Pediatric Eating Disorders Resource Package

10-040-6205 (WRD Rev. 01/17)

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Disclaimer

This is a guideline for health care professionals to support those working with children and adolescents in the medical management of Eating Disorders. The information provided is based on evidence-based care for treatment and diagnosis for Pediatric Eating Disorder patients. The guidelines specified are in context to community and inpatient management have been derived through the British Columbia's Centres in Excellence in Eating Disorders, the Provincial Health Services Authority (PHSA) in conjunction with BC Mental Health & Addiction Services, Providence Health Care, Division of Adolescent Medicine and the Provincial Specialized Eating Disorders Program for Children and Adolescents at the BC Children's Hospital.

This package has been compiled and reviewed by various professionals, working groups and stakeholders across Northern Health who share a commitment with all parties involved to assist with standardizing the delivery of care for the management of inpatient Pediatric Eating Disorder Patients and their Families across Northern Health. This information is for stabilization purposes only and does not supersede tertiary level services that may be required for further follow up care, consultation and assessment purposes required for pediatric patients with eating disorders. Supplementary information has been provided in context to support the information provided, however; we encourage continued evidence based sources to be accessed accordingly to each individuals care. It is up to the attending health care provider to seek out additional support and assistance as needed in order to continue to support individuals and families in their care.

The information in this guide can be accessed through Our NH at:
https://ournh.northernhealth.ca/oursites/clinical/NrthRegEatingDisProg/Pages/default.aspx

Or by phoning the Northern Regional Eating Disorders Clinic at 250-565-7479.

Understanding the Importance of Identifying Children and Adolescents at Risk for an Eating Disorder

Statistics at a Glance:

"Eating disorders (EDs) are serious mental illnesses with significant, life-threatening medical and psychiatric morbidity and mortality, regardless of an individual's weight." (American Academy of Eating Disorders, 2012 p. 4)

Eating Disorders can impact any individual regardless of their age, gender, race, or ethnicity. Ds not only impact the individual, these disorders impact the entire family unit and reach every aspect of an individual's life in a very negative and consequential manner that can impede a person's physical, mental and spiritual well-being and development. (BC Ministry of Health Services, 2010).

Anorexia Nervosa (AN), in particular, has the highest mortality rate of any psychiatric disorder. Risk of suicide can increase up to 57 times higher for women with Anorexia when compared to women of similar age within the general population and an overall risk of premature death increases dramatically. The two most common causes of death for individuals with Anorexia are from suicide or from the direct effects of starvation. (Evans, D.L et al, 2006). Within British Columbia, the mortality rate for women suffering from Anorexia is 15 times higher than women of the same age within the general population. (British Columbia Ministry of Health Services, 2010).

Co-occurring conditions are common for individuals with eating disorders such as substance use disorders, anxiety, depression, obsessive compulsive disorder and amongst adults, personality disorders. These co-occurring conditions may develop prior to the eating disorder or at the same time as an eating disorder. Reports estimate that 59% of individuals with Bulimia Nervosa (BN) and 80% of individuals with AN experience a major depressive episode at some point in their lives. (Gadalla T, Piran N, 2008).

Evidence shows development of eating disorders typically occurs during early adolescence and if left untreated an eating disorder can carry into adult hood and can cause many ongoing co-morbid health conditions for individuals leading to decreased healthy outcomes and an increased burden on the health care system. Reports from Statistics Canada 2008 survey estimates that approximately 55,432 British Columbians aged 15 years and older are at risk for developing an eating disorder. (British Columbia Ministry of Health Services, 2010).

In 2008, it was estimated that 52,187 females and 5,267 males living in British Columbia aged 10-54 years were living with a clinically diagnosed ED. (Stats Canada, 2008) More specifically in Northern BC as of 2010, the estimated number of individuals with AN or BN in one year for all age ranges (0-65+) were 1,050 from a population total of 288,569. (Harrison, A., 2013). Although the number of individuals diagnosed with an ED within the general population is small, the overall burden of this illness is profound and more evidence is emerging that numbers for EDs are steadily on the rise.

"EDs can cause intergenerational consequences, medical complications, premature death, long-term disability, acute care utilization, costly treatment interventions, indirect costs lost from school, employment, activity and an overall decreased quality of life." (Action Plan for Provincial Services for People with Eating Disorders, 2010 BC Ministry of Health Services, p. 20-21)

DSM-V Feeding & Eating Disorders: Identifying Gaps in Care

The difference between the DSM-IV and DSM-V categories for Feeding & Eating Disorders is quite apparent as diagnostic criteria have changed greatly between the two versions. DSM-V has been able to identify many disordered eating habits that would be typically not be categorized using the previous DSM-IV criteria and essentially this population gap would have left these patients and families with little resources to turn to as they were not being recognized by health care professionals, specifically in younger children, boys and minority groups. (Campbell & Peebles (2014). This change in diagnostic criteria has also provided more insight into the population gaps and lack of resources for those individuals who live with significant EDs including Rumination Disorder, Pica, Binge Eating Disorder (BED) and Avoidant/Restrictive Food Intake Disorder (ARFID) in particular. (Kenney & Walsh, 2013)

In one study, ARFID patients who were identified were significantly underweight and had a longer duration of illness and greater prevalence of co-morbid medical and psychiatric issues when compared to other patients diagnosed with AN or BN. (Fisher, et al., 2014.)

BED has some of the highest prevalence rates of any ED and is associated with many co-occuring illnesses including but not limited to, depression, post-traumatic stress disorder, and attention-deficit/hyperactivity disorder, self-harm and suicidal ideation. Medical comorbidities is high in this population with features associated with obesity such as heart disease, diabetes mellitus, osteoarthritis, sleep impairment, menstrual dysfunction, liver and gall bladder diseases. (Tsappis, Freizinger & Forman, 2016).

There are more and more emerging reports and population presentations across the province, Canada and worldwide identifying these diagnosed EDs and the lifespan health issues that can arise from these disorders. We may also see a higher increase of diagnosed individuals with all EDs given the change in diagnostic criteria that would normally see most presentations of EDs to be diagnosed with Eating Disorders Otherwise Not Specified (EDNOS). The research remains limited in some areas however; this is a new and exciting area of development for researchers and health care professionals alike.

Important Facts about Eating Disorders

(Below excerpt taken from, *Eating Disorders: Critical Points for Early Recognition and Medical Risk Management in the Care of Individuals with Eating Disorders 2012 developed by the Academy for Eating Disorders AED page.*)

- Eating disorders are serious disorders with life-threatening physical and psychological complications.
- In addition to girls and women, EDs can affect boys and men; children, adolescents and adults; people from all ethnicities and socioeconomic backgrounds; and people with a variety of body shapes, weights and sizes.
- Weight is not the only clinical marker of an ED. People who are at normal weight can have EDs.
- It is important to remember that EDs do not only affect females at low weight. All instances of precipitous weight loss in otherwise healthy individuals should be investigated for the possibility of an ED, including post-bariatric surgery patients. In addition, rapid weight gain or weight fluctuations can be a potential marker of an ED.

- Individuals at weights above their natural weight range may not be getting proper nutrition and patients within their natural weight range may be engaging in unhealthy weight control practices.
- In children and adolescents, failure to gain expected weight or height, and/or delayed or interrupted pubertal development, should be investigated for the possibility of an ED.
- The medical consequences of EDs can go unrecognized, even by experienced clinicians.
- Eating disorders (including BED) can be associated with serious medical complications. Eating disorders can be associated with significant compromise in every organ system of the body, including the cardiovascular, gastrointestinal, endocrine, dermatological, hematological, skeletal, and central nervous system.

Key Guidelines:

Early recognition and timely intervention, based on a developmentally appropriate, evidence-based, interprofessional team approach (medical, psychological & nutritional), is the ideal standard of care, wherever possible. Members of the interprofessional team may vary and will depend upon the needs of the patient and the availability of these team members in the patient's community. In communities where resources are lacking, physicians, clinicians, therapists, and dietitians are encouraged to consult with their local regional team for further support and services. (AED, 2012).

Within Northern Health, the Regional Eating Disorders Clinic provides outpatient support within Prince George and consultative services outside Prince George spanning the entire Northern Health Authority Region. The regional team can also provide support for inpatient admission referrals to BC Children's Provincial Eating Disorders Program for Children and Adolescents, Looking Glass Residential Centre for Young Adults and St Paul's Inpatient Eating Disorder Program/Discovery Vista Adult Residential Centre for Eating Disorders. Contact information for the Regional Eating Disorders Clinic is: 250-565-7479

Key Principles

(Below excerpt taken from the Executive Summary from the Ministry of Health Services: Clinical Practice Guidelines for the BC Eating Disorders Continuum of Services 2012).

Four key principles have been derived from current empirical evidence and expert clinical opinions that are emphasized throughout these guidelines. These are considered critical to addressing some of the unique challenges inherent in working with this patient population, namely high rates of treatment refusal, dropout and relapse, the need to monitor and address complex medical factors, and the unique needs of children and adolescents. The principles include:

1. **Relationships Matter**: A strong therapeutic alliance with patients and their families is critical across the continuum of care.
2. **Matching Level of Care to Patients:** In order to be cost-effective and responsive, services must be tailored to relevant patient characteristics at each level of care.
3. **Managing Medical Factors:** Primary Care Physicians play a key role in eating disorders identification and treatment across the continuum of care and medical acuity needs to be effectively managed when inpatient admissions are required.

4. **Care Across the Developmental Spectrum:** The unique social, psychiatric and medical needs of children, adolescents and adults must be addressed at all stages of treatment.

Access Manual Online: http://www.bcmhsus.ca/resources/guidelines-and-protocols

Eating Disorders:

For the purpose of this document, eating disorders (EDs) have been identified through the DSM 5 – under Feeding and Eating Disorders Categories, which include:

1. Anorexia nervosa (AN), restrictive and binge/purge subtypes
2. Avoidant/Restrictive Food Intake Disorder (ARFID)
3. Binge Eating Disorder (BED)
4. Bulimia Nervosa (BN), purging and non-purging types
5. Other Specified Feeding or Eating Disorder
6. Pica
7. Rumination Disorder

Consult www.aed.org or the current DSM or ICD-10 for full description.

Overview of Care for Children and Adolescents with Eating Disorders

EDs are complex and challenging psychiatric conditions that serve the child or adolescent with a maladaptive coping strategy. It is tied strongly to the child's sense of control, safety, power, identity and self-worth. An ED functions as a means to help manage painful emotions or trauma one has experienced and it can become a very reliable and dependable friend. Some patients may be acutely ill and may be quite ambivalent in regards to their understanding of their current health status. Families may also be unaware as to the magnitude of how ill their child is because they still may be engaging in all of their usual activities. All of these factors can compound together and allow EDs to be quite difficult to manage and treat at times. In order to combat an ED, a practitioner must learn to establish the following (Based upon Clinical Care Guidelines for ED's, Ministry of BC, 2012):

1. **Identifying Determinants of Health:** identifying any barriers to health or engagement can help improve access to care, treatment, support, care and healthy outcomes to the child, adolescent and their family.

2. **Establishing a Therapeutic Alliance:** building a strong therapeutic alliance through acknowledgement and validation will assist with communication, treatment planning, goal setting and ongoing engagement with the family and the patient.

3. **Working with the Family and Patient towards Readiness:** providing ongoing education, support and resources will ensure the family and patient are well-informed and aware of their child's current health condition and the treatment required for early intervention which will lead to healthier outcomes. A harm reduction approach set with clear therapeutic boundaries will help to solidify the therapeutic alliance and engagement process.

4. **Motivational Interviewing:** this treatment can be used in all aspects of care and within all treatment models. This is an effective approach to engage and support change with patients and families who may be ambivalent about change. This therapeutic is a non-judgemental approach, and utilizes empathy and reflective listening skills. This approach helps to invoke curiosity within the patient, allowing them to work towards identifying their own solutions.

5. **Therapeutic Boundaries & Treatment Non-Negotiables:** this assists with balancing a therapeutic alliance with clear boundaries in order to maintain patient safety and effectively utilize intensive treatment resources. Clear communication needs to be ongoing and the practitioner must work with the parent to lead boundary setting and support and coach the parents as needed. Providing education, rationale and support surrounding the non-negotiable of treatment, being consistent, providing ample warning to any consequence, maximizing patient autonomy and remaining collaborative are all effective characteristics of therapeutic boundary setting.

6. **Collaborative Care, Team Work & Role Clarity:** this creates clear communication, appropriate referrals, solidifies therapeutic boundaries and consistency for the patient and their families.

7. **Family & Caregiver Engagement:** families play a key role in the recovery of an ED. The level of care and nature of involvement will differ based on the patient's development status and the level of family function.

Early Recognition & Signs and Symptoms of Eating Disorders

Individuals with EDs may present in a variety of ways. In addition to the cognitive and behavioral signs that characterize EDs, the following are possible physical signs and symptoms that can occur in patients with an ED as a consequence of nutritional deficiencies, binge-eating, and inappropriate compensatory behaviors, such as purging. However, an ED may occur without obvious physical signs or symptoms and further assessment may be warranted.

