:

In this scenario, there is distance between your child and the Eating Disorder. In this situation, your child is reasonable, easy (easier) to talk to, and they may even engage in behaviours that suggest that they want to make changes.

In this scenario the eating disorder is eclipsing your loved-one. When the eating disorder is eclipsing your child, chances are they are emotionally dysregulated - which means they are experiencing an emotion so intensely that they cannot organize their behaviour or soothe themselves. In those moments, your child is likely to feel so overwhelmed that he or she will do just about anything to end their emotional pain.
Parents in Charge Approach

A “Parents in Charge Approach” means taking a united front as parents against the Eating Disorder but not against your child. Your loved one is not the problem – the problem is the problem! If you have a partner or other support networks assisting you in this process its key you are all on the same page. The Eating Disorder is very good at dividing people especially on the issue of food.

Come up with some ground rules and a have a plan before entering meal times. If adjustments to the plan need to be made not to worry - just be sure to do it away from the child and come to a complete agreement with your partner before communicating the expectations. It may even be beneficial to plan ahead of time on how you are going to manage potential road blocks (food refusal, negotiation, and emotional outbursts) as a team.

The success to setting limits is when you can do it with consistently, firmness, and softness - something we call the “velvet hammer approach”. Just think - firm yet gentle when delivering your expectations while acknowledging the truth in your child's experience.

"I know this is difficult for you"
"You might be thinking we're making things worse"
"This is scary"

You don’t need to take away the pain, change their mind, or “fix” the problem, all you need to do is validate your child's feelings. This will leave them feeling understood and heard. Remember: feelings are always valid but they’re not always facts. You don’t need to argue if their thoughts or feelings are based on truth, but just reflect back to them what you think they might be feeling.

"I can see how scary this is for you and I'm not willing to compromise your health. You need to take your medicine – start with the first bite please."

With that said, DO NOT let the Eating Disorder derail the task at hand which is for your child to eat their food. Validate and get back to the task!
Here are some potential guidelines to think about when creating your own plan on how to set limits at meals to increase the chances of your child getting the nourishment their body needs and limiting the opportunities for the Eating Disorder to trick your child, or even you!

- You must portion out the child’s meal. No negotiations but if you are to swap out one item for another it should be of equal or more value in calories.

- The child is not to be involved in menu marking or meal preparation. Keep them out of the kitchen during the preparation to block the Eating Disorder’s need to control meals and decrease the likelihood of an outburst.

- Pick foods that will help reverse the effects of starvation and nourish your child back to health. If there is a starving person in the family they should have the largest portions at the table. Remember: you are not only making sure they get enough nutrition to sustain themselves throughout the day but also to reverse the damage to their body.

- Normalized foods at normalized times. Keep snack foods at snack times. Primary meals usually consist of three items/food groups with a drink that include calories like milk or juice. Water can be consumed between meals.

- 100% completion, pick a reasonable amount of food in a reasonable amount of time. Give the child a timeline, for example 15 minutes for snacks and 30-40 minutes for dinner. Make sure it’s feasible but most importantly challenges the status quo of the Eating Disorder.

- Encourage “normalized eating” which means all foods must be on one plate, at a table setting, regular sized utensils and proper utensils for eating certain foods, regular sized bites, and no unusual mixing or spices on food. For example, hiding the chicken in potato on the spoon or tainting the taste of food with too much salt or ketchup.

- We highly discourage parents from “sneaking” in calories into shakes or foods as this can cause undue trust issues and pro-long the re-nourishment phase. In order to support your loved one in recovery ideally everyone should have the same meal at the table. No more catering to the Eating Disorder!
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How to Support your Child with

100% Completion

Although 100% completion is suggested it’s important you focus on one bite at a time. Start off the meal with talking about non-illness or food related things. If you notice your child is struggling you may intervene quickly. Start off with the basics of getting the food on the utensil and to the mouth. Keep the conversation to the present moment and focus on the task. Validate their feelings and bring them back to what needs to happen next.

It’s often helpful if you can divert the conversation away from focusing on things like the caloric intake of the food, the texture, and perceived fatness as this is Eating Disorder’s tactic to distract you. Resist the urge to reason or convince your child of the nutritional value of the food, or say things like “It’s just a carrot” or “You’re not fat”. It may be helpful for another family member to offer some distraction from the food or their thoughts by listening to music, watching TV, telling jokes, or playing a game.

