Nutritional Rehabilitation Protocol for Patients with Weight Loss, Malnutrition, and Eating Disorders

Criteria for admission - patient’s condition demonstrates any of the following: Severe electrolyte abnormalities; cardiac arrhythmias including prolonged QT interval; hemodynamic instability including HR < 50 bpm; blood pressure <90/60 or with significant orthostatic changes (>20 beats/minutes when stands up or 10 mm decrease in systolic BP); renal compromise; hepatic compromise; patient eating < 500 cal/day for last 3 days (acute food refusal); ketosis; severe malnutrition (<75% median BMI, BMI z-score ≤ -3; loss of >10% of typical body weight; deceleration across 3 Z-score lines; intake of ≤ 75% of estimated caloric needs )

Criteria for discharge - patient must demonstrate all of the following: Corrected electrolyte abnormalities; off electrolyte supplementation for 24 hours; No longer at risk for Refeeding Syndrome; HR>45 overnight X 48 hours; HR>50 during the day X 48 hours; no pre-syncope with orthostatics; normal blood pressures, including with orthostatics

Anticipated Length of Stay: 6-14 days

INPATIENT PATHWAY

<table>
<thead>
<tr>
<th>ASPECT OF CARE MGMT.</th>
<th>ADMISSION DAY</th>
<th>DAY 1</th>
<th>DAY 2 +</th>
<th>24-48 HOURS BEFORE DISCHARGE</th>
<th>DAY OF DISCHARGE</th>
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</thead>
<tbody>
<tr>
<td>NURSING</td>
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<tr>
<td>Obtain nursing database and contact the nutritionist on call</td>
<td>Daily Assessment</td>
<td>Same as previous, except vital signs every 4 hours</td>
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<tr>
<td>Admission weight – void, then have patient change into gown, and perform blinded weight. Record scale # in Epic</td>
<td>Vital signs every 4 hours</td>
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<tr>
<td>Vital signs on admission and every four hours</td>
<td>Strict intake and output</td>
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<tr>
<td>Telemetry, continuous</td>
<td>Orthostatics QAM prior to breakfast (check HR and BP after 5 minutes supine and then after 2 minutes of standing). Note if symptomatic in Epic</td>
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<tr>
<td>Strict intake and output</td>
<td>Weight before breakfast, after orthostatics. Have patient void, then change into gown. Obtain blinded weight. Record scale # in Epic</td>
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<td>Telemetry, continuous</td>
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Created by: M. Zucker, L. Swift, K. Perez
Department: LES Adolescent Medicine
Creation Date: 3/1/2020
Version Date: 10/2020
<table>
<thead>
<tr>
<th>LABORATORY / DIAGNOSTIC MONITORING</th>
<th>▪ CMP, Magnesium, Phosphorous, Vitamin D, Methylmalonic Acid, CBC, Ferritin, Iron profile, ESR, Celiac Panel, LH, FSH, Estradiol/Testosterone, TSH with reflex to Free T4, Urinalysis, ECG</th>
<th>▪ BMP, Magnesium Phosphorous QAM (6 am draw)</th>
<th>▪ BMP, Magnesium Phosphorous QAM (6 am draw)</th>
<th>▪ BMP, Magnesium Phosphorous QAM (6 am draw) – at least first 5 days of refeeding and while increasing calories</th>
<th>▪ Consider BID labs on an individual basis</th>
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</thead>
<tbody>
<tr>
<td>MEDICATION</td>
<td>▪ Complete medication reconciliation</td>
<td>▪ Non-formulary medications from home ordered to continue in hospital should be brought to pharmacy for verification</td>
<td>▪ Order medications on admission as appropriate:</td>
<td>▪ If ferritin low, or TIBC elevated - start Ferrous sulfate 325 mg daily – BID</td>
<td>▪ If MMA elevated, indicative of vitamin B12 deficiency – start PO 250 mcg cyanocobalamin daily</td>
<td>▪ Vitamin D Supplementation indicated if &lt; 30 mg/mL - &gt; 12 year of age: supplement 2000-5000 units/day or as per RD recommendation</td>
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<tr>
<td>Multivitamin</td>
<td>Age:</td>
<td>Dose:</td>
<td>Pediatric Multivitamin</td>
<td>Adult Multivitamin</td>
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<tr>
<td>&lt;13 y/o</td>
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<td>≥13 y/o</td>
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<tr>
<td>Thiamine (supplement for 8 weeks total)</td>
<td>Weight:</td>
<td>Dose:</td>
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<tr>
<td>&lt;40 kg</td>
<td>50 mg PO/day</td>
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<tr>
<td>&gt;40 kg</td>
<td>100 mg PO/day</td>
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<tr>
<td>Zinc (supplement for 8 weeks total)</td>
<td>If Patient is on Chewable MVI (e.g. Flintstones) or Adult MVI with Zinc</td>
<td>Weight:</td>
<td>Dose:</td>
<td>No additional supplementation</td>
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<tr>
<td>&lt;25 kg</td>
<td>15 mg PO/day</td>
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<td>≥ 25 - 39.9 kg</td>
<td>30 mg PO/day</td>
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<tr>
<td>&gt;40 kg</td>
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<tr>
<td>If Patient is Not on MVI</td>
<td>Weight:</td>
<td>Dose:</td>
<td></td>
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<tr>
<td>&gt;40 kg</td>
<td>45 mg PO/day</td>
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<td>If a patient is borderline/just under 40 kg and anticipated to gain to 40 kg quickly, can prescribe dosing for &gt; 40 kg (may receive call from pharmacy and need to override)</td>
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## Nutrition / Hydration
- Regular diet with calorie counts until protocol started
- Start protocol at 2000 calories daily if possible based on timing of admission
- Refer to RD for recommendations for goal calories
- No snack/meal substitutions allowed
- If not started on day of admission, start at 2000 calories daily
- Refer to RD for recommendations for goal calories
- Refer to RD for recommendations for fluid minimum and maximum
- No snack/meal substitutions allowed
- Advance 300-400 calories daily as per RD
- Refer to RD for recommendations for fluid minimum and maximum
- No snack/meal substitutions allowed
- Plan to increase by 400 calories at discharge
- No snack/meal substitutions allowed