GENERAL: • Marked weight loss, gain or fluctuations • Weight loss, weight maintenance or failure to gain expected weight in a child and adolescent who is still growing and developing • Cold intolerance • Weakness • Fatigue or lethargy • Dizziness • Syncope • Hot flashes, sweating episodes	**GASTROINTESTINAL:** • Epigastric discomfort • Early satiety, delayed gastric emptying • Gastroesophageal reflux • Hematemesis • Hemorrhoids and rectal prolapse • Constipation • Acute pancreatitis • Acute abdomen e.g. gastric perforation • **Vomiting** food/Choking on food **behaviours** • Food intolerances
NEUROPSYCHIATRIC: • Seizures • Memory loss/Poor concentration • Insomnia • Depression/Anxiety/Obsessive behavior • Self-harm • Suicidal ideation/suicide attempt	**DERMATOLOGIC:** • Lanugo hair • Hair loss • Yellowish discoloration of skin • Callus or scars on the dorsum of the hand (Russell's sign) • Poor healing
ENDOCRINE: • Amenorrhea or irregular menses • Loss of libido • Low bone mineral density and increased risk for bone fractures and osteoporosis • Infertility • Hypoglycemia • Unexplained weight loss in Type 1 diabetic, diabetic ketoacidosis	**ORAL & DENTAL:** • Oral trauma/lacerations • Dental erosion and dental caries • Perimolysis • Parotid enlargement
CARDIORESPIRATORY: • Chest pain • Heart palpitations • Arrhythmias • Shortness of breath • Edema • Aspiration Pneumonitis • Orthostatic hypotension • Mediastinal air • Bradycardia • Electrolyte Abnormalities	**PSYCHOLOGICAL:** • Body image distortion • Pursuit of thinness • Fear of fatness or obtaining/maintaining normal weight • Extreme fitness or excessive exercising • Family history of eating disorders • Substance misuse for weight loss purposes • Use of supplements for nourishment Source: **Academy for Eating Disorders: WWW.AEDWEB.ORG (2012).**

Screening Tools for Eating Disorders

There are various tools for practitioners to use when screening for EDs. There are similarities between all of them and each assist the user to gather information that will either necessitate further follow up or to monitor a patient's current presentation. Screening patients regularly will help practitioners provide early intervention and preventative steps towards a developing ED, leading to higher rates of recovery and potentially decreasing any co-morbid conditions associated with EDs.

The two screening tools outlined in this package are two commonly used tools that practitioners have been utilizing that are widely evidenced based worldwide, as a gold standard for screening purposes only. Further subjective and objective assessments will be necessary in order to properly diagnosis a patient with an ED based on DSM-5 or ICD-10 criteria for an ED. Please refer the Regional Eating Disorders Clinic for further evaluation, recommendations for follow up investigations or for further treatment planning purposes at 250-565-7479.

The SCOFF Questionnaire

The SCOFF Questionnaire is a five-question screening tool designed to clarify suspicion that an eating disorder might exist rather than to make a diagnosis. The questions can be delivered either verbally or in written form and have been used in both adolescent and adult populations.

S – Do you make yourself *Sick* because you feel uncomfortably full?

C – Do you worry you have lost *Control* over how much you eat?

O – Have you recently lost more than 6.35 kg or 14 pounds in a three-month period?

F – Do you believe yourself to be *Fat* when others say you are too thin?

F – Would you say *Food* dominates your life?

An answer of 'yes' to two or more to the above questions warrants further questioning and a more comprehensive assessment.

These following questions indicate a need for further questioning and discussion as these two questions have been shown to indicate a high sensitivity and specificity for bulimia nervosa and binge eating disorder:

1. Are you satisfied with your eating patterns?
2. Do you ever eat in secret?

Reference: Luck, A.J., Morgan, J.F., Reid, F., O'Brien, A., Brunton, J., Price, C., Perry, L., Lacey, J.H. (2002), 'The SCOFF questionnaire and clinical interview for eating disorders in general practice: comparative study', British Medical Journal, 325, 7367, 755 - 756.

Eating Attitudes Test (EAT-26 & EAT-40) ©:

This is a screening measure used to determine if individuals require further follow up with a professional source in order to assess and diagnose if they have an eating disorder. It is a standardized tool used to self-report symptoms and concerns characteristic for ED's for individuals of both adolescent and adult populations. This screening tool is currently being utilized on the Adolescent Psychiatric Unit at the University Hospital of Northern British Columbia. For further information on this screening measure, please visit: **http://www.eat-26.com/** and request permission for use of same. There are two tests available, the EAT-26 and EAT-40.

Sample Version of Questionnaire:

***Instructions**: This is a screening measure to help you determine whether you might have an eating disorder that needs professional attention. This screening measure is not designed to make a diagnosis of an eating disorder or take the place of a professional consultation. Please fill out the form below as accurately, honestly and completely as possible. There are no right or wrong answers. All of your responses are confidential.*

Part A: Requests the individual's current and historical height and weight, gender and age.

Part B: Check a response for each of the following statements: Always: Usually: Often: Sometimes: Rarely: Never:

1. I am terrified about being overweight.
2. I avoid eating when I am hungry.
3. I find myself preoccupied with food.
4. I have gone on eating binges where I feel that I may not be able to stop.
5. I cut my food into small pieces.
6. I am aware of the calorie content of foods that I eat.
7. I particularly avoid food with a high carbohydrate content (i.e. bread, rice, potatoes, etc.)
8. I am aware that others would prefer if I ate more.
9. I vomit after I have eaten.
10. I feel extremely guilty after eating.
11. I am occupied with a desire to be thinner.

Above excerpt taken from: Eating Attitudes Test (EAT-26). http://www.eat-26.com/ Copyright © 2009-2016. The EAT-26 has been reproduced with permission. Garner et al. (1982). The Eating Attitudes Test: Psychometric features and clinical correlates. Psychological Medicine, 12, 871-878

New Screening Assessment Tool: Eating Disorders in Youth – Questionnaire (EDY-Q)

This is a new tool developed to assess and screen for early-onset restrictive eating disturbances in children aged 8 to 13 years old via self-report. The EDY-Q lists fourteen items, twelve of which cover ARFID criteria and symptoms and possible variants. The other two items address Pica and Rumination Disorder. As mentioned earlier, there is a new classification of Feeding and Eating Disorders in the DSM-V and this tool may help practitioners with identifying populations with these particular EDs.

Sample Version of Questionnaire

1. If I was allowed to, I would not eat
2. Food/eating does not interest me.
3. I do not eat when I'm sad, worried, or anxious
4. I am a picky eater.
5. I do not like to try new food.
6. I am afraid of choking or vomiting while eating.
7. I like to eat things that are not meant for eating (e.g., sand).
8. I regurgitate food that I have already swallowed.

The participants rate these statements and others between the ranges of "never true to always true". The creators recommend reading the statements and providing clarification for young children. There are limited studies and research related to this tool at this time however, it can at least assist with guiding the practitioner with some thought processes and challenges that this new emerging population may be experiencing to assist with further treatment and care planning purposes. It would also be prudent for more research to be completed around this tool for validity purposes. The creators have provided free-use of this material in a non-commercial manner.

Cited Source for above materials:

Hilbert, A., & van Dyck, Z. (2016). Eating Disorders in Youth-Questionnaire. English version. University of Leipzig: http://nbn-resolving.de/urn:nbn:de:bsz:15-qucosa-197246.

Primary Care Providers Assessment and Management Guidelines for Patients with Eating Disorders

The Primary Care Physician (PCP) or Nurse Practitioner (NP) plays a key role in supporting patients and their families with eating disorders. Primary Care providers can assist with screening, early intervention, medical monitoring, consultation and treatment planning. Within Northern Health there are many rural and remote communities with limited access to specialized care, in which PCPs or NPs can bridge that gap and provide medical continuity and stabilization as a component to their care. (BC Ministry of Health, 2012).

Primary Care Homes are increasing across Northern Health and the Primary Care provider can seek out additional services from within these care homes such as mental health, nutritional, occupational and nursing support in order to provide more wrap around services and have the ability to link to higher service levels of care for more intensive services that may be required.

It is recognized that there are barriers to providing care for patients with EDs. The complexity and acute nature of some of these illnesses can be quite astounding and can be very overwhelming for parents whose children are suffering with an ED. There is a lack of specialized services in rural areas and the burden falls upon the generalists to provide that care to the patient and their families. This can lead practitioners to often feel left unsupported when caring for a pediatric patient with an ED. (Lafrance Robinson, Boachie & Lafrance, 2013).

The four basic components of pursuing treatment with an individual who has an ED or suspected ED is:

1. **Medical Stabilization:** Initially address the acute concerns. Assessment Framework includes assessing for hydration status, temperature control, bio-chemical abnormalities (blood work), cardiovascular health (assessing ECG abnormalities), body mass calculation, muscular weakness and addressing any other medical concerns.

2. **Psychiatric Stabilization:** Initially address the acute safety concerns. For example suicidal ideation and assessing self-harming behaviours (including cutting, burning, substance use, purging or restricting food intake) and suicidal ideation.

3. **Nutritional Stabilization:** Assess and establish the re-introduction of nutrition. Premise is “food is medicine” for treatment for Pediatric patients who are nutritionally compromised. Avoid underfeeding and if admitted a week-long admission will help to mitigate risk for re-feeding syndrome.

4. **Psychosocial Rehabilitation:** Assess and establish family dynamics, supports and resources to address and assist with ongoing medical, psychiatric, emotional and spiritual well-being.

   Raising awareness to the patient about the need for medical stabilization and monitoring can help bring awareness to the patient and their families into their children’s condition and how the ED is physically impacting them and how that in turn impacts their emotional, psychological and spiritual well-being. Since EDs have some of the highest rates of suicide and high prevalence rates for co-occurring disorders, it is prudent to assess and stabilize their psychiatric status as well. This builds on the key principles when caring for a patient with an ED.

Please refer to Appendix A: Pediatric Medical Assessment for Eating Disorders to assist with assessing and diagnosing an individual with a suspected or known ED.

(Source: Clinical Practice Guidelines for the BC Eating Disorders Continuum of Services, 2012 BC Ministry of Health & Dr. Pei-Yoong Lam, Assessment Framework for Medical Risks Module 3 – Medical Diagnosis and Management, 2014)

Important Note: Please refer to Pediatrician on call if patient is medically compromised or Psychiatry on call or Emergency Room Physician if there are any safety concerns. Please refer to BC's Provincial Community Hospital Protocol & Guidelines for assessment criteria. This criteria will be reviewed in the next section.

BC's Provincial Community Hospital Protocol for Pediatric Patients Review

British Columbia is the only province across Canada who has a standardized Provincial Protocol for Community Hospitals for Pediatric patients who present to EDs. This framework can assist Primary Care providers with understanding the medical complications, monitoring and support needed to care for a Pediatric patient with an ED. These guidelines will be reviewed on the following pages.

The protocol was designed to treat the majority of pediatric patients presenting to the emergency department with various complaints with an underlying ED. These materials cannot replace careful clinical observation and judgement when treating these very serious conditions. If you have questions related to the management of pediatric patients with ED's, please contact your Pediatrician on-call in your designated area, the Northern Regional Eating Disorders Program at 250-565-7479 or Adolescent Medicine Physician On-Call at BC Children's Hospital through switchboard at 604-875-2345. The intake coordinators phone number for the BC Children's Inpatient ED Program is 604-875-2106. (PHSA, Pediatric Eating Disorders BC's Provincial Community Hospital Protocol, 2013)

Reasons for Emergency Room Presentations:

- Patient referred by parent or a professional for diagnostic clarification or concerns regarding child or adolescent's current health status.
- Diagnosis made or suspected in emergency when patient has presented with a complication of the eating disorder e.g. amenorrhea, syncope etc.
- Known patient with acute crisis – physical or psychiatric.
- New patient presenting with acute concerns regarding current health state.

Relevant Features on History: **(please refer to Appendix A for assessment instrument)**

- **Weight:** Date of and premorbid weight; date of and minimum weight reached; current weight; duration, onset of weight loss, underweight (calculate age percentiles)
- **Diet:** Recent pattern of 24hour dietary intake; estimate calories taken per day (if possible) and note if calorie counting; fluid intake; idiosyncratic nutritional issues (e.g. food phobias and avoidance of specific food groups), fluid or food refusal, water loading and intoxication.
- **Activity/Exercise:** Time spent doing sport/training/exercise activities; over-exercising and related injuries, secretive exercise in room (e.g. sit-ups, push-ups; assess other activities as well, employment, music band, etc.)
- **Binge/Purging Behaviours:** Purging frequency, Ipecac use, laxative use, diuretics, diet pills, other medications, binge eating - quantity, frequency, type of food, loss of control around eating
- **Menstrual History:** Menarche, menses history, usual cycle, timing of amenorrhea in relationship to weight loss

- **Eating Disorder Behaviours:** Body image distortion, pursuit of thinness, fear of fatness or fear of normal weight, parental concern of an eating disorder, weight loss medications
- **Treatment:** Previous treatments for weight loss, admission(s) to hospital, any psychiatric/psychological treatment including outpatient treatment, medications used, treating team(s) involved in current care
- **Psychiatric History:** Self harm, current or past suicidal ideation and/or attempts, depression, anxiety, obsessive compulsive tendencies or disorder, general mental health presentation.
- **Complications:** Psychological - Check for depression, suicidal ideation and self-harm; Physical – Check for unexplained syncope, palpitations, constipation, feeling cold, hair loss, easy bruising
- **Other:** Relevant past medical history, exclude other causes of weight loss especially:
    - Hyperthyroidism
    - Celiac disease
    - Inflammatory bowel disease
    - Diabetes
    - Further assessment is recommended if an ED is suspected or cause for current underlying malnourished state is not attainable.

