Heart Failure Toolkit

The Gold Standard Companion to the Academy of Nutrition and Dietetic’s Evidence-Based Nutrition Practice Guideline
Heart Failure Toolkit

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A special thanks to Sherri Jones, MS, MBA, RD, LDN who provided expertise on the ADA Nutrition Care Process/Standardized Language and contributed to the format of the toolkit progress notes.
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Overview

Introduction
The Academy of Nutrition and Dietetics’ (Academy) (formerly the American Dietetic Association) Heart Failure Evidence-Based Nutrition Practice Guideline incorporates systemically reviewed scientific evidence for heart failure. The guideline defines evidence-based recommendations, which guides the food and nutrition practice decisions and increases the likelihood of use of evidence-based interventions by the registered dietitian (RD) and the likelihood of achieving positive patient outcomes.

The Heart Failure Evidence-Based Nutrition Practice Guideline can be accessed online in the Evidence Analysis Library at www.adaevidencelibrary.com. The information within the guideline and toolkit were derived based on the Academy’s rigorous and systematic process of analyzing scientific research. Within the nutrition practice guideline, you will find the guideline introduction, evidence-based recommendations and clinical algorithms that relate to heart failure. This toolkit was designed to be a companion set of documents to the guideline as well as a resource that can be used independently from the guideline.

The Heart Failure Toolkit contains the Medical Nutrition Therapy (MNT) protocol and documentation forms that can be used for the implementation of the guideline. This set of companion documents focuses on the Academy’s Nutrition Care Process, which consists of the nutrition assessment, nutrition diagnosis, nutrition intervention and nutrition monitoring and evaluation. The primary goal of MNT is aimed at managing symptoms of heart failure (edema, shortness of breath, fatigue), and maintaining optimal nutrition status. The Heart Failure Toolkit integrates components of the Nutrition Care Process.

Heart Failure
Heart failure is a common disease among the elderly. It is the most common diagnosis of hospital admission in patients over age 65. It accounts for greater than one million hospitalizations per year at a cost of $39.2 billion annually in the United States. Median length of stay is five to six days. Non-compliance with medications and/or diet is the most common cause of these admissions. (1)

According to the 2009 American College of Cardiology and American Heart Association (ACC/AHA) Practice Guidelines, the term “congestive heart failure” has been replaced by “heart failure” because it is a chronic disease and the patients may not exhibit congestion as a symptom. (2)

In heart failure, the heart enlarges and the pumping ability is weakened. An echocardiogram is the diagnostic test for heart failure. A left ventricular ejection fraction (LVEF) of 45% or less indicates systolic heart failure. Heart failure develops from:
- Coronary artery disease (CAD)
- Myocardial infarction (MI)
- Uncontrolled hypertension (HTN)
- Valvular disease
- Idiopathic cardiomyopathy
- Toxins (drug and alcohol abuse, chemotherapy)

The symptoms of heart failure include:
- Fatigue
- Exercise intolerance
- Edema
- Shortness of breath. (3)

The treatment for heart failure symptoms should be based on a comprehensive nutrition assessment to maximize adequate intake and control the symptoms of the disease. The goals of nutrition care include a reduction in sodium and fluid intake and the monitoring of calories, protein and nutrient needs. It is important
to note that the heart failure guidelines from the EAL would be more appropriate than the Dietary Guidelines for Americans in the dietary intervention for a patient with heart failure. An individualized nutrition care plan with practical recommendations should include consideration of the New York Heart Association Functional Classification (NYHA):

- NYHA Class I: Asymptomatic; patient is not short of breath or fatigued with any activity
- NYHA Class II: Patient is short of breath or fatigued after moderate activity (such as climbing two flights of stairs, golfing nine holes, or carrying a load of wash up from the basement)
- NYHA Class III: Patient is short of breath or fatigued even after very mild exertion (such as walking around the house or up a half flight of stairs)
- NYHA Class IV: Patient is exhausted, short of breath, or fatigued at rest (just sitting still or lying in bed). (3,4)

In addition, the RD has an active role in assisting the multi-disciplinary team in designing the optimal nutrition prescription that coincides with pharmacotherapy. The nutrition prescription and nutrition outcomes monitors are based on disease severity, co-morbid conditions, and conditions related to HF such as chronic renal insufficiency.

Depending on the client’s treatment plan and co-morbid conditions, recommendations from other Academy Evidence-Based Nutrition Practice Guidelines may apply. To access these guidelines see the Evidence Analysis Library at [www.adaevidencelibrary.com](http://www.adaevidencelibrary.com).

**Heart Failure Toolkit Contents**

Included in the toolkit are the following documents. Use of the toolkit documents assume the knowledge of the Academy’s Nutrition Care Process and Standardized Language. For additional information on the Nutrition Care Process and Standardized Language see [http://www.eatright.org/ncp](http://www.eatright.org/ncp).

**Medical Nutrition Therapy Protocol for Implementing Heart Failure Evidence-Based Nutrition Practice Guideline:**

The following three documents define the level, content, and frequency of nutrition care that is appropriate based on the Nutrition Care Process.

- **Heart Failure Evidence-Based Nutrition Practice Guideline - Executive Summary of Recommendations:**
  The list of recommendations and ratings as listed on the EAL.