### REE Equation
<table>
<thead>
<tr>
<th>Age</th>
<th>Males</th>
<th>Females</th>
</tr>
</thead>
<tbody>
<tr>
<td>3 – 10 y</td>
<td>(22.7 \times \text{wt \ [kg]}) + 495</td>
<td>(22.5 \times \text{wt \ [kg]}) + 499</td>
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<tr>
<td>10 – 18 y</td>
<td>(17.5 \times \text{wt \ [kg]}) + 651</td>
<td>(12.2 \times \text{wt \ [kg]}) + 746</td>
</tr>
</tbody>
</table>

### Calorie Goal Equation
<table>
<thead>
<tr>
<th>Age</th>
<th>REE x 2-3 \</th>
<th>REE x 2.5-3.5</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt; 12 y</td>
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<tr>
<td>\geq 12 y</td>
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## Patient / Family Education
- Give and explain patient/family pathway and meals handout
- Continues to provide education to patient and family
- Reinforce guidelines, rules
- Continues to provide education to patient and family
- Reinforce guidelines, rules
- Psychology F/U regarding illness, treatment options, etc.
- Continues to provide education to patient and family
- Reinforce guidelines, rules
- Discharge teaching

## Consults / Family Meetings
- Adolescent Medicine
- Psych
- Dietician
- Child Life
- Social Work
- Adolescent Medicine F/U
- Child Life
- Adolescent Medicine F/U
- Psych F/U
- Multidisciplinary family meeting
- Dietician teaching for parents only