(Source: BC Children's Adolescent Medicine Department & PHSA, Pediatric Eating Disorders BC's Provincial Community Hospital Protocol, 2013.& Eating Disorders Emergency Department Guidelines, 2012.)

Requesting Consult & Admissions for Pediatric Patients with an ED or Suspected ED – BC Provincial Community Hospital Protocols (2012):

For Psychiatric Concerns:

"If any evidence of suicidality, significant self-harm, increasing distress from psychiatric comorbidities requiring immediate support, or refusal of medical treatment requiring certification under mental health act, contact the local hospital's On-Call Psychiatry service for safety assessment & support." (PHSA, Pediatric Eating Disorders BC's Provincial Community Hospital Protocol, 2012).

Typically when an adolescent presents in crisis, they will be directed to their local emergency room by family, friends, school workers or health care providers, as an example. The Psychiatrist on-call will be alerted by the Psychiatric Liaison Nurse or for rural communities who do not have Psychiatry on-call, the adolescent will be assessed by the Emergency Room Physician to assess the patient's current psychiatric condition. The attending Psychiatrist or Physician will need to determine if the adolescent requires further inpatient assessment on the Acute Psychiatric Adolescent Unit (APAU) located in Prince George, BC at the University Hospital of Northern British Columbia or if patient is safe to be discharged back home to the community with sufficient supports in place.

If the attending Physician or Psychiatrist has assessed the need for further inpatient assessment and the patient is from outside of Prince George, two certifications are required in order to transfer the patient to APAU. Two physicians are required in order to complete a certification, following the guidelines of the BC Mental Health Act.

The transferring community will phone the Youth Programs Regional Liaison at 250-649-7065 to arrange an admission to the APAU.

For Medical Concerns:

- Contact the On Call Pediatrician at your facility or nearest admitting facility to request consult and ongoing care/follow-up plans. Note: please refer to Northern Health's Regional Pediatric Availability for in your area)
- **Urgent consult if Heart Rate is 45-50 beats per minute**
- **Request Admission if:**
    - Heart Rate is less than 45 beats per minute
    - Rhythm disturbance
    - Prolonged QTc is greater than 450 milliseconds
    - Hypoglycemia on presentation (less than 3.0 mmol/L)
    - Presented with hypothermia (less than 36 degrees Celsius)
    - Any other electrolyte derangement

- Requiring intravenous resuscitation
- Presented with uncompensated volume depletion: Blood Pressure is less than 80/50 mmHg, postural systolic drop is greater than 20 mmHg, pulse differential of 30 beats per minute or greater.

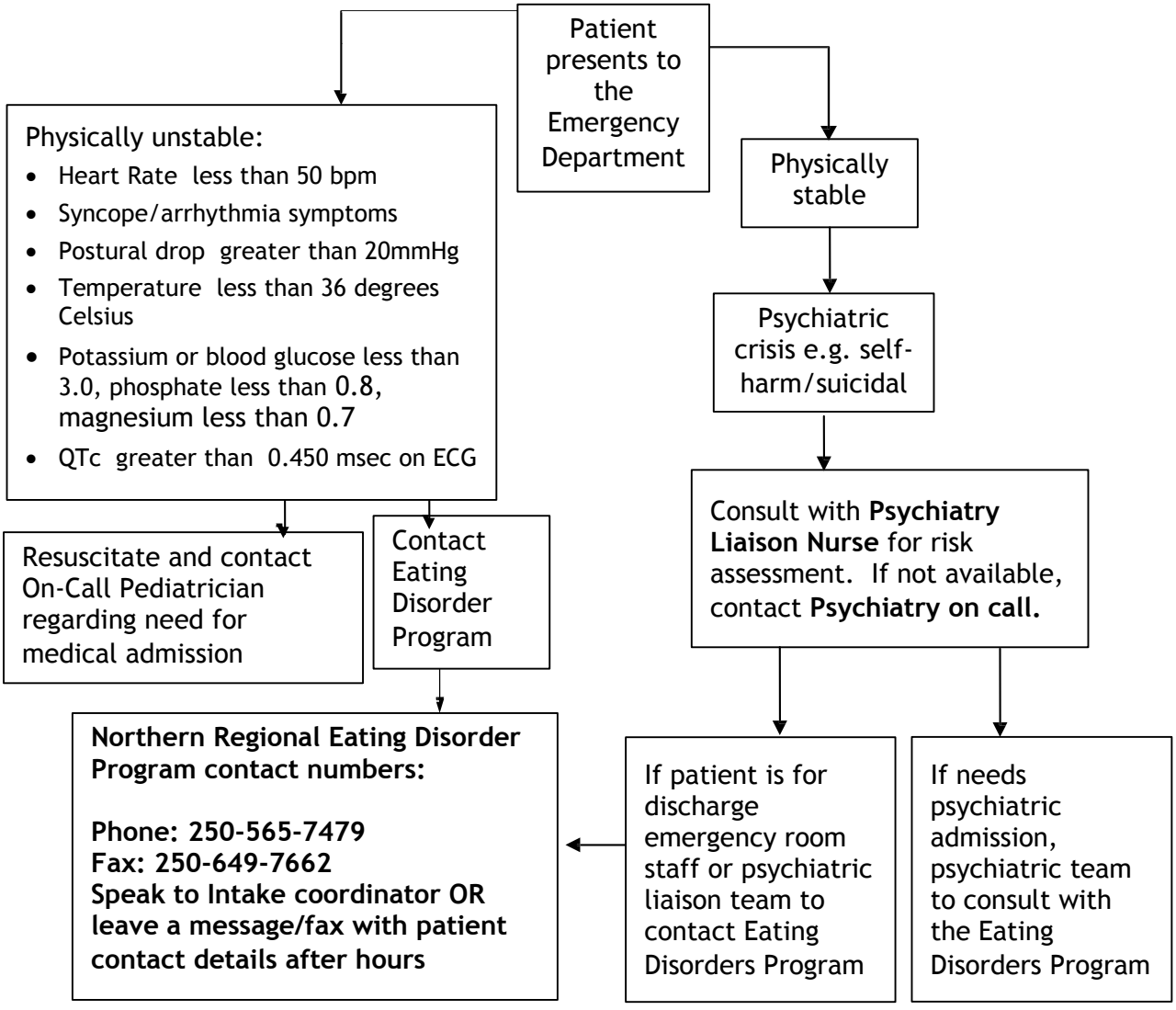
The Emergency Room Physician or Pediatrician on call may consider consultation with their local eating disorders program or the BCCH Eating Disorders Program as needed. Confirm plans post emergency room visit. Please refer to Northern Health's Pediatric List for contact information for on-call Pediatrician information for your area. (PHSA, Pediatric Eating Disorders BC's Provincial Community Hospital Protocol, 2012 & Dr. Pei-Yoong Lam, Assessment Framework for Medical Risks Module 3 – Medical Diagnosis and Management, 2014).

Medical Assessment & Interventions:

- If heart rate is less than 50 beats per minute, place on cardiac monitor and do a 12 lead electrocardiogram (ECG).
- If heart rate shift is greater than 30 beats per minute with orthostatic heart rate, place on cardiac monitor and do 12 lead ECG.
- Perform Orthostatic Blood Pressure: Assess shift in blood pressure from lying to standing – if blood pressure drop is greater than 20mmHg, rehydration is required. Establish extent of dehydration, vital signs, capillary refill, weight change, skin turgor (assess electrolytes and hematocrit). Monitor heart rate and blood pressure closely while rehydrating and adjust intravenous rate as indicated to maintenance. Watch for induced tachycardia with stressed heart and a fluid bolus
- If temperature is below 36 degrees Celsisus, re-warming is required as per facilities re-warming protocol.
- Assess Serum Sodium, Potassium, Chloride, Bibarbonate (HC03), Urea, Creatinine, Calcium, Phosphate, Magnesium, Aspartate Transaminase (AST), Alanine Transaminase (ALT), Alkaline Phosphatase (ALP), Glucose (non-fasting), Complete Blood Count (CBC), Erythrocye Sedimentation Rate (ESR) & complete a Urinalysis.
- Consider a Pregnancy Test (BHcg - for females)
- Consider Urine Drug screen/toxicology panel
- If history of haematemesis, consider adding coagulation profile
- Bedrest at all times (to assist with ruling out any other health condition)

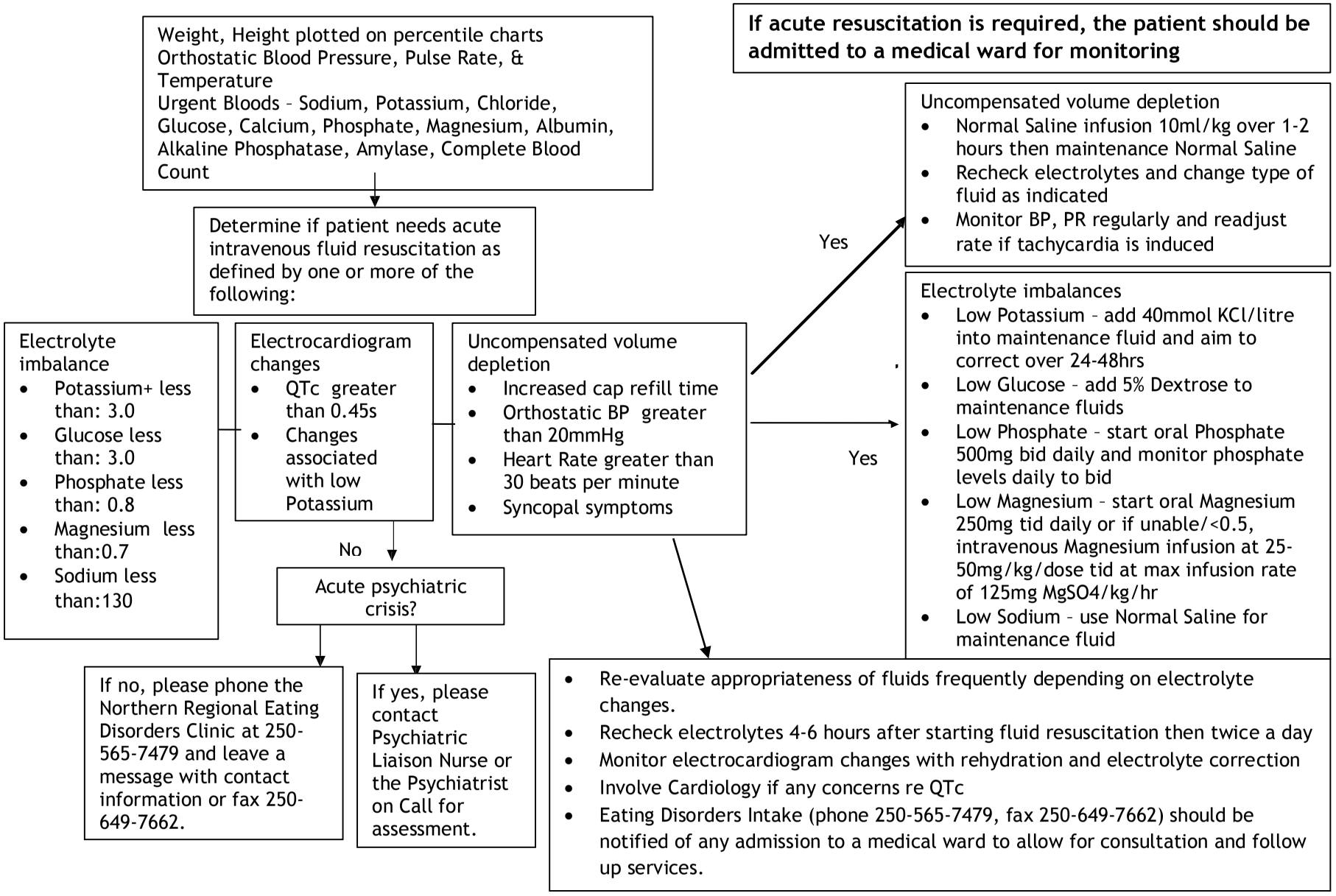
Flow Chart for Pediatric Patients with Eating Disorders Presenting in the Emergency Department

- This document outlines the management of young people who are OUTPATIENTS or NEWLY diagnosed with eating disorders who present to the Emergency Department.
- The focus should be the symptoms that created the crisis resulting in the presentation.
- It is not expected that the Emergency physician needs to treat the eating disorder, start the re-feeding process or provide psychotherapy.
- The aim is for resuscitation and stabilization followed by an assessment regarding mental state and risk of self-harm.
- This flow chart is based on the BC's Community Hospital Protocol for Pediatrics.