Although it may be tempting and seem to be effective at first we discourage you from entering into a reward or bargaining system to complete meals. For example, “If you finish the rest of your pasta then we can go for a walk”. Although this may add incentive in the beginning you will quickly end up in a cycle of bargaining that will only end up making your job harder.

Once the meal is completed its important the family orients on things outside of illness to bring a sense of normalcy and a break for everyone involved. It’s usually helpful to shift the mood and do something everyone enjoys. Many young people tells us it’s helpful if siblings or family distract them for at least 30 minutes after having a meal as the Eating Disorder thoughts tend to be most intense during this time.

Focus on **one** bite at a time! Start with the food on the utensil, and then to the mouth.

Resist the urge to bargain or reason with your child. **Validate their feelings**, and get back to the task.

Try to distract from thoughts of food with music, telling jokes, playing a game, or watching TV.

After the meal is completed, shift the mood and do something enjoyable as a family for about 30 minutes.
Taking Care of Yourself

Having a child in hospital can be very hard on you as a parent. Remember to take time to restore your own energy, and take care of your mental health. You will be able to provide much better support to your child if you are also well taken care of.

Here are some strategies to use to support your mental wellbeing during this stressful time.

Radical Acceptance

Acceptance means being willing to experience a situation as it is, rather than how you want it to be. When you utilize radical acceptance, you are repeatedly ‘turning the mind’ to be in the actual situation you are in, rather than the situation you think you’re in, or think you should be in. Your mind is always going to give you other ideas, interpretations, reminding you of old strategies.

Each time your mind wanders and you notice these other thoughts and images, simply bring your attention back to this moment. Not judging the situation to be good, or bad, or in any way. Simply bring your attention back to this moment, this situation, and be effective in this situation. You may need to ‘turn your mind’ many, many times in a short space of time.

What Radical Acceptance is NOT:
• Not judging the situation to be good
• Not giving permission for the situation to go on forever
• Not giving up your options

Radical Acceptance Coping Statements:
‘This is the way it has to be’
‘All the events have led up to now’
‘I can’t change what has already happened’
‘Fighting the past only blinds me to my present’
‘It is a waste of time to fight what has already occurred’
‘The present moment is here, even if I do not like what is happening.’
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Safe Place Visualization

Start each visualization with relaxation by getting comfortable in a quiet place where you won’t be disturbed, and take a couple of minutes to focus on your breathing. Close your eyes, then mentally scan your body and become aware of any areas of tension, and let that tension go with each out-breath.

- Imagine a place where you can feel calm, peaceful and safe. It may be a place you’ve been to before, somewhere you’ve dreamt about going to, or maybe somewhere you’ve seen a picture of.
- Focus on the colours in your peaceful safe place.
- Now notice the sounds that are around you, or perhaps the silence.
- Think about any smells you notice there.
- Then focus on any skin sensations - the earth beneath you, the temperature, and any movement of air, anything else you can touch.
- Now whilst you’re in your peaceful and safe place, you might choose to give it a name, whether one word or a phrase that you can use to bring that image back, anytime you need to.
- You can choose to linger there a while, just enjoying the peacefulness and serenity. You can leave whenever you want to, just by opening your eyes and being aware of where you are now.
- Finish each visualization by taking a few moments to bring yourself back into the room where you are, opening your eyes and looking around, sitting up, and bringing yourself back to alertness in the ‘here and now’.

Breathing Exercises

Take a deep, slow breath in and hold it for 5 seconds.

Feel your abdomen expand as you do this. Breathe out slowly, to a count of 5.

Breathe in again, make every breath slow and steady and exactly the same as the one before it and the one after it.

As you breathe out, concentrate on expelling ALL the air in your lungs. If you’re alone, you could make a noise like “whoosh” as you do this to help you feel the air being let out.

Keep the outbreath going for as long as you can.

Keep it relaxed for a few seconds before you inhale again.
Using the 5-4-3-2-1 technique, you will purposefully take in the details of your surroundings using each of your senses. Strive to notice small details that your mind would usually tune out, such as distant sounds, or the texture of an ordinary object.