- **Medical Nutrition Therapy Flowchart of Encounters for Heart Failure:**
  An overview of the recommended process that includes the timeline and a brief description of how to conduct each client encounter organized by nutrition assessment, diagnosis, intervention, evaluation and monitoring.

- **Medical Nutrition Therapy Encounter Process for Heart Failure:**
  A detailed set of instructions for each client encounter organized by nutrition assessment, diagnosis, intervention, evaluation and monitoring; specifically describes suggested clinical and nutritional data to obtain related nutrition diagnoses, pertinent nutrition education and the outcomes to measure and evaluate. Information in this form is valuable for training and orienting new staff or students and for competency evaluations.

- **Heart Failure Recommendations with Associated Standardized Language Terms**
  This document lists the Heart Failure Evidence-Based Nutrition Practice Guideline recommendations and their associated standardized language terms to be considered when implementing the specific recommendation. The terms associate the EAL recommendations to the Nutrition Care Process (NCP) standardized language terminology as published in the International Dietetics & Nutrition Terminology (IDNT) Manual. (5).
  The RD and/or Dietetic Technician Registered (DTR) should refer to this list of identified terms when providing nutrition care and documenting on the Nutrition Progress Notes. The recommendations list the strength indicated Strong, Fair, Weak, Consensus and Insufficient Evidence. See the complete the Recommendation Rating scale at [http://www.adaevidencelibrary.com/topic.cfm?cat=2690](http://www.adaevidencelibrary.com/topic.cfm?cat=2690)

**Documentation Forms:**

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The following documents include forms for referral purposes and for documenting patient/client care.

- **Instructions for Referral Form** and **Referral for Medical Nutrition Therapy**:
  An overview for using or adapting the Referral for Medical Nutrition Therapy and a one-page form for providers to complete in order to support the need for medical nutrition therapy and give the practitioner a brief health history on the client.

- **Medical Nutrition Therapy Heart Failure Progress Note (Initial and Follow-up)**:
  Documentation forms for the paper or electronic medical record, uses narrative notation to be used at each encounter for the specific disease or condition. Forms should be used in coordination with the most current ACADEMY Nutrition Care Process/Standardized Language reference manual, the IDNT Reference Manual, Standardized Language for the Nutrition Care Process. To purchase the publication or find more information on the Nutrition Care Process and Standardized Language see [http://www.eatright.org/ncp](http://www.eatright.org/ncp).

  - The progress notes provided in the toolkit utilize the IDNT common to heart failure. The forms can be used as provided and also may be adapted to include more specific information based on institutional, dietitian’s or specific population needs. Though the forms provide a comprehensive and exhaustive documentation example, it’s important to note that the dietitian will use critical thinking skills to determine the extent of the documentation during the assessment. Critical thinking skills are important for determining the appropriate data to collect, distinguishing relevant from irrelevant data and distinguishing important form unimportant data. This assessment, in turn, allows the dietitian to focus on the key nutrition problem(s) and formulate the appropriate nutrition intervention to address the problem(s).

  - Further, the forms can be used as models for developing nutrition documentation tools in electronic health records (EHR). The inclusion of the NCP and IDNT in the progress notes provides a foundation for dietitians to incorporate nutrition information into electronic health records (EHR). Since EHRs will soon become mandatory in United States health institutions, it is essential that dietitians collaborate with their EHR development team to ensure the IDNT language is incorporated into any new electronic templates for nutrition documentation. (Note: The NCP and IDNT are copyrighted by the ACADEMY and one needs to check to see if the EHR software company has purchased a license to use the information. Some national EHR software companies have already purchased the ACADEMY license.)

  - **Adapting MNT Progress Notes**: The Academy recognizes that one documentation form may not be applicable to all facilities. Portions of the progress note forms may be adapted to meet the specific needs of the facility or dietitian. The notes may also be used to build a template for an electronic health record nutrition note. However, some content of the forms should not be altered as they are designed to use the evidence-based recommendations, support best practice, and promote the expected outcomes of MNT. Acceptable adaptations include:
    - Inclusion or exclusion of standardized language terms for each step of the Nutrition Care Process to meet the needs of your specific population. The lists provided are comprehensive terms that are commonly used for this specific disease or condition (refer to IDNT Reference Manual for additional terms)
    - Addition of any collected or documented information
    - Removal of prompts in parentheses
    - Format/organization/shading changes
    - Highlighting of sections to draw attention for other healthcare professionals
    - Alteration of “Materials Provided” section
    - Addition of facility name/logo
    - Addition of prompts for data requested by state or national regulatory agencies
Unacceptable adaptations include:
- Removal of any of the Nutrition Care Process steps
- Removal of the use of standardized language within each step of the Nutrition Care Process
- Changing of specific standardized terms or phrases

♦ **Medical Nutrition Therapy Initial and Follow-up Encounter Summary Report**: A one page form that may be used to summarize initial and follow-up nutrition encounters with patients in order to communicate with other health care professionals (e.g., physicians).

♦ **Sample Case Studies**: Client cases that illustrate the use of the recommendations from the Heart Failure Evidence-based Nutrition Practice Guideline. Each case provides a narrative overview, sample documentation note and a summary report.

**Outcomes Management:**
The following documents include directions for monitoring outcomes and forms used to document changes in outcomes.