Source: BC Children's Hospital Eating Disorders Program & BC Community Hospital Protocol for Pediatrics

Flowchart for Medical Management of Eating Disorders 19 Years and Younger



Reference: BCCH - Eating Disorders Program Emergency Room Assessment & Management Guidelines

Inpatient Management for Children & Adolescents with Eating Disorders

Medical management of eating disorders on medical units requires consultation and planning to ensure safe and efficient admissions. With training and sufficient resources, the attending inpatient team can provide safe care and limit any secondary complications related to re-feeding patients with ED's.

Medical Complications – Re-feeding Syndrome & Underfeeding Syndrome

Recognizing and avoiding re-feeding syndrome is highly controversial in the treatment of patients with AN (Junior MARSIPAN, 2011 & MARSIPAN, 2010). The conflict is due primarily to the distinction between a safe and cautious re-feeding approach versus an over-cautious approach that may be counterproductive in an illness known to thrive on low caloric intake. The danger of an over-cautious approach is under-feeding syndrome, a phenomenon that occurs when patients lose weight due to the re-feeding protocol. Under-feeding syndrome is as risky as re-feeding syndrome.

When patients are first reintroduced to food, the sudden reversal of prolonged starvation poses a number of potential dangers, which is referred to as re-feeding syndrome. Reintroduction of nutrients leads to rapid reductions in electrolytes such as potassium and phosphate and the resulting cardiac effects can be fatal. The key electrolyte for re-feeding syndrome is phosphorus. Re-feeding syndrome can be avoided in severely malnourished patients by gradually increasing nutritional intake and frequently monitoring blood chemistry values potassium, phosphorus, magnesium, sodium and glucose. (Cited by: Mehler & Andersen, 2010, retrieved from Ministry of Health Services, 2012).

Severity Indicators for Re-feeding Syndrome (has one or more of the following)

- Very low weight for height (for Pediatrics based on growth percentiles)
- Minimal or no nutritional intake for more than 3-4 days
- Weight loss or unintentional weight loss of over 15% in the last 3-6 months
- Abnormal electrolytes prior to re-feeding (e.g. low levels of potassium, phosphate, or magnesium)
- Significant electrocardiogram abnormalities
- Active comorbidities (e.g. infection)
- Significant comorbidities (e.g. cardiac, malabsorption syndrome – inflammatory bowel disease, chronic pancreatitis, cystic fibrosis, short bowel syndrome)
- History of alcohol or drugs misuse, including insulin, chemotherapy, antacids, diuretics, or laxatives.
- Re-feeding initiated with nasogastric tube

Excerpt's taken from p. 122 Junior Marsipan, 2011; Marsipan, 2010 from the High Intensity Inpatient Treatment – Medical Stabilization Focus (Stated Section D) from the Ministry of Health Services: Clinical Practice Guidelines for the BC Eating Disorders Continuum of Services 2012 & Mehanna, Moledina & Travis, 2008).

Re-feeding Syndrome Risks

IMPAIRMENT:	Hypophosphatemia:	Hypokalemia:	Hypomagnesaemia:
Cardiac	- Altered Myocardial Function - Congestive Heart Failure - Ventricular Arrhythmia - Sudden Death	- Arrhythmia - Increased Digitalis Sensitivity - T wave flattening and inversion, U waves, ST segment depression - Elevation in Blood Pressure	- Arrhythmia - Tachycardia - Hypertension - Lengthening of PR and QT intervals
Neuromuscular/ **Central Nervous System (CNS)**	- Acute Areflexic Paralysis - Diffuse Sensory Loss - Paresthesia - Cranial Nerve Palsies - Weakness - Confusion - General Seizures - Rhabdomyolysis - Respiratory Insufficiency - Irritability - Delirium - Dysphagia - Coma	- Hypo Areflexia - Paresthesia - Weakness - Paralysis - Respiratory Depression - Rhabdomyolysis - Elevated Beta-Adrenergic Activity	- Weakness - Hyperreflexia - Fasciculation - Tremor - Seizures - Coma - Ataxia - Delirium - Psychiatric Disturbances - Painful Paresthesia - Tetany - Positive Trousseau's Sign
Hematologic	- Altered RBC - Morphology - Hemolytic Anemia - WBC Dysfunction - Thrombocytopenia - Depressed Platelet Function - Hemorrhage		
Metabolic	- Metabolic Encephalopathy	- Glucose Intolerance - Hypokalemic Metabolic Alkalosis	- Refractory Hypokalemia & Hypocalcemia - Hypoparathyroidism - Parathyroid Hormone (PTH) Resistance
Gastrointestinal		- Constipation - Ileus	- Abdominal Pain - Anorexia - Diarrhea - Constipation
Renal	-Hypercalciuria	- Partial Diabetes Insipidus - Polyuria/Polydipsia - Nephropathy with Decreased GFR	

(References:; Mehanna, Moledina & Travis, 2008; Mehler, P., 2016; Ministry of Health, Services 2012; Somers & Traum, 2016; Yu & Stubbs, 2016; and Yu & Yarlagadda, 2016).

Re-feeding Guidelines for Pediatrics

According to the BC Ministry of Health Clinical Practice Guidelines, there are no evidence-based guidelines for the reintroduction of food for younger patients with ED's however, the goal is to stabilize the patient as quickly as possible and ongoing nutritional intake will assist with this process.

"Recommended re-feeding guidelines range from 10kcal/kg to 60kcal/kg. (Junior Marsipan, 2011). Another common recommendation is to increase daily intake from baseline by 200kcal/day, based on biochemistry. If phosphate drops, then intake should remain static until it stabilizes. Reducing caloric intake is not recommended." *(p. 124 High Intensity Inpatient Treatment – Medical Stabilization Focus (Stated Section D, Ministry of Health Services, 2012).*

With keeping in alignment with the key principles and guidelines while caring for pediatric patients with an ED, consulting with the inpatient dietitian immediately, as soon as an eating disorder is suspected or identified is essential in order to mitigate the risk of re-feeding or under-feeding syndrome from occurring and treatment thereof.

Dietitians within Northern Health Region have comprised a manual for services and various meal plans that are entered into CBORD, (Northern Health's Electronic Dietary Entry System) in order to assist with re-feeding and treatment for those individuals experiencing ED's and those who are at risk for developing re-feeding syndrome due to inadequate nutritional intake. The meal plans within Northern Health that address re-feeding guidelines are referred to as Re-feeding Meal Plans A, B & C.

Medical Management for Inpatient Pediatrics

We will now review the medical management of pediatric patients in the inpatient setting. The University Hospital of Northern British Columbia has a designated Pediatric Ward. If a pediatric patient requires an inpatient admission over 24 hours and is outside the Prince George catchment area, it is recommended that the attending physician contact the Pediatrician on-call to discuss the case to determine if transfer to a higher level of care is warranted for more specialized services. Please refer to resource pages to find Pediatrician on-call for your geographical area.

The following flow chart, rationale and review of order set are outlined in the following pages. These guidelines have been derived from BCCH inpatient specialized eating disorder unit and is what is standardized at the BC Children's Hospital. We aim to increase standardized care for Inpatient Pediatric Patients with EDs across Northern Health. This information has been modified to account for Northern Health's accessibility of formulary, testing and re-feeding meal plans.

A Medical Admissions form named, ***"Pediatric Eating Disorders Unstable Patient Medical Admission Orders"*** has been created to promote standardized care for the Pediatric Patient with an ED. Essentially this form should be utilized during all inpatient admissions for a patient who is receiving care related to their ED and requiring medical stabilization, monitoring and re-feeding. Standards have been set into place to audit the efficacy of this order set in order to continually adapt any future changes that may be deemed necessary to ensure appropriate patient safety has been taken into consideration. Although the population prevalence is relatively low for ED's, we do know the impact and burden of this type of illness is profound and can be life-threatening. Please refer to Appendix C for this Medical Admissions Order Set Form.

Rationale for Pediatric Eating Disorders Unstable Patient Medical Admission Order Set

(Source: BC Children's Inpatient Specialized Eating Disorders Unit)

Diet

There is a strong focus on diet in the order set and accompanying documents due to the concept that "food is medicine" for medically unstable patients with AN, BN, ARFID or for Pediatric patients who are at a high risk for developing re-feeding syndrome. After medical stabilization of life threatening complications (e.g. hypoglycemia, dehydration, cardiac arrhythmias), nutritional rehabilitation is the next priority. Without a concerted re-feeding effort, no meaningful psychotherapy can take place, due to starvation-induced cognitive deficits. The diet office & kitchen will provide the re-feeding meal plan as ordered on admission order set.

While the patient is on the medical ward or on adolescent psychiatry, food substitutions are not permitted based on patient preferences as this could enable further eating disorder behaviors. An additional order needs to be written should the patient have religious or cultural dietary restrictions. These may include orders for: no red meat, no pork, no poultry, and no seafood. ***We cannot accommodate vegan diets.*** If the child or adolescent has a long history of a religious or cultural dietary restriction that predates the eating disorder, then this should be accommodated. Otherwise, dietary restrictions are often a symptom of the eating disorder. Further collateral information from the parents will be essential in assessing and determining the cultural context and dietary restrictions in the current child or adolescent's diet.

Considerations in Initial Meal Plan Choice

During the admission history, it is critical to take a complete dietary intake history to help determine approximately how many calories the patient has been taking in during the 2 weeks preceding admission. For some patients, you may be able to ask "Do you count calories, if so how many calories have you been having per day for the last 2 weeks." Aim to initiate the meal plan 200 calories per day greater than home intake.

If you are unable to estimate caloric intake or if caloric intake has been less than 1000 calories in the two weeks prior to admission, then it is recommended to initiate re-feeding with 'Meal Plan A'. If you are unclear which meal plan to order you can contact the adolescent medicine physician on call to ask for their advice at: 1-604-875-3472.

In the current eating disorder literature, the concept of using hypo-caloric diets with a "start low, go slow" approach to avoid re-feeding syndrome is no longer considered the gold standard approach to nutritional rehabilitation. Recent case series have shown that starting nutritional rehabilitation at 1200 calories/day leads to further weight loss in the first week in the majority of adolescents, without weight gain until after the first week of hospitalization. Starting low and advancing slow can result in prolonged hospitalization and delayed nutritional repletion. Routine supplementation with phosphate minimizes the risk of re-feeding syndrome. Exceptions to this practice would be if the patient is 10 years and under, it is recommended to start with 'Re-feeding Meal Plan A'.

Considerations for Meal Plan Advancement

If the patient is completing all meals and snacks as ordered then advance the meal plan to the next re-feeding meal plan (i.e. A - B) every 1-2 days. For underweight pediatric patients target caloric intake would be 3000kcal/day or higher for a 1kg/week weight gain goal. For patients at a healthy weight a 1800-2200kcal/day may be a maintenance goal – taking into consideration for both scenario's that daily activity is taken into consideration – please refer to Appendix D for recommended activity guidelines.

Meal Trays & Daily Intake Log

Each meal tray comes to unit with a form indicating the contents. It is up to the assigned Nurse to double check all meal trays prior to delivery to the patient and family. The nurse may also delegate the task to the 1:1 working with the patient. The 'Daily Intake Log' is a clinical tool that can be used to record daily dietary intake as it corresponds to the Re-feeding Meal Plans (A-C) and regular meal plans thereafter. Each unit will have a devoted clinical recording record. Inpatient Dietitians can specify to the nurse, staff and family which forms that they would like to have filled out for keeping track of daily intake.

When first admitted to hospital it will be up to the attending Nurse or assigned delegates to complete the Daily Intake Log. Once the patient has stabilized medically, the staff will work with the family with completing the form in preparation for future passes and transitioning the child or adolescent back to the home environment. Nursing staff will provide the assigned staff or parents the Daily Intake Log daily with the breakfast tray so that it can be completed throughout the day. Nursing will collect it after evening snack and ensure that it is added to the patient's chart. It is the responsibility of parents/caregivers to fill in the Daily Intake Log when the child/adolescent. In their absence nursing staff should complete the log.

Outside Food and Drink Recommendations:

The order set specifies: "No food substitutions" and "No outside food or drink, chewing gum, caffeine or artificial sweeteners". In the treatment of eating disorders food should be considered the main medication. Food substitutions during initial medical stabilization can lead to insufficient caloric intake, further weight loss, fluid management challenges and adverse patient outcomes. The process of negotiations with a patient with an eating disorder can reinforce the eating disorder and delay nutritional rehabilitation. Do not negotiate with the eating disorder. If parents are asking for substitutions, dietitians will need to assess the source of the requests with the parents. The message conveyed should be open and addressing any cultural interferences. The message also needs to convey the severity of the child's health status and that the patient is currently being monitored for any medical complications as a result of the re-feeding process. Once the patient is medically stabilized and on a regular diet protocol, than discussions surrounding passes and family meals at home would be more appropriate.