- What are 5 things you can see? Look for small details such as a pattern on the ceiling, the way light reflects off a surface, or an object you never noticed.
- What are 4 things you can feel? Notice the sensation of clothing on your body, the sun on your skin, or the feeling of the chair you are sitting in. Pick up an object and examine its weight, texture, and other physical qualities.
- What are 3 things you can hear? Pay special attention to the sounds your mind has tuned out, such as a ticking clock, distant traffic, or trees blowing in the wind.
- What are 2 things you can smell? Try to notice smells in the air around you, like an air freshener or freshly mowed grass. You may also look around for something that has a scent, such as a flower or an unlit candle.
- What is 1 thing you can taste? Carry gum, candy, or small snacks for this step. Pop one in your mouth and focus your attention closely on the flavors.
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Additional Resources

Websites

- Calgary Silver Linings Foundation
  www.silverliningsfoundation.ca
  403-536-4025

- Eating Disorder Support Network of Alberta
  www.edsna.ca

- NEDIC - National Eating Disorder Information Centre
  www.nedic.ca

- FEAST - Families Empowered and Supporting Treatment of Eating Disorders
  www.feast-ed.org

- The Dove Self-Esteem Project
  www.dove.com

- Ellyn Satter Insitute
  www.ellynsatterinstitute.org

- Maudsley Parents
  www.maudsleyparents.org

Books

- Help Your Teenager Beat an Eating Disorder, by Lock and LeGrange

- 8 Keys to Recovery from an Eating Disorder, by Costin and Grabb

- Life without ED, by Jenni Schaefer

- Brave Girl Eating, by Harriet Brown

- Body Image Workbook, by Thomas Cash


Workbooks

- CCI Centre for Clinical Interventions - free workbooks
  www.cci.health.wa.gov.au

Meal Support

www.keltyeatingdisorders.ca/recovery/meal-support/

Emergency Resources

- Kids Help Phone
  1-800-266-4357

- Calgary Distress Centre
  403-266-4357

- Calgary Communities Against Sexual Assault
  403-237-5888

- Emergency Social Services
  403-297-2995
APPENDIX C: INPATIENT MRP GUIDE

Sections of Hospital Pediatrics and Adolescent Medicine – Model of Care for Patients with Eating Disorders Admitted to Alberta Children’s Hospital – Working Document

General description of Inpatient Needs and Targeted Patient Population:
This document describes the roles for the different physician teams involved when patients diagnosed with an Eating Disorder are admitted to hospital at Alberta Children’s Hospital (ACH).

There are often 2 identified phases of inpatient care for this patient population: Phase 1 - initial medical stabilization and re-feeding and Phase 2 - ongoing nutritional rehabilitation and weight restoration. Both phases can be supported in a tertiary level Pediatrics inpatient setting. The nature of the disorder also encompasses significant psychological and psychiatric components to care. This often requires some support during the initial inpatient stay but is limited in its effectiveness due to starvation effects on the brain. Once the brain is re-nourished, the psychological components of the illness can be more effectively addressed. While treatment may begin with medical stabilization as a first step, addressing the psychological components of an eating disorder usually occurs in the context of ongoing, prolonged, intensive treatments from an interdisciplinary team in the outpatient setting and is not the primary goal of inpatient medical stabilization.

Patients diagnosed with an Eating Disorder often present with very restricted caloric intake over weeks to months and associated physiologic changes such as: decreased heart rate, abnormal blood pressure, lower body temperature, dehydration, and electrolyte abnormalities that place them both at imminent risk based on their current status, or induced risk upon initiation of increased caloric intake (the latter which is necessary for their recovery). At times, the risk is too great to be managed as an outpatient, and inpatient stabilization is required. These parameters have been outlined in the ACH Inpatient Guide for the Management of Adolescents with Feeding and Eating Disorders, December 2020 (see main CPG document).

Any patient diagnosed with an Eating Disorder requiring admission to hospital due to physiologic derangements will be admitted to one of the Hospital Pediatric teams given the potential for an acute event. During this phase of care (Phase 1), the patient will be placed on continuous monitoring, undergo blood work and medical assessments as per the main CPG document.

If a patient is admitted primarily due to the psychologic/psychiatric component of their illness, it is recommended that the patient be admitted to a mental health bed under Child and Adolescent Psychiatry services.

For patients admitted with physiologic derangements, medical stabilization generally occurs over the first few weeks of hospitalization. After this phase, the hospitalization may remain prolonged primarily to allow for nutritional rehabilitation and weight restoration (usually close to or at 80% of Ideal Body Weight) as well as to assess and coordinate family and patient readiness for outpatient programs (Phase 2).