♦ **Outcomes Management: Nutrition Monitoring and Evaluation**: This document provides the importance of monitoring outcomes, different types of outcomes that could be tracked and a set of directions for utilizing the Outcomes Monitoring Forms in Excel.

♦ **Outcomes Monitoring Forms in Excel**: Different sheets within the file include a form to complete individual and aggregate data, a sample monitoring sheet to illustrate the use of the data sheet and a graph sheet to display aggregate data in bar graphs.

**Client Education Materials and Professional Resources:**
Documents in this section include any related client education materials and resources that may assist the RD in implementing the toolkit or evidence-based nutrition practice guideline.

**Appendix:**
♦ **Appendix 1: Heart Failure Basics**: Includes the definition of heart failure, common medical terms associated with heart failure, the RD’s role in Heart Failure.

♦ **Appendix 2: Stages in the Development of Heart Failure/Recommended Therapy**: Includes information on the prevention of heart failure and risks associated with the development of heart failure.

♦ **Appendix 3: Quality of Life Tools**: References two tools that RDs may consider for assessing the quality of the life in patients with heart failure.

**Heart Failure Toolkit Quality Improvement Usability Test**
In order to validate the toolkit materials, the process for developing this toolkit included a usability test through the Academy’s Dietetic Practice-Based Research Network (DPBRN). Participants “pilot-tested” the toolkit materials over a 60-day period and completed three surveys regarding each of the forms.

The main objectives of the quality improvement usability test were to determine the usability of the toolkit with regard to format, spacing, wording, organization, clarity, usefulness of content, application, efficiency, effectiveness in collecting outcomes and effectiveness in communicating to other health care professionals. The toolkit materials were revised and documents added based on the results of the usability test.

**Reimbursement for MNT Services**
The Centers for Medicare & Medicaid Services (CSM) covers MNT services provided by RDs for diabetes mellitus and non-dialysis kidney disease including post-kidney transplants. RDs enrolled as Medicare Part B
providers receive reimbursement for individual and/or group MNT for these conditions. The Medicare MNT benefit includes three hours of MNT in the initial calendar year, two hours in subsequent years and additional hours in any year based on physician documentation of changes in the patient’s condition, diagnosis and/or treatment. State Medicaid coverage for MNT is quite variable. Other third party payers may cover MNT for a variety of diseases or conditions. Check payer policies for details on coverage for diseases/conditions.

To achieve appropriate reimbursement, RDs should document in the medical record the patient’s chronic condition(s) and the complexity of MNT care provided, as well as indicate the time spent interacting with the patient during the MNT visit (the face-to-face time). Indicating the RD’s critical thinking and the complexity of care involved with providing MNT to patients with multiple medical diagnoses helps justify the time spent with the patient, and impacts reimbursement for the MNT service. Additional documentation guidelines are posted on the Academy’s Web at http://www.eatright.org/mntdocument. Based on the time spent with the patient, the RD or facility billing office will report the appropriate units of the MNT procedure (CPT) codes (97802, 97903 or 97804) on claims submitted for MNT services.

RDs can also use the toolkit to advocate for new or expanded coverage of MNT that will impact future reimbursement for these services. The toolkit resources illustrate evidence-based practices for MNT related to this disease or condition, describe the complex decision-making and steps of care provided by RDs, as well as outline positive expected patient outcomes.

For more information on MNT codes, coverage, reimbursement and advocacy for MNT coverage, visit the Academy’s Web page at http://eatright.org/mnt.

Summary
In summary, this toolkit provides RDs with guidance in applying the Heart Failure Evidence-Based Nutrition Practice Guideline in the provision of Medical Nutrition Therapy to their clients. The materials incorporate the steps of the Nutrition Care Process with case studies illustrating pertinent nutrition diagnoses and nutrition interventions. Used in conjunction with the online Evidence Analysis Library, these tools enable RDs to individualize a nutrition plan based on the current state of science, client values, clinical judgment and monitoring of outcomes.

References:

General Information and Disclaimer
This toolkit is meant to serve as a general framework for handling clients with particular health problems. It may not always be appropriate to use these nutrition practice guidelines to manage clients because individual circumstances may vary. For example, different treatments may be appropriate for clients who are severely ill or who have co-morbid, socioeconomic, or other complicating conditions. The independent skill and judgment of the health care provider must always dictate treatment decisions. These nutrition practice guidelines are provided with the express understanding that they do not establish or specify particular standards of care, whether legal, medical, or other.
Executive Summary

Below are the major recommendations and ratings for the Academy of Nutrition and Dietetics Heart Failure Evidence-Based Nutrition Practice Guideline. [Click here](#) to view the Guideline Overview. More detail (including the evidence analysis supporting these recommendations) is available on this website to Academy members and EAL subscribers under [Major Recommendations](#).

To see a description of the Academy Recommendation Rating Scheme (Strong, Fair, Weak, Consensus, Insufficient Evidence) [click here](#).

Medical Nutrition Therapy

**Heart Failure (HF) Medical Nutrition Therapy and Heart Failure HF:**

**MNT and Heart Failure**

Referral to a registered dietitian for Medical Nutrition Therapy (MNT) is recommended whenever an individual has heart failure. A planned initial visit lasting at least 45 minutes and at least one to three planned follow-up visits (at least 30 minutes each) can lead to improved dietary pattern and quality of life and decreases in edema and fatigue. Along with optimal pharmacological management, MNT may also reduce hospitalizations.