The consumption of caffeine, chewing gum and artificial sweeteners all have negative effects in the management of eating disorders thus their use should be prohibited in acute management settings. Specifically, caffeine has physiological effects including increased metabolism, increased muscle work output for endurance activities, delayed onset of fatigue and diuretic properties. Artificially sweetened foods are energy sparse products that facilitate weight loss and prevent weight gain. Gum use causes jaw pain, gastrointestinal side effects such as bloating, abdominal pain, and diarrhea as well as appetite dysregulation.

Meal Support

At BCCH when a pediatric patient is admitted to a medical ward, the parents take on the role of meal support. It is up to the nursing staff and dietitian to assist the family with this role. Inpatient staff can consult with the Northern Regional Eating Disorders team on information for meal support. If parents are not available or if there are extenuating circumstances where there is not parent or legal guardian available then a 1:1 would be recommended at all meal times and for post meal support.

All meals and snacks should be supervised and parents should be cautioned that some youth with eating disorders secretly hide food. The parent handout has a reference to the meal support video for instructions. The parent or caregiver should check that the food that arrives on the patient's meal tray is in line with menu plan, which arrives circled on the tray. If there are any discrepancies the family should alert the bedside nurse so that they may bring it to the attention of the patient's attending team of physicians. The parent/caregiver should be instructed to remove the food 30 minutes after the beginning of a meal and 20 minutes after the beginning of a snack. If, due to extenuating circumstances, a parent or caregiver is not available to provide meal support, the 1:1 must alert the nurse and the nurse will check that the contents of the tray are in line with the menu plan and should remove the tray after 30 minutes for meals and 20 minutes for snacks.

Fluids & Weights

Fluid Status Assessment

The assessment of fluid and electrolyte disturbances in patients presenting with an eating disorder are both important as well as inherently difficult due to challenges with volume status assessment by history, physical examination, and laboratory investigation.

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. 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.

On physical examination an assessment of capillary refill, mottling, perfusion, urine output, and peripheral edema is indicated. In patients with AN, confounding factors can lead to inaccurate volume assessment. For example, diminished skin turgor and sunken facies can be compatible with extracellular volume depletion but may also be a sign of extreme weight loss. Additionally, patients are often bradycardia at baseline, thus resting heart rate is not a good indicator of intravascular volume status.

Laboratory indices of hemo-concentration can be difficult to interpret before the patient is rehydrated appropriately. For example, serum hemoglobin and total protein concentration may appear within normal range on day one of admission, however, on reassessment several days later they are often low secondary to chronic malnutrition. 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.

Clinical Use of Oral Fluids

Pedialyte provides appropriate fluid and electrolyte rehydration. Pedialyte (200mL) should be provided with each meal and snack (six times per day or 1200mL total/day). Free water is limited to 1litre per day to avoid early satiety.

IV Fluid Recommendations

Oral rehydration is the preferred route of fluid resuscitation. IV fluid resuscitation should be considered if:

- Signs of severe dehydration or hemodynamic instability
- Electrolyte imbalance requiring acute correction
- Hypoglycemia, if oral correction is refused
- Refusing oral foods and NG tube not yet placed

The recommended maintenance fluid for hospitalized patients requiring intravenous therapy is D5NS. Please see section entitled “Flowchart of Medical Management” to determine whether the patient requires a normal saline fluid bolus.

Given the frequency of cardiac dysfunction, it is recommended that volume resuscitation is gradual (normal saline boluses of 10 mL/kg) rather than aggressive.

Patient Weighing

Patients should be weighed in a gown and underwear only in the mornings after their first void and before eating breakfast. The dietitian should perform the weight checks and in their absence then the nursing staff should be providing this care. The dietitian and team will arrange how frequent the weight checks are being completed. Weight checks are recommended three times a week at BCCH on Mondays, Wednesdays and Fridays to ensure that patient is acquiring necessary caloric intake. Teams need to decide frequency of weight checks based on patient presentation.

The initial recommendation is to weigh the patient back to scale and not discuss weights. Discussing weights and weight checks in general can be quite anxiety provoking for some individuals especially around the re-feeding process hence, this initial approach. Also ongoing discussion on a weight or specific weight goal can detract from the overall “health restoration” goal. Further discussion would be warranted if patient is wanting to know their weight and assessing whether disclosing this information would be valuable to treatment or detrimental. Consideration into history and presentation with patient and family should be taken when making this consideration and discussion amongst the inpatient team would be recommended to ensure consistency of care.

Activity

Patients with medically unstable eating disorders have severely depleted their energy stores. During the initial process of nutritional rehabilitation, activity is counterproductive to the goal of weight gain and can put the patient at medical risk of eating disorder complications, such as falls secondary to fainting.

The order set specifies that the patients are to be on strict bed rest. Any out of room activity needs to be specifically ordered by the attending physician team. If a physician has written an order for the patient to attend a test off of the unit, a porter, family member or nurse should push their wheelchair to attend the tests. In some circumstances, if a patient is on complete bed rest then using a wheel chair or having assistance going to and from the bathroom would be warranted. Please inform staff immediately if the patient is exercising in the room.

Showering, an activity of daily living, also requires significant energy expenditure. The orders specify that the patient should be assisted by a nurse to shower, should use a shower chair and that length of shower should be limited to maximum 10 minutes. Shower supervision limits the possibility of the shower providing an opportunity for eating disordered behaviors such as purging or exercising. The shower chair reduces energy expenditure as well as fall risk, increasing patient safety. The time limit helps to avoid symptoms of excessive energy expenditure such as a decrease in resting heart rate.

Vitals

In Anorexia Nervosa, cardiac complications are common (can be present in up to 80% of patients). They can include alterations in cardiac electrical activity, structure and hemodynamics which can lead to morbidity and mortality. Therefore continuous cardiac monitoring (telemetry) is required to look for bradycardia and arrythmias. Corrected QTc should be calculated by hand from a 12 lead ECG.

Orthostatic vitals are done twice daily as part of this monitoring. When completing orthostatic vitals please have the patient lie supine for 5 minutes and stand for 2 minutes before measurement.

During the re-feeding process, postprandial insulin will surge, resulting in a drop in blood glucose. This occurs most commonly in the first 2-3 days of re-feeding, therefore, bedside blood glucose is done 30 minutes post meals.

Investigations

Serum Electrolytes

The close monitoring of serum electrolytes, particularly potassium, phosphate and magnesium, is critically important in the management of unstable eating disorders patients as these patients are at risk for re-feeding syndrome. This syndrome describes a potentially fatal shift of fluid and electrolytes that can occur when re-feeding (orally, enterally, or parenterally) a malnourished patient. Clinical symptoms of this syndrome can be quite non- specific, thus laboratory monitoring is vital to early identification and management.

Patients Particularly at Risk of Re-feeding Syndrome Include:

- Age less than 12
- Poor fluid intake prior to admission
- Caloric intake less than 500 calories per day prior to admission
- SUSS test positive – stand from squat or sit up from lying with difficulty (i.e. needing to use upper limbs for support)

- History of rapid weight loss – for example no intake for the past week leading up to presentation, previously overweight and now <50%ile BMI within 1 month

General Principles of Managing Re-feeding

- If there has been VERY low (less than 500 calories) or no intake at all prior to admission, recommendation would be to start at re-feeding meal plan A (1000 calories). In general, recommendation would be starting at Meal plan C (1500 calories) and starting Phosphate 500mg PO BID (Phosphate is initiated in all medically unstable patients on the pre-printed order set).
- Increase intake by 200-300cal every day i.e. increase meal plan daily for example from A to B. On morning rounds please consider ordering meal plan increases for the following day. Meal plans can be increased on Fridays for Saturday morning, however, typically, meal plans should remain constant from Saturday to Sunday. Target goal for inpatient should be 1-2kg/week weight gain.
- After rehydration, ensure that as the IV is weaned off, the oral fluid intake increases correspondingly. It would be best to use oral Pedialyte to rehydrate and remove the IV as soon as possible.
- Total maintenance fluids should be around 1500-2000 mL per day (e.g. 200mL Pedialyte with each meal and snack [x6 per day, total of 1200mL] and the rest will be fulfilled within the meal plan).
- If solid food is refused, substitute with Ensure Plus. Please see Food Refusal Guidelines later in this document for further details.
- For patients at high risk of re-feeding syndrome or with known re-feeding syndrome, close monitoring (telemetry and daily to twice daily labs) must be performed during the risk period of re-feeding, which is the first five to ten days of re-feeding.

Electrolyte Derangements

Hypophosphatemia

This may result in cardiac arrhythmias, especially when in combination with other electrolyte derangements. Hypophosphatemia indicates re-feeding syndrome, and generally occurs within the first 5-7 days of re-feeding and possibly with each increase in daily caloric intake. This is managed with cautious titration of nutrition, supplemental oral phosphate and close monitoring (labs and telemetry).

Hypomagnesemia

This generally occurs within the first 5-7 days. Magnesium can be replaced either orally or by IV. Oral Magnesium can be given at 420 mg twice daily or IV magnesium sulphate infusion at 25-50 mg/kg/dose at a maximum infusion rate of 125mg/kg/hr.

Hypokalemia

This is most likely to be secondary to vomiting or laxative abuse. It can also occur with re-feeding. Oral replacement should be used initially, however, a potassium value below 2.5 mmol/L requires intensive cardiac monitoring and intravenous replacement.

Hyponatremia

This is less common and may be due to excessive water intake, underlying sepsis (causing SIADH), or excessive sodium loss due to diarrhea/vomiting. Low urinary sodium suggests total body sodium depletion. Hyponatremia in the context of dehydration exacerbates hypokalemia.

Medications

Rationale for phosphate (related to re-feeding above)

Hypophosphatemia is a common but preventable complication of re-feeding syndrome. Thus, the order set recommends providing sodium phosphate supplementation 500mg PO BID.

Rationale for PEG 3350

Constipation is a common complication of Anorexia Nervosa secondary to decreased gastrointestinal motility.

Rationale for magnesium

Replace Mg if Mg <0.5mmol/l via oral Mg (suggest 420 mg = 252 mg elemental magnesium orally 3-4 times daily). Be aware that this may induce diarrhea.

Rationale for potassium

Replace potassium chloride if K+ <3.0. Start with oral potassium but if K+ <2.5, IV potassium replacement is recommended.

Alert MD on Call if:

The following vital sign parameters should prompt a call to the physician on call for consideration within the clinical context:

- Systolic BP drops by >40mmHg from lying to standing.
- HR at or <30bpm.
- Blood glucose <3.5 (It is important to know when glucose is at this level before it becomes clinically low enough to result in seizures. This is particularly important in this population, as glycogen stores are usually very depleted).
- Refusal of eating 1 consecutive meal and snack (e.g. lunch and PM snack).

Suggested Action in the Event of Food Refusal

In the instance that a patient refuses food for 1 consecutive meal and snack, the following are suggestions for clinical management:

The first option to discuss with the patient is whether they would be willing to drink a liquid meal replacement instead of eating their meals and snacks. If they agree to this option then please use the following guidelines to convert their current meal plan to a liquid meal replacement of

equivalent caloric value. Boost Plus is the preferred liquid meal replacement. One bottle of Boost Plus is 235 milliliters.

Equivalent Amounts of Boost Plus to Eating Disorder Meal Plans*

Meal Plan	Breakfast	Lunch	Dinner	Snacks (3 per day)
A	120 mL	1 Bottle	1 Bottle	50 mL
B	150 mL	1 Bottle + 125 mL	1 Bottle	50 mL
C	150 mL	1 Bottle + 125 mL	1 Bottle + 125 mL	75 mL

*This can be substituted with Boost Plus. One bottle of Boost Plus is 237 milliliters (equivalent calories).

If there is a consistent pattern of missed meals or snacks (e.g. 1 missed snack per day), then this warrants a clear discussion with the young person and their family regarding the importance of keeping up with the meal plan requirements to allow medical stabilization to occur. If this persists, and they continue to be medically unstable, a consult involving Adolescent Medicine should occur to discuss the possibility of using NG feeds.

If the patient is <30kg or <11years old, please consult Adolescent Medicine at (604-875-3472) for advice on the appropriate formula.

If the patient refuses liquid meal replacements, then NG feeding should be considered. Parenteral nutrition is rarely needed, except in the most challenging of cases. This should only be considered in consultation with an Eating Disorder Specialist.

References:

Pediatric Eating Disorder Discharge Plan

Discharge planning is an important component to inpatient care for pediatric patients with EDs. It assists with providing support to the patient and families transitioning back into community. It is important to collaborate and develop a discharge plan amongst the inpatient and outpatient team to assist with bridging the gap between services.

Although Northern Health does not have a designated Eating Disorder unit, treating someone with an ED is paramount in regards to inpatient treatment planning and discharge planning. There are many things that team members can do with the patient and family while on the unit in regards to the ED. There are many resources available on-line and through the Northern Regional Eating Disorders Clinic to assist with providing quality care, information, support and resources to those individuals and families with an ED.