Given the expertise of the various physician providers involved in the care of this patient population, there are times where Most Responsible Physician (MRP) status is most appropriate for each of Hospital Pediatrics, Adolescent Medicine or Child and Adolescent Psychiatry. This document will focus only on the MRP
Guiding Principles in Caring for Hospitalized Patients with Eating Disorders and Medical Needs:

- Patients who meet criteria for Hospitalization for medical stabilization should be admitted to Hospital Pediatric teams – whenever possible to Red Team. These patients should require active cardiorespiratory monitoring, regular investigations (blood work, ECG, other) and daily medical assessments. This part of the patient admission is referred to as Phase 1 to indicate a period of relative instability and need for frequent monitoring/assessment.

- At the time of admission, a consult will be made to Adolescent Medicine.

- Once their consult is completed, the Adolescent Medicine consultant will arrange for a meeting between themselves and Hospital Pediatrics MRP at or close to 1 week after admission. This will be facilitated by the Adolescent Medicine administrative assistant and a text page with the meeting time/date will be sent to pager 14001 (Red Team pager). Using AHS email, an email will also be sent to the attending physician on Red Team as well as other members of the Eating Disorder team (including dietician involved and family therapist that will connect with the patient and family) in order to ensure transparency amongst all care providers and a method for communication given that Adolescent Medicine/Eating Disorder team may not always be onsite. The primary goals for this meeting are to determine:
  - Medical progress (review of vital signs, weight, biochemistry, consideration of alternate medical diagnoses)
  - Anticipated disposition/ duration of hospitalization (often determined by medical stability plus method of therapy to be utilized – i.e. Family-Based Therapy vs. "routine" therapy vs. need for psychiatric inpatient support vs transfer to a designated inpatient program if patient meets criteria)
  - MRP designation

This meeting will take place in the Consult Room on the unit the patient is admitted to (usually Unit 4). Eating disorders allied health providers (RD, therapists, other) are welcome to attend this meeting and provide input into the above-stated areas for discussion as needed.

- If the patient has been able to advance caloric intake while maintaining normal electrolyte levels/no biochemical evidence of re-feeding syndrome, normalized orthostatic HR and BP parameters and overnight HR>45, the patient is eligible to move to Phase 2 of the hospitalization during which the focus is on nutritional rehabilitation and weight restoration. At this point if Adolescent Medicine and Hospital Pediatrics agree that the patient would benefit from a Phase 2 admission as opposed to discharge or transfer to another facility, MRP designation shall be transferred to Adolescent Medicine. This transfer of care should occur if it is anticipated that the patient will remain in hospital for > 3 days. If discharge or transfer to another facility is expected to occur in </=3 days from the time of determination of movement to Phase 2, the patient shall remain under Hospital Pediatrics as the MRP in order to more easily facilitate discharge. If the patient remains unstable at the time of the first meeting, the Hospital Pediatric and Adolescent Medicine teams will determine appropriate timing to re-group to assess readiness for Phase 2.
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- During the phase of nutritional rehabilitation and weight restoration (Phase 2), the patient should be classified as Alternate Level of Care (ALC). ALC designation denotes that (i) the patient’s condition is stable such that they require once-to-twice weekly physician visits, and (ii) if an alternate appropriate location for care existed, care could occur outside of a tertiary/acute care facility. The requirement for inpatient care during this phase of care is less reliant on medical assessments and risk for acute decompensation, and more on intensive nursing monitoring during meals, bathroom use, and activity, as well as every 1-2 day review by a dietician throughout the hospital admission. Family and patient therapy, while important, remain secondary goals during this phase of care and would not in and of themselves generally necessitate hospitalization (unless there is imminent risk of harm to the patient or others, in which case, care would be provided by Child and Adolescent Psychiatry. This is out of the scope of this guide).

- The Section of Adolescent Medicine service model does not encompass work after-hours or on weekends. Support to both Adolescent Medicine specialists and to patients with Eating Disorders transferred off Hospital Pediatrics teams will be provided by Hospital Pediatrics teams. Adolescent Medicine’s role as MRP at this phase of the admission relates primarily to monitoring nutritional rehabilitation and weight restoration, discharge arrangements, and outpatient care coordination. Hospital Pediatrics will act as consultants for all acute medical concerns at any time of day or night. During the weekdays 0800-1700, Adolescent Medicine is the first call for all concerns, and they may page Hospital Pediatrics if a medical concern arises. After 1700 weekdays and on weekends, Hospital Pediatrics will be first call for all medical issues that arise. If the concern is of a psychological nature, the issue will be deferred until the Eating Disorder Therapist or Adolescent Medicine physician is next available.