*Strong Imperative*

**Nutrition Assessment**

**Heart Failure (HF) Protein Needs in Heart Failure Patients**

**HF: Protein Needs**

In assessing protein needs for patients with heart failure, clinically stable depleted patients should have a daily intake of at least 1.37 g protein/kg and normally nourished patients should have a daily intake 1.12 g protein/kg in order to preserve their actual body composition or limit the effects of hypercatabolism. Research indicates that HF patients have significantly higher protein needs than those without HF, as measured by negative nitrogen balance.

*Fair Imperative*

**Heart Failure (HF) Energy Needs in Heart Failure Patients**

**HF: Energy Needs in Heart Failure Patients**

In assessing energy needs for patients with heart failure, the majority of studies indicate that use of indirect calorimetry best determines energy needs. When indirect calorimetry is not possible consider starting with usual [predictive equations](#) and adjusting for increased catabolic state.

*Fair Imperative*

**Nutrition Intervention**

**Heart Failure (HF) Sodium and Fluid Restriction and Heart Failure**

**HF: Fluid Intake**

For patients with heart failure, fluid intake should be between 1.4 and 1.9 L (48-64 oz.) per day, depending on clinical symptoms (i.e. edema, fatigue, shortness of breath). Fluid restriction will improve clinical symptoms and quality of life.

*Fair Imperative*

**HF: Sodium Intake**

For patients with heart failure, sodium intake should be less than 2000 mg (2 g) per day. Sodium restriction will improve clinical symptoms (i.e. edema, fatigue) and quality of life.
Fair Imperative

Heart Failure (HF) Folate, B12, and Heart Failure
HF: Folate and heart failure
The practitioner should encourage patients with HF to consume at least the DRI for folate through food and/or a combination of B6, B12, and folate supplementation. Folate supplementation given with other vitamins/minerals has been shown to have beneficial clinical HF outcomes.

Fair Imperative

HF: B12 and heart failure
A multi-vitamin/mineral containing B12 or a combination of B6, B12 and folate could be recommended in HF patients. This level of B12 supplementation (200-500 mcg daily), given with other vitamins/minerals, has been shown to have beneficial clinical heart failure outcomes.

Fair Imperative

Heart Failure (HF) Thiamine Supplementation and Heart Failure
HF: Thiamine Supplementation
Since diuretic use can lead to thiamine deficiency in patients with heart failure (HF), then the practitioner should evaluate thiamine status. The practitioner should encourage the patient to consume at least the DRI through food and/or supplements. The practitioner should stay alert to future research involving thiamine.

Fair Conditional

Heart Failure (HF) Magnesium Supplementation and Heart Failure
HF: Magnesium Supplementation
The practitioner should encourage patients with heart failure (HF) to consume at least the DRI for magnesium through food and/or supplements. Low levels of magnesium may be present in patients with heart failure and irregular heart rhythms may occur. The practitioner should stay alert to future research involving magnesium.

Fair Conditional

Heart Failure (HF) Alcohol and Heart Failure
HF: Alcohol and Heart Failure
Current limited evidence does not justify encouraging those who do not drink alcohol to start doing so. If a patient currently drinks alcohol, and if not contraindicated, then a maximum of one drink per day for women and up to two drinks per day for men may be tolerated. This level of alcohol consumption has been demonstrated to not be harmful in heart failure patients.

Fair Conditional

Heart Failure (HF) L-Arginine, Carnitine, Coenzyme Q10 and Hawthorn and Heart Failure
HF: L-Arginine, Carnitine, Coenzyme Q10 and Hawthorn
If a patient inquires about or is currently taking L-arginine, carnitine, coenzyme Q10 or hawthorn supplements, then the practitioner may discuss the limited evidence available regarding clinical heart failure outcomes. Research is inconclusive. The practitioner should stay alert to future research involving these supplements.
Medical Nutrition Therapy Flowchart of Encounters for Heart Failure

This document is designed to assist registered dietitians (RD) in completing the Medical Nutrition Therapy Initial and Follow-up Progress Notes for Heart Failure, also located in this toolkit. A more extensive description of each encounter is located in the Medical Nutrition Therapy Encounter Process for Heart Failure.

The format follows the Nutrition Care Process, which includes Nutrition Assessment, Nutrition Diagnosis, Nutrition Intervention, and Nutrition Monitoring and Evaluation, also known as the “ADIME” format. When completing the Medical Nutrition Therapy Initial and Follow-up Progress Notes for Heart Failure, use of the most current Academy Standardized Language manual is also recommended. For more information on the Academy Nutrition Care Process and Standardized Language, see [http://www.eatright.org/ncp](http://www.eatright.org/ncp).

### Referral/Consult Information (< 30 days prior to encounter 1)

<table>
<thead>
<tr>
<th>Related forms:</th>
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</thead>
<tbody>
<tr>
<td>Instructions for Medical Nutrition Therapy Sample Referral Form</td>
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<tr>
<td>Sample Referral Form: Referral for Medical Nutrition Therapy</td>
</tr>
</tbody>
</table>

RD to obtain pertinent clinical data from referral source or client medical record/information system.