Please refer to Appendix E with regards to a template for assistance towards discharge planning. The Northern Regional Eating Disorders Clinic is available ongoing for consult regarding this tool and all that have been discussed throughout this package.

Northern Health's Regional Pediatric Availability:

North West:

Bulkley Valley District Hospital (250-847-2611) – Smither's, BC - (no Pediatrician on site; visiting Pediatrician every 1-2 months, refer to Terrace)

Kitimat General Hospital (250-632-2121) – Kitimat, BC - (no Pediatrician on site; refer to Terrace for Pediatrician)

Mills Memorial Hospital (250-635-2211)– Terrace, BC – (Pediatrician on-site)

Prince Rupert Regional Hospital (250-624-2171) – Prince Rupert, BC - (Pediatrician on-site)

Queen Charlotte Islands General Hospital (250-559-4300) – Queen Charlotte, BC – (no Pediatrician on site; visiting Pediatrician every 4-6 months, refer to Prince Rupert)

Northern Haide Gwaii Hospital and Health Centre (250-626-4700) – Masset, BC – (no Pediatrician on site; visiting Pediatrician every 4-6 months, refer to Prince Rupert)

North East:

Dawson Creek and District Hospital (250-782-8501) – Dawson Creek, BC - (no Pediatrician on site; visiting Pediatrician every 2-3 months, refer to Fort St John)

Fort Nelson General Hospital (250-774-8100) – Fort Nelson, BC - (no visiting Pediatrician, refer to Fort St John)

Fort St John General Hospital (250-262-5200) – Fort St John, BC – (Pediatrician on-site)

Northern Interior:

G.R. Baker Memorial Hospital (250-985-5600) – Quesnel, BC - (no Pediatrician on site; visiting Pediatrician monthly, refer to Prince George)

Lakes District Hospital and Health Centre (250-692-2400) – Burns Lake, BC - (no Pediatrician on site, refer to Prince George)

Mackenzie and District Hospital (250-997-3263) – Mackenzie, BC - (no Pediatrician on site, refer to Prince George)

McBride and District Hospital (250-569-2251) – McBride, BC - (no Pediatrician on site, refer to Prince George)

St. John Hospital (250-567-2211) – Vanderhoof, BC – (no Pediatrician on site, visiting Pediatrician every 1-2 months, refer to Prince George)

Stuart Lake General Hospital (250-996-8201) – (no Pediatrician on site, refer to Prince George)

University Hospital of Northern British Columbia (250-565-2000) – Prince George, BC - (Pediatrician on site; Pediatric Ward)

Northern Regional Eating Disorders Clinic Contact Lists

Clinical consultation available every Thursday from 0900 – 1030 with Regional Eating Disorders Clinic Team. Please phone 250-565-7479. (Provides medical, dietetic, therapeutic consult to all professionals working with clients with or query eating disorder).

CLINIC STAFF	PHONE (250)	OFFICE	FAX (250)
Clinic Physician/Pediatrician	565-7479	Nechako Centre, 2nd Floor 1308 Alward Street, Prince George, BC V2M 7B1	649-7662
Team Leader	649-7222		649-7662
Registered Dietitian	565-7308		649-7662
Registered Nurse	565-5611		649-7662
Youth Therapist	649-7159		649-7662
Adult Therapist	649-7161		649-7662
Administrative Assistant	565-7479		649-7662

Prince George Mental Health Services Contacts

Community Response Unit (CRU) – first point of entry to Mental Health accepts: self-referrals, connects with Mental Health & Addiction Programs i.e. Mental Health programs and Psychiatry referrals.

APAU Liaison	250-649-7065	Nechako Centre	

University Hospital of Northern BC (UHNBC)

UHNBC switchboard for Inpatient Units including Medical, Psychiatry, and Emergency

UHNBC Switchboard	565-2000	UHNBC Main Floor	565-2234

Rapid Access to Consultative Expertise (RACE)

RACE means timely telephone advice from specialists for family practitioners, Community Specialists or House staff, all in one phone call.

Monday to Friday 0800 – 1700
Local Calls: 604-696-2131
Toll Free: 1-877-696-2131

Clinical Consult for Children and Adolescents

Please refer to the BCCH Inpatient Eating Disorders Program 604-875-2200.

List of contacts are below:

ASSOCIATES OF THE REGIONAL EATING DISORDERS CLINIC

BC CHILDREN'S HOSPITAL – VANCOUVER	PHONE	FAX
Eating Disorders Reception	**604-875-2200**	**604-875-2271 (main fax for program)**
Nurse Intake Coordinator **Fax for intakes/referrals 604-875-2042**	604-875-2106	For ALL BC Children's Inpatient Consultation please phone the Eating Disorders Reception Line and they will connect you to the appropriate discipline for consult purposes. For all new intakes/referrals please phone the nurse intake coordinator. **Provincial Specialized Eating Disorders Program** c/o Mental Health Building 4500 Oak Street Vancouver, BC V6H 3N1
St Paul's Inpatient Eating Disorder Program (17 years & up)	604-682-2344	Intake Coordinator: 604-806-8654
F.A.M.I.L.I.E.S (Family Alliance on Mental Illness – Leaders in Involvement, Empowerment and Support)	250-561-8033 within Prince George, outside Prince George please call: 1-888-561-8055 for services near you	www.bcsspgfamilies.org www.bcsspg.org
Family Services of the North Shore (formerly Jessie's Hope Society)	604-988-5281	http://www.familyservices.bc.ca
BC Ministry Child and Youth Mental Health Services (CYMH)	250-562-6639 within Prince George, outside Prince George please call 250-387-9749 for services near you	http://www.mcf.gov.bc.ca/mental_health/
Kelty Mental Health Resource Centre	1-800-665-1822	keltycentre@bcmhs.bc.ca
Looking Glass Foundation and Residence for Eating Disorders	1-888-980-5874	www.lookingglassbc.com

Clinical Resources

Shared Care Eating Disorders Learning Modules (http://sharedcarebc.ca/initiatives/CYMHSU-Resources)

Kelty Mental Health - Eating Disorders (http://keltyeatingdisorders.ca/eating-disorders)

Clinicians Clinical Support Package – available through Northern Regional Eating Disorders Clinic

Dietitians Clinical Support Package – available through Northern Regional Eating Disorders Clinic

Family Resource Package – available through Northern Regional Eating Disorders Clinic (reorder #: 11-040-6130)

Inpatient Information Package: One to One Meal Support for Eating Disorders (reorder #: 11-040-6137)

Online Learning Hub – Family Based Therapy Modules (accessible for NH employees only)

Appendix A: Pediatric Medical Assessment (10-035-5027)

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All Sites and Facilities

Pediatric Eating Disorders Assessment **Page 1 of 5** *PATIENT LABEL*

1. **Chief complaint** (What brought them in today?)

_____

_____

SCOFF score:_____

2. **Current eating habits and behaviours** (specify frequency, duration and history)

_____

_____

Restrictive habits
(e.g., calorie counts, mono diets, elimination of food groups/types, portion sizes, skipping meals, fasting, other)

_____

_____

Purging/compensatory behaviours (check all that apply)

☐ Self-vomiting Times per day/week: _____ Severity: _____

☐ Laxative use Type: _____ Amount: _____ Times per day/week/month: _____

☐ Diuretic use Type: _____ Amount: _____ Times per day/week/month: _____

☐ Herbal or weight loss medications:
Type: _____ Amount: _____ Times per day/week/month: _____

☐ Activity levels (indicate compulsion for exercise)
Type: _____ Intensity: _____ Hours per day/week: _____
Compulsion: _____ Other: _____

Binge eating habits (Check all that apply.)

☐ Do you eat until you are uncomfortably full?
☐ Do you eat a large portion of food over a short duration of time?
☐ Do you ever eat in secret?
☐ Do you feel out of control when you eat?
☐ Do you feel negative feelings or shame after you eat?

If yes to any of the above questions, indicate frequency per day/week this occurs: _____

Other eating habits and behaviours (check all that apply)

☐ Do you chew and spit out your food?
☐ Do you eat any non-nutritive or non-food substances or items?
☐ Do you rely on nutritional supplements regularly to try and maintain your nutritional status (e.g., Boost, Ensure, Pedialyte, vitamins, powders, other)?

If yes to any of the above questions, indicate frequency per day/week this occurs: _____

10-035-5027 (LC - Appr. - 08/16)

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All Sites and Facilities

Pediatric Eating Disorders Assessment

PATIENT LABEL

3. Nutritional assessment (Consent dietitian on-call to review assessment findings.)

☐ **Special diet considerations**

Specify vegetarian, gluten-free, lactose free, vegan or other type of diet and provide rationale (e.g., diagnosed medical condition, celiac disease):

If yes to any of the above, substantiate diagnosis appropriately and collect history of when these eating habits began, family, cultural influences and practices.

☐ **24 hour food recall** (ask intake from yesterday to indicate portions and time of meals)

Breakfast:

Lunch:

Dinner:

Snacks:

Fluids:

☐ **Meal time dynamics** (e.g., who does the patient eat with during meal times, location of meal times, who prepares meals and serves meals in the household):

4. Psychosocial assessment

☐ Birth experience/early childhood development and history:

☐ Current education and employment status and history:

☐ Current home environment, safety and history:

☐ Current social supports and family dynamics:

☐ Current self-image and self-worth (e.g., perception of self, self talk):

☐ Current though process (e.g., desire for weight gain/loss, current body image, specified ideal body type/shape)

☐ Current identifiable stressors (e.g., bullying, abuse, neglect, sport/school competition):

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All Sites and Facilities

Pediatric Eating Disorders Assessment

PATIENT LABEL

5. Medical assessment and history

Perform exam dressed in only gown and underwear only. Perform weight measurements with back to the scale and discuss results in regards to overall health assessment findings.

☐ Medical history/diagnosis: _____

☐ Psychiatric history/diagnosis: _____

☐ Family history/diagnosis: _____

☐ Current medications: _____

☐ Current medical concerns: _____

☐ **Growth parameters**

Height: _____cm Weight: _____ kg

Growth percentile: _____% Calculated BMI: _____

Weight history: _____

☐ Vital signs ☐ Tympanic temperature

Orthstatic vital signs

	Resting for 5 minutes		Standing for 5 minutes	
	Lying	Sitting	Standing	Orthostatic changes?
BP				
HR				

Physical exam red alerts

Contact pediatrician on-call if:

- Weight loss more than 0.5 kg per week or less than compared to current expected growth percentile
- Temperature less than 36°C
- Bradycardia less than 50 bpm

Orthostatic hypotension:

- Decrease in systolic BP 20 mmHg
- Decrease in diastolic BP 15 mmHg
- Increased pulse 30 bpm or greater
- Blood pressure less than 80/60

- ECG: Prolonged QTc greater than 450 ms
- Arrhythmia or any other rate rhythm disturbance
- Hypoglycemia (blood sugar less than 3.5 mmol/L
- Any electrolyte disturbance
- Dehydration
- Food refusal
- Overall failure to thrive
- Current suicidal ideation and self harming behaviours

☐ **General appearance:** _____

☐ Hydration ☐ Acrocyanosis ☐ Carotenemia (palm orange) ☐ Pretibial

☐ Petechiae/bruising ☐ Self injury (scars/marks) ☐ Lanugo hair ☐ Callus MCP ☐ Edema

☐ Other: _____

☐ **Hair:** ☐ Dry ☐ Brittle ☐ Loss ☐ Parietal alopecia ☐ Other: _____

☐ **Nails:** ☐ Brittle ☐ White ☐ Mee's lines ☐ Other: _____

☐ **Strength tests**

☐ **Sit-up test** (lying to sitting): ☐ No hands ☐ Requires hands

☐ **Squat/stand test** (squat to stand): ☐ No use of levers ☐ Use of arm/lever

☐ **Observations:** _____

Muscle and neurologic:

☐ Torso muscle wasting ☐ Limbs muscle wasting ☐ Deep tendon reflexes slowed ☐ Cold intolerance

☐ Stress fractures ☐ Seizures ☐ Muscle pain ☐ Joint pain ☐ Injuries: _____

☐ Other: _____

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All Sites and Facilities

Pediatric Eating Disorders Assessment

PATIENT LABEL

Head: Ears, eyes, nose, throat and mouth

☐ Parotid enlargement ☐ Tenderness ☐ Submandibular hypertrophy ☐ Conjunctival pallor
☐ Conjunctival hemorrhage/injection ☐ Gingivitis ☐ Stomatitis ☐ Cheilosis ☐ Petechiae of palate
☐ Dental enamel erosion ☐ Cavities ☐ Thyroid