- Once the MRP role has been transferred from Hospital Pediatrics to Adolescent Medicine, should an acute medical issue arise after 5pm on weekdays or on weekends, Hospital Pediatrics will initiate interventions as deemed appropriate and without consultation with or approval by Adolescent Medicine.

- Hospital Pediatrics teams will maintain a health record separate from Adolescent Medicine. Adolescent Medicine is expected to dictate a consultation note and write hospital notes either in the chart or electronic medical record (EMR) while the MRP is hospital pediatrics. Once transfer of care occurs, Hospital Pediatrics team will complete a transfer note that summarizes and signs off on their care to date. Given the limitations of EMR, this will take the form of an Inpatient Consult note. Adolescent Medicine will not be expected to add to this document or summarize Hospital Pediatrics care prior to transfer to Adolescent Medicine. Adolescent Medicine will be responsible for documentation of Phase 2. The discharge summary will refer to Phase 1 care under Hospital Pediatrics but will primarily pertain to Phase 2.

- Please refer to Figure 1 at the end of this document for this model of co-management.

- It is recognized that the provision of medical care to this population may trigger “psychological activation” for either/both patient and/or family. This is an expected reaction to the treatment and hospitalization. Addressing these issues is not the primary goal of the admission and as such, the medical team should not feel obligated to treat or actively manage this. While acknowledging and validating that the patient’s/family’s reaction is important, it does not need to be time-consuming. An appropriate response might be: “This Eating Disorder is really challenging. Your response is one that is often seen and is normal given what you are going through. Your therapist will be able to help you with this. I will ensure they know about these concerns”.

Developed by: Dr. April Elliott, Adolescent Specialist; Dr. Ellie Vyver, Adolescent Medicine

Last Updated: April 2021
- As with all guidelines in clinical medicine, these criteria should be used as a general guide rather than as definitive rules. Each case must be approached individually, and the expertise and experience of each clinician involved should be respected and taken into consideration.

Dispute Resolution
This guide is a joint collaboration between the Sections of Hospital Pediatrics and Adolescent Medicine with oversight from the Department Deputy Head of Clinical Affairs. The goals are to improve efficiencies and care delivery and maximize the expertise and scope of all physicians providing care to inpatients.

The primary responsibility for arranging disposition rests with the current attending physician. With this patient population, the Hospital Pediatrician will initiate transfer of patients with Eating Disorders requiring ongoing nutritional rehabilitation. In the event that difficulty arises in determining disposition, the case should be referred to both the Hospital Pediatric and Adolescent Medicine Section Chiefs. If resolution still cannot be achieved, the Pediatric Department Head or Deputy Head for Clinical Affairs shall become involved.
Figure 1:

Flow diagram for Model of Care for Patients with Eating Disorders Admitted to ACH

Phase 1

- Admit to Hospital Pediatrics (HP)- Preferably Red Team
- Adolescent Medicine (Adol Med) Consulted
- Adol Med admin assistant will text page 14001 with meeting date and time and email will also be sent to HP MRP
- Meeting occurs to determine progress, medical stability, ability to move to Phase 2
- If Patient not ready to move to Phase 2 - next meeting to be determined

Phase 2

- Patient Ready for Phase 2

- Patient Likely to be discharged or Transferred within 3 days?
  - MRP remains HP
  - MRP transfers to Adol Med

- Patient Likely to remain at ACH > 3 days?
  - HP to summarize Phase 1 of admission in the EMR as an "Inpatient Consult". This will serve as the Transfer Note
  - HP to enter a Clinical Communication order in the EMR "Patient in Phase 2 of admission and is designated as ALC"
  - Adol Med to enter “Consult MD” order in the EMR for HP to manage acute medical issues that arise
  - HP or Adol Med to enter clinical communication: "Adol Med is first call for all concerns Mon- Fri 0800-1700. For after hours and weekend issues first call is the HP team which can be reached by paging 01652.

1 Refer to ACH Inpatient Guide for the Management of Adolescents with Feeding and Eating Disorders December 2020 main document

2 Phase 2 is determined by: advancement of caloric intake, normal electrolytes, normalized vital signs (first AM orthostatic HR changes may still be present, but other orthostatic vitals during the rest of the day have normalized), overnight HR = 45 for a minimum of 48 hours.