- ✓ Laboratory values (e.g., serum sodium, potassium, BUN,Cr, eGFR, Mg, thyroid, TSH, lipids)
- ✓ Other clinical data (e.g., [weight change, BP])
- ✓ Physician treatment goals or medical plans and signature
- ✓ 2 gram sodium restriction
- ✓ fluid restriction ml
- ✓ TLC diet/DASH diet
- ✓ Past medical history –comorbid conditions, past hospitalizations for HF

- ✓ presenting signs and symptoms
- ✓ edema
- ✓ level of shortness of breath
- ✓ not short of breath or fatigued
- ✓ Medications (dose, frequency), dietary/herbal supplements
- ✓ Physical activity clearance or limitations
**Nutrition Assessment**

**Food/Nutrition Related History**
- Diet history - current diet order, comprehensive diet history, dietary intake, eating environment
- Energy intake
- Food and beverage intake, actual food intake
- Bioactive substances - Alcohol intake, caffeine
- Macronutrient intake - protein, fat/cholesterol, carbohydrate
- Micronutrient Intake - vitamins, minerals (especially Na, K, magnesium)
- Herbal and medication that impact nutritional status - magnesium, thiamine, B12, B6, folic acid, hawthorne berry
- Food knowledge, beliefs and attitude and willingness to undertake behavior change
- Physical ability to perform nutrition related activities (ADL), physical activity

**Anthropometrics**
- Body composition - height, weight (usual body weight, weight change), BMI, grip test, mid-arm muscle circumference

**Biochemical Data**
- Renal profile - BUN Cr, eGFR, electrolytes Na/K
- Glucose profile, including HgbA1c, if co morbid condition of diabetes
- Lipid profile total cholesterol, LDL, HDL, triglycerides
- Mineral profile - magnesium
- Vitamin profile thiamin, B6, B12, folic acid

**Nutritional-Focused Physical Findings**
- Note presence or absence for body habitus, cardio-pulmonary system (i.e., edema, shortness of breath), extremities (fragility, edema, nails, muscle mass, taste alterations), digestive system (mouth to rectum) especially early satiety, vital signs (BP, heart rate, respiratory rate)

**Client History**
- Consideration of co-morbid conditions and personal information (age, gender, race, tobacco use, mobility)
- Social history: psychosocial and economic issues impacting nutrition therapy, physical activity pattern
- Complementary/alternative medicine (l-arginine, carnitine, coenzyme Q10 and hawthorn berry)

**Comparative Standards**
- Estimated energy needs
- Estimated fat, carbohydrate, protein, fiber needs
- Estimated fluid needs
Nutrition Diagnosis
List and prioritize the nutrition diagnosis(es) that includes the problem (P), etiology (E) and signs and symptoms (S). For example, patient/client has an excessive fluid intake related to food and nutrition knowledge deficit concerning the appropriate fluid intake as evidenced by weight gain of ___, shortness of breath, edema.

Nutrition Intervention
- Individualize nutrition prescription (i.e., energy, protein, fat, carbohydrate, vitamin/mineral supplements, sodium and fluid)
- One or more of the intervention components need to be included in an individualized dietary prescription for patients with heart failure (Food and/or Nutrient Delivery, Nutrition Education, Nutrition Counseling, and Coordination of Nutrition Care). Food and/or Nutrient Delivery includes interventions related to diet modifications of food nutrient type and quantity, timing of meals, nutrient/medication interaction. Nutrition education involves teaching basic survival skills and prioritizing the dietary modifications. Comprehensive nutrition education can include describing the purpose of the nutrition education, the recommended modifications, advanced topics, resultant interpretations, and advancing skills or skill development.
- For patients with heart failure, fluid intake should be between 1.4 and 1.9 L (48-64 oz.) per day, depending on clinical symptoms (i.e., edema, fatigue, shortness of breath). Sodium intake should be less than 2000 mg (2 g) per day. The patient should be encouraged to consume at least the Dietary Reference Intake (DRI) for folate through food and/or a combination of B6, B12, and folate supplementation. Due to diuretic use and risk for thiamine and/or magnesium deficiency in patients with heart failure, it is recommended the RD encourage the patient to consume at least the DRI through food and/or supplements. If a patient inquires or is taking supplements or alternative methods of treatment, it is recommended to discuss the limited evidence available their use in heart failure outcomes.

Nutrition Monitoring and Evaluation
Check indicators to monitor under each of the four categories of nutrition outcomes, based on signs and symptoms from PES statement(s)
- Food/Nutrition-Related History Outcomes - energy intake, fluid/beverage intake, protein intake, vitamin intake, mineral/element intake, beliefs and attitudes, food and nutrition knowledge, ability to plan meals/snacks, ability to select healthful food/meals, adherence, goal setting, nutrition-related ADLs and IADLs, nutrition quality of life
- Biochemical Data, Medical Tests, and Procedure Outcomes: electrolyte and renal profile, BUN, creatinine
- Anthropometric Measurement Outcomes: weight/weight change
- Nutrition-Focused Physical Finding Outcomes: Note presence or absence for body habitus, cardio-pulmonary system (i.e., edema, shortness of breath), extremities (fragility, edema, nails, muscle mass, taste alterations), digestive system (mouth to rectum) especially early satiety, vital signs (BP, heart rate, respiratory rate)