☐ Other: _____

Cardiorespiratory

Heart sounds: _____ Murmurs (mitral valve prolapse): _____

Respiratory sounds: _____

☐ Dizziness ☐ Lightheaded ☐ Syncope ☐ Chest pain ☐ Shortness of breath ☐ Edema

☐ Other: _____

Gastrointestinal/abdomen

☐ Scaphoid ☐ Distended Bowel sounds: _____ Scars: _____

☐ Tanner stage (adolescents): _____

☐ Other: _____

Genitourinary and reproductive

☐ **Female:** Onset of menarche: _____ Last menstrual period: _____

GTPAL: _____ Current or historical amenorrhea (more than 3 months)? _____

☐ **Male:** Reduced size of testes: _____

Blood work and other investigations

☐ Blood work: CBC (including Hb) electrolytes, Na, K, Cl, CO_3, Ca, Mg, PO_4
- Kidney function: Creatinine, BUN
- Liver function: PT, INR, albumin, ALT, AST, GGT, ALP, total bilirubin
- Nutritional measures: Albumin, vitamin B12, CK, amylase/lipase, zinc
- Metabolic measures: TSH, FT4, FT3, random glucose, HBA1C (if diabetic), ferritin
- Hormonal: FSH/LT/estradiol (females), testosterone (males)

☐ Urinalysis and urine microscopy
- ☐ Specific gravity, pH, ketones, microscopy
- ☐ Urine B-HCG: If amenorrhea and sexually active

☐ ECG - Resting

Additional tests

☐ Bone density (if history of eating disorder is 6 months or longer)
☐ Bone age (as noted above)
☐ Pelvic ultrasound (assess ovary and uterus maturity - BC ED guideline)
☐ HIV test (STOP directive and PHO guidelines)

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All Sites and Facilities

Pediatric Eating Disorders Assessment

PATIENT LABEL

6. Mental health assessment

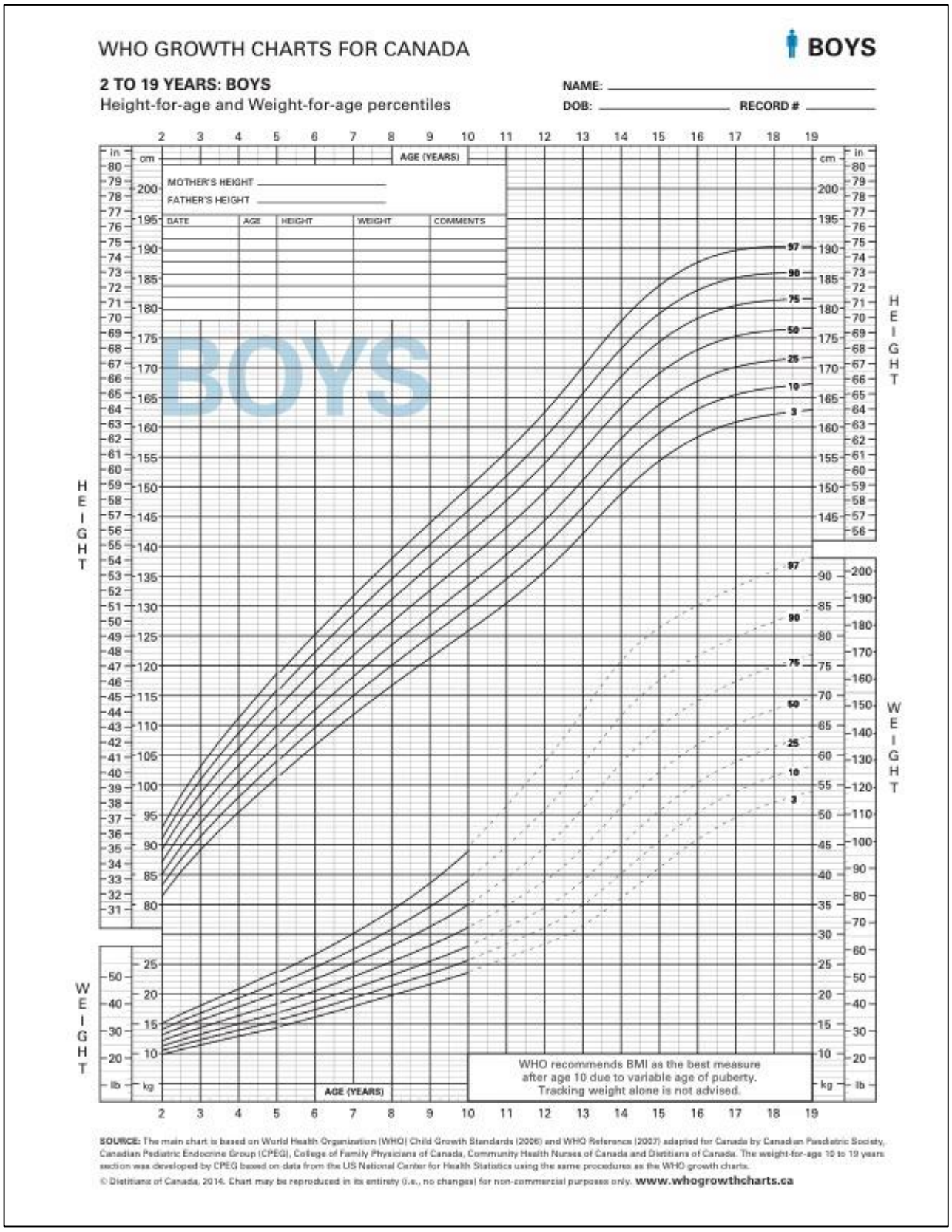
Contact psychiatry on-call to review assessment results

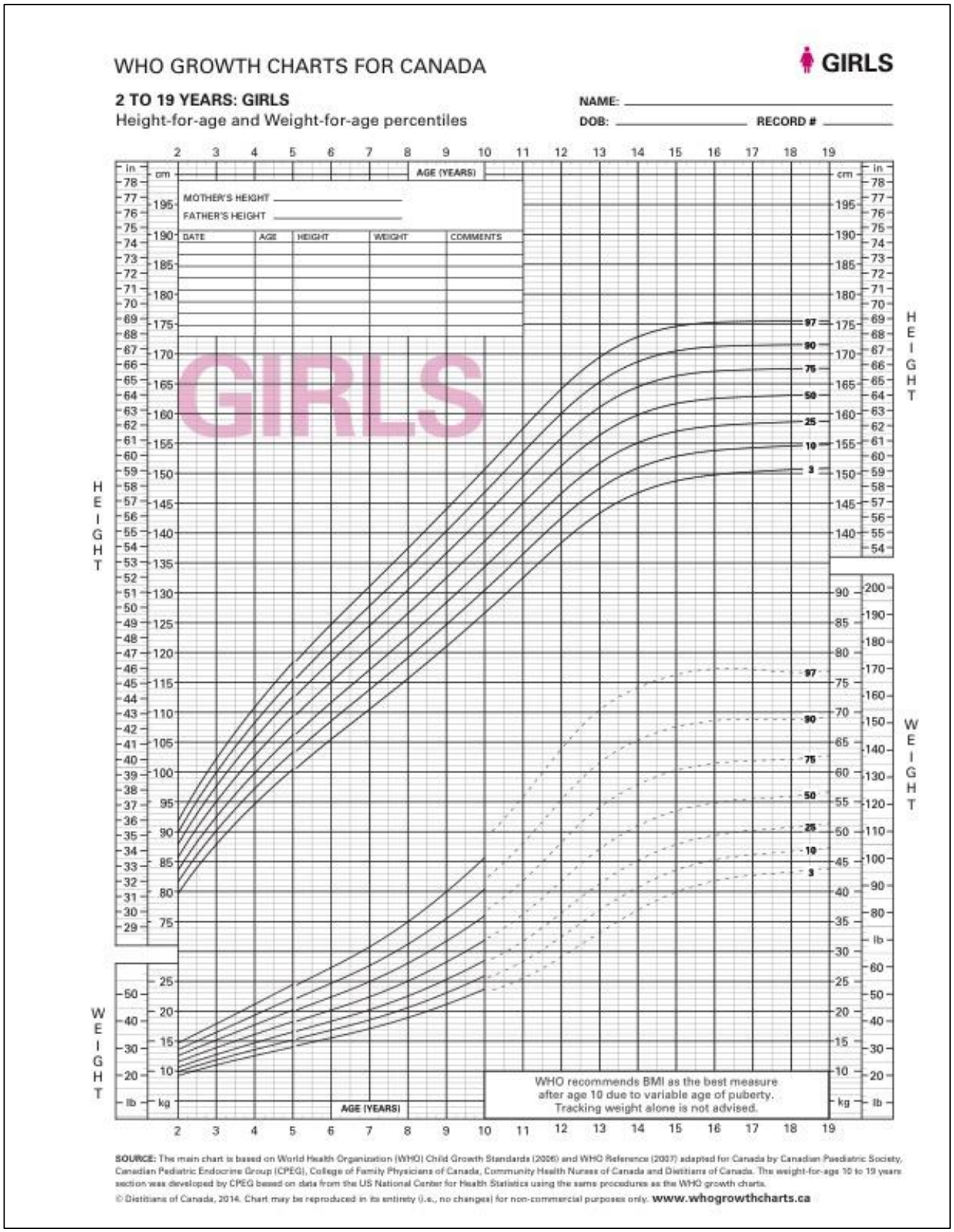
- ☐ Appearance: _____
- ☐ Behaviour: _____
- ☐ Speech: _____
- ☐ Sleep pattern: _____
- ☐ Mood: _____
- ☐ Emotion (assess depression/anxiety): _____
- ☐ Thought process and content: _____
- ☐ Insight and judgement: _____
- ☐ Self-harm injury (current/past): _____
- ☐ Suicidal ideation (current/past): _____
- ☐ Homicidal ideation (current/past): _____

7. Diagnostic impression/diagnosis: _____

8. Plan of Care and follow-up support: _____

Appendix B: WHO Canadian Growth Charts for Boys and Girls





WHO GROWTH CHARTS FOR CANADA

GIRLS

2 TO 19 YEARS: GIRLS

Height-for-age and Weight-for-age percentiles

NAME: _____

DOB: _____ RECORD # _____

AGE (YEARS)

MOTHER'S HEIGHT _____

FATHER'S HEIGHT _____

DATE	AGE	HEIGHT	WEIGHT	COMMENTS

GIRLS

HEIGHT

WEIGHT

97 90 75 50 25 10 3

WHO recommends BMI as the best measure after age 10 due to variable age of puberty. Tracking weight alone is not advised.

SOURCE: The main chart is based on World Health Organization (WHO) Child Growth Standards (2006) and WHO Reference (2007) adapted for Canada by Canadian Paediatric Society, Canadian Pediatric Endocrine Group (CPEG), College of Family Physicians of Canada, Community Health Nurses of Canada and Dietitians of Canada. The weight-for-age 10 to 19 years section was developed by CPEG based on data from the US National Center for Health Statistics using the same procedures as the WHO growth charts.

 www.whogrowthcharts.ca

Appendix C: Pediatric Eating Disorders Unstable Patient Medical Admission Orders (10-111-5251)

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Pediatric Eating Disorders
Unstable Patient Medical Admission Orders **Page 1 of 2**

PATIENT LABEL

Allergies: ☐ None known ☐ Unable to obtain
List with reactions: _____

Weight: _____ kg ___ age percentile (%)
Height: _____ cm ___ age percentile (%)
BMI: _____

Note: Patients may be admitted under a pediatrician at the University Hospital of Northern British Columbia (UHNBC) if under 17 years of age or if currently followed by a pediatrician.

Activity (reassess every 24 hours)
- Strict bed rest upon admission for the first 24 hours. Please refer to activity guidelines in the Pediatric Eating Disorders Package. (Patient may not leave room without physician order.)

Assistance required: ☐ Nurse assisted washroom/shower ☐ Wheelchair to appointments
☐ Must use shower seat ☐ Independent bathroom privileges, if safe
☐ Limit length of shower to 10 minutes or less once per day

☐ After 24 hours, reassess and indicate new activity level: _____

Indicate amount/level of activity per day and any other activity restrictions. Off-unit passes are contraindicated if patient is medically unstable.

_____

_____

Vital signs (reassess every 24 hours)
- Continuous cardiac monitoring (telemetry) if heart rate is under 50 bests per minute if patient is awake or sleeping or if heart rate shift is more than ___ beats per minute
- Orthostatic vitals twice daily (once after lying supine for 5 minutes and once after standing for 2 minutes)
- Vital signs every 4 hours until stable. Blood pressure and temperature may be omitted between 2400 and 0600 when patient is asleep)

☐ Vital signs every 6 to 8 hours when medically stable and orthostatic vital signs 3 times a week until discharged

Contact physician on call if:
- Patient's heart rate is less than 50 beats per minute
- If heart rate shift is greater than 30 beats per minute (lying supine for 5 minutes to standing for 2 minutes)
- Patient's systolic blood pressure is less than _____ mmHg
- Patient's systolic blood pressure change is greater than 20 mmHg (lying supine to standing)
- If temperature is below 36°C
- Patient's blood glucose is less than 3.5 mmol/L
- Patient refuses oral intake of one snack plus one meal

Physician signature: _____ **College ID:** _____ **Date:** _____ **Time:** _____

10-111-5251 (LC - Pharmacy - DRAFT#4 - 08/16) **Review by December 2019**

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Pediatric Eating Disorders
Unstable Patient Medical Admission Orders *PATIENT LABEL*

Laboratory

Obtain the below blood work upon admission and then once daily in the morning for the first 5 days of admission. If signs of refeeding syndrome exist, please contact the pediatrician on call.