## Safety / Activity
- Bed rest with bathroom privileges
- Out of bed for all meals and snacks, sitting in chair, in a gown
- Patient is not permitted to use bathroom during meals, snacks, and rest periods
- RN/LPN/PCT accompanies at all meals
- Bathroom door open, RN/LPN/PCT present; no flushing, no turning on faucet
- Same as previous days EXCEPT
- Parent may replace RN/LPN/PCT during meals and snacks if approved by team
- At the discretion of the team, add one wheelchair ride. Then, advance gradually to 3 wheelchair rides.
- When approved by team, transition gradually to three 10-minute walks daily.
- Seated 10-minute shower, after am vitals, and prior to breakfast. Door must remain partially open. Supervision during the shower at discretion of the team.
- Patient is not to be told their weight/calorie count unless delivered by the team.
- Patient is not permitted to leave the unit except for supervised Child Life/Art Therapy/Music Therapy activities.
- Patient may attend Art and Music Therapy if approved for wheelchair rides/or walks (counts as a ride/walk).
- Patient is not permitted to receive food or chewing gum from family or visitors.
- No visitors (other than parent/caregiver) or phone calls allowed at meal/snack time and rest time.
- Distraction during mealt ime is permitted (music, TV, etc.) as long as parents approve.
- Patient is not permitted to walk to or loiter at nurses’ station.
- Patient is not given the opportunity to read her/his chart, including the calorie count form.
- Patient is not allowed to access content (via TV, internet, etc.) about fashion, food, exercise, weight or nutrition.
- Additional sitter if ordered.

**Patient Meal Time**

**Regular diet with calorie counts until protocol started**

**Meal preparation:**
- RN or PCT prepares tray (parent may assist with meal selection later during hospital stay after teaching from RD, if approved).
- Meals are limited to 30 minutes and snacks to 15 minutes.
- All food with calories on the package must come out of the package.
- Menu must be taken off tray before being served to patient.
- Check calories to ensure they add up correctly.
- If food is missing, contact dietitian or diet office to obtain adequate replacement.
- If the condiment does not need to be consumed (ketchup, mustard, salt, pepper) it will be marked “FREE” and it is the patient’s choice to consume it or not. All other condiments (dressing, mayo, salsa) must be consumed.
- RN or PCT (or later, parent) may not leave the room until the meal and rest period is finished.

**End of Meal:**
- After 30 minutes (15 for snack), RN or PCT will remove any unfinished foods.
- The amount of uneaten food is replaced with room temperature supplement, using the menu’s calorie list as a guide.
- Patient has 15 minutes to drink the supplement. If the patient does not drink the supplement, the resident and attending physician are notified.
- Give the remaining supplement via NG tube. Bolus feed unless otherwise specified by team.
- Remove NG tube after feeding unless directed otherwise by team
- If the patient vomits a meal, the calories will be replaced after the attending physician is consulted

**Documentation:**
- RN will record the food, the amount given, and amount eaten and place it in the patient’s chart
- DO NOT keep the Calorie Count sheets in the patient’s room
- RN will record the amount of supplement replacement given and the route (PO or NGT) on the patients’ flow sheet
- If team member is concerned about parent behavior during meals, notify team and make recommendations to limit parent involvement if necessary

### REST PERIODS

**Rest periods** start immediately after the patient completes a meal or snack
- Rest periods are 60 minutes
- Patient is not allowed to go to bathroom, brush teeth or wash hands
- Patient may be given a damp cloth to clean hands or a bedpan if needed while she/he is in bed
- No visitors are allowed during rest periods with the exception of parents/primary caregiver
- Patient may watch TV, listen to music or do quiet activities in bed (e.g. reading or writing)

### D/C PLANNING - CLINICAL RESOURCE MANAGEMENT

| • Identify payer source | • Review psych consult for recommendations.  
| | If pursuing FBT, discuss follow-up care with team  
| | If inpatient/PHP care recommended, d/w team for appropriate facility referrals  
| | Initiate any inpatient referral | • Psych review Home Hospital Protocol with patient, if appropriate  
| | | Dieticians will provide teaching/recommendations to parents only  
| | | Monitor for further case management interventions  
| | | Continue to facilitate transition of care as appropriate | • Increase calorie goal by 400 calories once at home  
| | | Discontinue planned walks once at home  
| | | If appropriate, facilitate transfer to other facility, including transport |