- It is essential for the dietitian to monitor and evaluate the progress and outcomes of the nutritional intervention, which should include: the evaluation of food intake/patterns, medication therapy, plasma blood glucose levels, lipids, and blood pressure, anthropometric measurements (i.e. BMI, edema, and weight change) physical activity and quality of life.
- Specify next appointment
**Time between encounters: 7 days to 6 weeks depending on patient need**

<table>
<thead>
<tr>
<th><strong>Encounter 2-6</strong></th>
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</thead>
<tbody>
<tr>
<td><strong>Ambulatory care: 30-45 minutes</strong></td>
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<tr>
<td>Related forms:</td>
</tr>
<tr>
<td><em>Medical Nutrition Therapy Encounter Process for Heart Failure</em></td>
</tr>
<tr>
<td><em>Medical Nutrition Therapy Heart Failure Follow-up Progress Note</em></td>
</tr>
<tr>
<td>RD to obtain clinical data from client medical record or information system and client interview:</td>
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</tbody>
</table>

### Nutrition Assessment
- Reassess weight, BMI, biochemical data and other clinical data (e.g., cardio-pulmonary system -edema, shortness of breath, extremities -fragility, edema, nails, muscle mass, taste alterations, vital signs (blood pressure, heart rate, respiratory rate) and treatment or medications changes.
- Obtain a dietary recall/record including fluid calories, macronutrient composition. Re-assess activity level and ability to adhere to dietary recommendations.
- Compare to expected outcomes and goals for the food/nutrition intake (adherence to the dietary prescription), anthropometric (weight and weight change), and biochemical (metabolic parameters—plasma glucose levels, renal panel, BP, heart rate, and lipids). Identify areas to address/educate or modifications to the nutrition prescription.

### Nutrition Diagnosis
Based on outcome data from initial encounter list and prioritize new or existing nutrition diagnosis(es) that includes the problem (P), etiology (E) and signs and symptoms (S).

### Nutrition Intervention
- Reinforce or modify nutrition prescription.
- Develop with patient new behavioral goals that are focused on the etiology of the problem(s) determined in the assessment.
- Use one or more of the intervention components in modifying the dietary prescription: Food and/or Nutrient Delivery, Nutrition Education, Nutrition Counseling, and Coordination of Nutrition Care. Examples of possible interventions by category could be: Food and/or Nutrient Delivery issues related to diet modifications of food nutrient type and quantity, timing of meals, nutrient/medication interaction. Nutrition education reviewing the basics, survival, and to prioritizing the dietary modifications.
- It is recommended to include a statement of specific expected outcomes or quantify change (if applicable) and expected time frame.
- List materials provided and referrals or resources used.
- Request follow-up laboratory tests if needed.

### Nutrition Monitoring and Evaluation
- Check any new indicators to monitor under each of the four categories of nutrition outcomes, based on signs and symptoms from PES statement(s)
- Based on your patients/clients goals, consider one or more of the following for monitoring and evaluation:
  - Energy intake, fluid/beverage intake, protein intake, vitamin intake, mineral/element intake, beliefs and attitudes, food and nutrition knowledge, ability to plan meals/snacks, ability to select healthful food/meals, adherence, goal setting, nutrition-related ADLs and IADLs
  - Electrolyte and renal profile, BUN, creatinine, nutrition quality of life
  - Weight/weight change
  - Body habitus, cardio-pulmonary system (i.e., edema, shortness of breath), extremities (fragility, edema, nails, muscle mass, taste alterations), digestive system (mouth to rectum) especially early satiety, vital signs (BP, heart rate, respiratory rate)
- It is essential for the dietitian to monitor and evaluate the progress and outcomes of the nutritional intervention at each visit, which should include: the evaluation of food intake/patterns, medication therapy, plasma blood glucose levels, lipids, and blood pressure, anthropometric measurements (i.e. BMI, edema, and weight change) and physical activity.
- Specify next appointment.
Medical Nutrition Therapy Encounter Process for Heart Failure

Introduction
This document is designed to assist registered dietitians (RD) in completing the Medical Nutrition Therapy Initial and Follow-up Progress Notes in this toolkit. The format follows the Nutrition Care Process, which includes Nutrition Assessment, Nutrition Diagnosis, Nutrition Intervention, and Nutrition Monitoring and Evaluation. When completing the Medical Nutrition Therapy Initial and Follow-up Progress Notes, use of the most current Academy of Nutrition and Dietetics Standardized Language reference manual is also recommended (e.g. International Dietetics & Nutrition Terminology (IDNT) Reference Manual, Standardized Language for the Nutrition Care Process Third Edition). For more information on the Academy Nutrition Care Process and Standardized Language, see http://www.eatright.org/ncp.

ENCOUNTER: Initial Encounter: 45 minutes

Assessment
Obtain from the client: referral form and medical information from the medical record or if available, information from electronic medical records within 30 days of the initial encounter.

Please refer to the Sample Referral Form: Referral for Medical Nutrition Therapy and Instructions for Medical Nutrition Therapy Sample Referral Form within this toolkit to assist with this step.