- Bicarbonate level, serum
- Calcium level, serum, ionized
- Chloride level, serum
- Creatinine level, serum
- Glucose random level, serum
- Magnesium level, serum
- Potassium level, serum
- Phosphate level, serum
- Sodium level, serum
- Urea level, serum

Obtain the following upon admission and repeat as needed:

- Alanine aminotransferase (ALT)
- Albumin
- Amylase (for purging behaviours, specify lab indication as not pancreatic)
- Aspartate aminotransferase (AST)
- Billirubin
- Complete blood cell count with automated white blood cell differential
- Creatinine kinase
- Erythrocyte sedimentation rate
- Follicle stimulating hormone (FSH), leutinizing hormone (LH), estradiol (females)
- Follicle stimulating hormone (FSH), leutinizing hormone (LH), testosterone (males)
- Gamma - glutamyl transferase (GGT)
- Lactate dehydrogenase
- Prealbumin
- Tissue transglutaminase antibody
- Thyroid stimulating hormone
- Vitamin D (25 - hydroxy)
- Urinalysis
- Urine beta-hCG (females)
- Urine drug screen/toxicity panel

Other investigations:

- 12 - lead electrocardiogram upon admission and reassess need for repeat

Physician signature: _____ **College ID:** _____ **Date:** _____ **Time:** _____

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Pediatric Eating Disorders
Unstable Patient Medical Admission Orders Page 3 of 3 | *PATIENT LABEL*

Diet/intake

- Date and stamp a blank Daily Intake Log and give it to the caregiver or 1:1 staff member at 0800 daily
- Collect the completed Daily Intake Log after evening snack and place it in patient's chart daily
- All meals to be supervised by 1:1 or nursing staff, including 30 minutes post snack and 60 minutes post meals. No bathroom privileges during this time unless accompanied by staff members.

Dietary orders

- Consult inpatient dietitian upon admission
- No outside food or drink, chewing gum, caffeine or artificial sweeteners
- No meal plan substitutions unless reviewed by dietitian
- Refeeding Meal Plan Order: _____
  Dietitian will indicate an initial meal plan from NH's electronic food services system (CBORD). Refer to Northern Health's Pediatric Eating Disorder Resource Guide for direction on meal plan choice. Dietitian will determine nutritional status and assess ongoing nutritional support required during admission.
- If patient is admitted on weekend or after hours, please initiate meal plan at 1000 kcal/day or higher as per admitting physician's discretion and leave a message with [illegible] inpatient dietitian that you have a pediatric eating disorder patient admitted for refeeding.
- No vegan diets allowed
- May have up to a maximum of 1L free water daily
- Pedialyte 200 mL PO with every meal and every snack (total 1200 mL/day)

IV solutions (if required)

☐ D5NS IV at _____ mL/h; approximately _____ percent of daily maintenance fluids x _____ hours

☐ D5NS IV plus 40 mmol/L KCl at _____ mL/h; approximately _____ percent of daily maintenance fluids x _____hours

Medications

- **See medication reconciliation form**

☐ **sodium phosphate** 500 mg PO bid
☐ **elemental magnesium** 250 mg PO tid (if serum magnesium below normal)
☐ **potassium chloride** 600 mg PO bid (if serum potassium below normal)
☐ **polyethylene glycol** (PEG) 3350 17 g PO once a day

Additional patient care measures

- Bedside blood glucose monitoring minute post-meals and at 0200 for the first 48 hours of admission
- If patient has refused a meal or snack, then check bedside blood glucose every 2 hours until a meal or snack is consumed
- Pre-breakfast, post-void AM weight every Monday, Wednesday and Friday (gown/underwear only, same scale). Please weigh with patient's back to the scale and do not advise patient of the weight.
- Strict ins and outs daily
- Assess bowel routine daily
- Call pediatrician on-call for patients under 17 years of age in catchment area for consult and to consider transfer to higher level of treatment facility as needed
- Consult inpatient psychiatry for assessment
- Contact the Northern Regional Eating Disorders Team at 250-565-7479 and indicate inpatient consultation referral

For further inpatient support, please contact BC Children's Inpatient Eating Disorders Program at 1-604-875-2200 and indicate inpatient support for an unstable pediatric eating disorders admission.

Physician signature: _____ **College ID:** _____ **Date:** _____ **Time:** _____

Appendix D: Child (19 Years or Less) Admission Activity Guidelines (10-035-5026)

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All Sites and Facilities

Child (19 Years or Less) Admission Activity Guidelines

 PATIENT LABEL

Level	Minimum health requirements	Activity type	Activity examples	Duration and frequency	Minimum nutrition requirement per session	Days off required
Level 1	BMI 16 or less (equal to or less than 3%)	Bed rest	Bathroom and wheel chair to appointments	**Reassess activity limits every 24 hours until medically stabilized** Off unit activities are contraindicated until medically stabilized.		
Level 2	BMI 16 to 17 (equal to or less than 3%)	Bed rest	Independent bathroom privileges (if safe) and wheel chair to appointments	**Reassess activity limits every 24 hours until medically stabilized** Off unit activities are contraindicated until medically stabilized. School correspondence is encouraged if patient is deemed medically stable by physician and meal plan has progressed to include snacks.		
Level 3A	BMI 17: Minimum 4% target (equal to or greater than 8%)	Flexibility training	Stretching, light walking, school correspondence only	15 min 3/week	1 food item	4 days off
Level 3B	BMI 17: Minimum 4% target (equal to or greater than 8%)	Flexibility training	Attending classes in person	If patient is attending classes in community or through the hospital in person, then no further activity outside of class is recommended. Gym classes are contraindicated at this time.	If youth is attending school classes in person, recommendations would be return to school for half days 3 times a week and one snack to be provided and supervised by staff or care provider during that time with 2 food items (one starch and one protein) provided.	
Level 4A	BMI 17.5: Minimum 8% target (equal to or greater than 10%	Flexibility training	Stretching, light walking, school correspondence only	20 min 3/week	1 food item	4 days off
		Flexibility training	Attending classes in person	If patient is attending classes in community or through the hospital in person, then no further activity outside of class is recommended. Gym classes are contraindicated at this time.	If youth is attending school classes in person, recommendations would be return to school for half days 5 times a week and one snack to be provided and supervised by staff or care provider during that time with 2 food items (one starch and one protein).	
Level 5	BMI 18 Minimum 10% target (equal to or greater than 15%)	Flexibility training	Attending classes in person	20 min 4/week	2 food item (1 starch and 1 protein)	3 days off
				If patient is attending classes in community or through the hospital in person, then limited activity outside of class is recommended. Gym classes can be considered at this time if considered light in activity level.	If youth is attending school classes in person, recommendations would be return to school for full days 3 times a week and two half days for example. one snack required for half days and two snacks required for full days of school. Snack to be provided and supervised by staff or care provider during that time with 2 to 3 food items (minimum of one starch and one protein, max 1 fruit) provided and all activity must be compensated with additional nourishment as indicated by dietitian.	

Note: All activity levels listed may be increased dependent on ongoing patient progression towards target goal weight and adequate caloric intake compensates for any increased activity levels.

10-035-5026 (LC - Appr. - 11/16)

Created February 2016
Revised November 2016

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All Sites and Facilities

Child (19 Years or Less) Admission Activity Guidelines

 PATIENT LABEL

Level	Minimum health requirements	Activity type	Activity examples	Duration and frequency	Minimum nutrition requirement per session	Days off required
Level 6	BMI 18.5 Minimum of equal to or greater than 15% target (equal to or greater 16.5%)	Flexibility training	Stretching Yoga/pilates (Level 1)	20 min 3/week 60 min 1/week	1 food item 2 food items, max 1 fruit	3 days off for all activities if school correspondence only 4 days off if attending school classes and engaging in extracurricular activities
		Strength training	Isometric exercise, resistive training with light weight or elastic bands, fishing	15 min 3/week 40 min 1/week	2 food item 2 food items, max 1 fruit	
		Light to moderate cardio (20 to 40%) then progress to 40 to 60% of maximum heart rate. discuss progression and heart rate maximum levels with physician.	Light walk or hike, gardening, kayaking	30 min 3/week	2 food item	
		Attending school full-time	5 full days a week, to include morning and afternoon supervised snacks and lunches with 3 food items (1 starch, 1 protein and max 1 fruit). Full participation in gym class to commence.			
Level 7	BMI 19 Minimum of equal to or greater than 15% target (equal to or greater 16.5%)	Flexibility training	Stretching, yoga/pilates (Level 1)	20 min 3/week 60 min 1/week	1 food item 2 food items, max 1 fruit	3 days off
		Moderate cardio at 40 to 50% target heart rate	Baseball or fastball, swimming, skating, biking, volleyball, dancing, moderate hiking/hunting	20 min 3/week 60 min 1/week	A starch, milk or protein 3 to 4 food items, max 1 fruit	
Level 8	BMI 20 or greater Minimum of equal to or greater than 16.5% target (equal to or greater 18%)	Flexibility training	Stretching, yoga/pilates (Level 2)	20 min 3/week 60 min 1/week	1 food item 2 food items, max 1 fruit	3 days off
		Moderate cardio at 40 to 60% target heart rate	Soccer or football, swimming, hockey and speed skating, mountain biking, basketball, low impact aerobic	25 min 3/week 60 min 1/week	2 food items, max 1 fruit 4 food items, max 1 fruit	

Note: All activity levels listed may be increased dependent on ongoing patient progression towards target goal weight and adequate caloric intake compensates for any increased activity levels.

Created February 2016
Revised November 2016

Appendix E: Pediatric Eating Disorders Checklist (10-035-5028)

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Pediatric Eating Disorders Checklist

PATIENT LABEL

Hospital admission date: _____ Estimated date of discharge: _____

Diagnosis at discharge (medical and psychiatric): _____

Medical management (include Canadian WHO growth chart with referral):

☐ Current height: _____ cm Age percentile: ___ %

☐ Admission weight: _____ kg Age percentile: ___ % ☐ BMI: _____ kg/m²

☐ Discharge weight: _____ kg Age percentile: ___ % ☐ BMI: _____ kg/m²

☐ Target community goal weight: _____ kg Age percentile: ___% ☐ BMI: _____ kg/m²

☐ Activity progression during admission (i.e., bed-rest; activities as tolerated, etc): _____

_____

☐ Activity level at discharge (indicate any restrictions): _____

☐ **Discharge vital signs**

Orthstatic vital signs: Blood pressure (BP) and heart rate (HR)

	(resting for 5 minutes) Lying or sitting		(standing for 2 minutes) Standing	Orthostatic
BP	mmHg	mmHg	mmHg	mmHg
HR	bpm	bpm	bpm	bpm

Please refer to clinical record for ongoing medical monitoring and notify physician immediately if there is any weight loss or vital sign discrepancy during course of admission.

Referral and education information

Action item	Notes	Completed by (print name and initial)	Date completed
Referral to the Northern Health Regional Eating Disorders Clinic (phone number: 250-565-7479)	*Mental Health and Addictions staff to complete the Inter-program Transition Form and notify family and patient of referral*		
Referral to inpatient dietitian	*Inpatient staff to complete referral and notify family and patient of referral*		
Family resource package for eating disorders (refer to NH EDC to obtain a copy)	*Inpatient staff to review the booklet with family and patient*		
Review the Kelty Mental Health Eating Disorders website with Patient & Family at www.keltyeatingdisorders.ca	*Inpatient staff to review the website with family and patient*		
Watch the BC Children's meal support video with patient and family at www.keltyeatingdisorders.ca	*Inpatient staff to provide a space for family and patient to watch video while on the unit.*		

10-035-5028 (LC - Appr. - 09/16)

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All Sites and Facilities

Pediatric Eating Disorders Checklist

 PATIENT LABEL

Nutritional summary

☐ Admitting meal plan: _____

_____

☐ Interim meal plan (only if transferred to inpatient adolescent psychiatry unit): _____

☐ Dietary allowances or restrictions: _____

☐ Summary of nutritional restoration: _____

☐ Nutritional recommendations and goals (review with patient and family): _____

_____

☐ Discharge meal plan (attach copy): _____

Safety planning

☐ Substance use: _____

☐ Suicidal ideation: _____

☐ Self-injury: _____

Discharge follow-up information: Fax form to all contacts listed below

Community partners	Follow-up		Contact information	
	Date	Time	Phone	Fax
☐ **Psychiatrist** Name: _____				
☐ **Pediatrician** Name: _____				
☐ **Family doctor/nurse practitioner** Name: _____				
☐ **Therapist/counsellor** Name: _____ Program: _____				
☐ **Outpatient dietitian** Name: _____				
☐ **School** Name: _____ Contact: _____				
☐ **Other** Name: _____ Program: _____				

Discharge summary information: Please attach completed discharge summary, related blood work and diagnostic results to the physician/specialist in care.

Form completed by: _____ **Signature:** _____ **Designation:** _____

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