Assessment of Nutrition Status consists of six areas including:

1. Food/Nutrition-Related History
2. Anthropometric Measurements
3. Biochemical Data, Medical Tests and Procedures
4. Nutrition-Focused Physical Findings
5. Client History
6. Comparative Standards

Assessment of Nutrition Status consists of five areas including:

1. Food/Nutrition-Related History
   - *Food and Nutrient Intake* must establish a baseline for sodium and fluid intake, vitamins and minerals, herbal supplements, recipe modifications to decrease sodium intake, frequency of restaurant meals and usual food choices at restaurants, both dine in and take-out. It will require estimates of current sodium and fluid intake, meal and snack patterns, and environmental cues to eating.
   - *Knowledge/Beliefs/Attitudes* includes, for example, knowledge and beliefs about nutrition recommendations for management of heart failure, motivation and willingness to make necessary dietary and lifestyle changes to achieve expected fluid and sodium goals, self-monitoring and management practices, and past nutrition counseling and education. Monitoring of daily weight is an essential piece of self-management with heart failure.
   - *Medication and Herbal Supplement Use* includes compliance with several medications essential to management of heart failure. These include an ACE inhibitor (or ARB, if unable to tolerate an ACE inhibitor), a beta-blocker, a diuretic, and if needed an aldosterone antagonist and digoxin. Be alert to medications and supplements that contribute to fluid retention such as NSAIDs, Actos, and Avandia. Note: herbal and dietary supplements (such as Co-enzyme Q10, those with potential for food or drug interaction) and illegal drugs. Other medications might include prescription lipid-lowering, antihypertensive, diabetes, renal, and thyroid medications.
Factors Affecting Access to Food and Food/Nutrition-Related Supplies encompasses factors such as food planning, purchasing, preparation abilities and limitations, food safety practices, food and nutrition program utilization and food insecurity.

Physical Activity and Function consists of activity patterns, amount of sedentary time (e.g., TV, phone, computer) and exercise intensity, frequency and duration. This will vary according to the patient’s New York Heart Association Classification (NYHA).

2. Biochemical Data, Medical Tests, and Procedures includes laboratory data e.g., basic metabolic profile, lipid profile, glucose, hemoglobin HgbA1c, liver function tests, thyroid, B12, B6, folate, thiamin and magnesium.

3. Anthropometric Measurements include height, weight, weight history, body mass index (BMI), waist circumference (WC) and waist-to-hip ratio (WHR).

4. Nutrition-Focused Physical Findings include edema (pedal and abdominal), blood pressure, general physical appearance (abdominal girth, muscle and subcutaneous fat wasting and affect).

5. Client History consists of four areas: Medication and supplement history, social history, medical and health history and personal history.
   - Personal History consists of factors including age, occupation, role in family and education level.
   - Medical and Health History includes chief nutritional complaint, results of past and present echocardiograms, implantable cardioverter defibrillator (ICD) or biventricular pacer, present and past illness (particularly of cardiovascular disease), diabetes, thyroid disease, chronic renal failure, renal/dialysis, evaluated risk factors for cardiovascular disease, metabolic syndrome, family medical history (especially of premature cardiovascular disease, mental and emotional health and cognitive abilities).
   - Social History may include such items as smoking history, alcohol intake (frequency and amount), socioeconomic status, social and medical support, cultural and religious beliefs, housing situation and social isolation or connection.

Documentation Needed
- Medical record documentation
- Referrals from other health care professionals

Diagnosis

Whenever possible, a nutrition diagnosis statement is written in the PES format that states the problem (P), the etiology (E) and signs and symptoms (S).

The Nutrition Diagnosis (Problem) describes alterations in the patient’s/client’s nutritional status that food and nutrition professional are responsible for treating. Nutrition diagnosis differs from medical diagnosis in that a nutrition diagnosis changes as the patient’s or client’s response changes. For example, the signs and symptoms of a nutrition diagnosis may improve or even resolve, based on a nutrition intervention. The medical diagnosis does not change as long as the disease or condition exists. A nutrition diagnosis allows the RD to identify realistic and measurable outcomes, formulate interventions, and monitor and evaluate change. For example, the nutrition diagnosis of inappropriate sodium intake is defined as the higher intake of sodium compared to established reference standards or recommendations based on physiological needs or chronic disease.

The Etiology (Cause or Contributing Risk Factors) are those factors contributing to the existence of or maintenance of pathophysiological, psychosocial, situational, developmental, cultural or environmental problems. It is linked to the diagnosis labeled by the words “related to,” what is trying to be altered through medical nutrition therapy. For example, “related to food and nutrition knowledge deficit.”

The Signs and Symptoms (Defining Characteristics) consist of subjective or objective data used to determine whether the patient/client has the nutrition diagnosis specified. These are the signs and symptoms
gathered through nutrition assessment. It is linked to the etiology by the words “as evidenced by” what will be monitored and evaluated through follow-up. For example, “as evidenced by a sodium intake of > 2000 milligrams daily.”

There are three domains or categories of nutrition diagnosis labels. The following lists the domains and common diagnoses within each domain that are related to heart failure:

1. **Intake**
   - Inadequate oral intake
   - Inadequate fluid intake
   - Excessive fluid intake
   - Excessive mineral intake (sodium)
   - Altered nutrition related lab values — BUN/CR
   - Inadequate energy intake
   - Excessive energy
   - Malnutrition
   - Inadequate protein intake
   - Excessive protein intake
   - Inadequate bioactive substance intake
   - Excessive bioactive substance intake
   - Inadequate vitamin intake
   - Excessive vitamin intake
   - Inadequate mineral intake
   - Excessive mineral intake (specifically sodium)

2. **Clinical**
   - Altered GI function
   - Underweight
   - Unintended weight loss
   - Unintended weight gain

3. **Behavioral-environmental**
   - Food- and nutrition-related knowledge deficit
   - Harmful beliefs/attitudes about food- or nutrition-related topics
   - Not ready for diet/lifestyle change
   - Self-monitoring deficit
   - Limited adherence to nutrition-related recommendations
   - Undesirable food choices
   - Limited access to food or water

Evaluating Your PES Statement: To evaluate whether your PES statement is appropriate, ask the following questions:

- **P** - Can the nutrition professional resolve or improve the nutrition diagnosis for this individual, group or population?
- **E** – Evaluate what you have used as your etiology to determine if it is the “root cause”.
- **S** – Will measuring the signs and symptoms indicate if the problem is resolved?

**Intervention**

**Nutrition Prescription:** The patient’s or client’s individualized recommended dietary intake of energy and selected foods and nutrients based on measured or estimated energy expenditure, current reference standards and dietary guidelines, and the patient’s or client’s health condition and nutrition diagnosis.

The nutrition prescription may be thought of as the “meal plan” for which the recommendations in the *Heart Failure Evidence-Based Nutrition Practice Guidelines* provide a basis. The Nutrition Prescription should be
individualized and based on client needs, consistent with client preferences and not contraindicated by risk or harm. Those dietary and lifestyle modifications not addressed in the initial encounter can be addressed as part of ongoing follow-up visits.

Prioritize and select specific intervention strategies that are focused on the etiology of the problem. Interventions should be quantifiable, achievable and time defined. Communicate and carry out the plan.

There are four domains or categories of nutrition intervention terms: 1) Food and/or Nutrient Delivery 2) Nutrition Education, 3) Nutrition Counseling, and 4) Coordination of Care. Examples of nutrition interventions related to Heart Failure are listed below. These are also listed on the Medical Nutrition Therapy Initial and Follow-up Progress Notes for Heart Failure. Refer to current Academy Standardized Language manual for additional nutrition intervention and definitions related to intervention terms.

1. **Food and/or Nutrient Delivery**
   - Modify distribution, type, or amount of food and nutrients within meals or at specified time Meals and Snacks
   - Medical Food Supplements
   - Vitamin and Mineral Supplements
   - Bioactive Substance Management
   - Feeding Environment
   - Nutrition-Related Medication Management

2. **Nutrition Education**
   - Nutrition Education-Content
   - Nutrition Education-Application

3. **Nutrition Counseling**
   - Cognitive-Behavioral Theory
   - Health Belief Model Strategies

4. **Coordination of Care.**

**Intervention Definitions**

**Food and Nutrient Delivery** refers to an individualized approach for food and nutrient provision. It may relate to meals and snacks, enteral and parenteral nutrition, medical food supplements, vitamin and mineral supplement, bioactive substance supplement, feeding assistance, feeding environment and nutrition-related medication management.

**Nutrition Education**: A formal process to instruct or train a patient or client in a skill or to impart knowledge to help patients and clients voluntarily manage or modify food choices and eating behavior to maintain or improve health. If a patient or client displays a knowledge deficit, then comprehensive nutrition education may be appropriate. This includes instruction or training to lead to in-depth nutrition-related knowledge or skills in given topics.

- Discuss the relationship between sodium and fluid intake and edema. Describe the heart as a weakened pump that cannot deliver the blood to the kidney efficiently, thus fluid is retained, moves into the interstitial spaces causing edema and shortness of breath.
- Explain that limiting sodium and fluid intake will decrease the workload of the heart thus preventing edema and improving their activity level.

**Nutrition Counseling** is a supportive process, characterized by a collaborative counselor-patient or -client relationship, to set priorities, establish goals and create individualized action plans, which acknowledge and foster responsibility for self-care to treat an existing condition and promote health. Indicate the theoretical basis/approaches and strategies used. Specific strategies related to the communication in self-management training are individualized to the setting and client. Motivational interviewing is best applied in situations when
a patient or client is not ready, is unwilling or ambivalent about reducing sodium and fluid intake. Self-monitoring with daily weight, medications, sodium and fluid intake is the key to decreased hospitalizations and improved quality of life. Refer to current Academy IDNT manual and the Nutrition Counseling project on the Evidence Analysis Library (http://www.adaevidencelibrary.com/topic.cfm?cat=3151) for additional information and resources related to theoretical basis/approaches and behavioral therapy strategies.

Coordination of Nutrition Care (RC) is consultation with, referral to or coordination of nutrition care with other health care providers, institutions or agencies that can assist in treating or managing nutrition-related problems. Examples might be:

- **Recommendations:** To other RDs or healthcare providers to reinforce nutrition and physical activity goals, recheck laboratory data (sodium, potassium, creatinine, blood urea nitrogen (BUN), fasting blood glucose.
- **Referral(s):** Includes, for example, smoking cessation or exercise program.
- **Referral Source:** Send copy of initial progress note to physician and place original in client's medical record.

Documentation

- Document coordination of care in client’s medical record or information system, according to organization’s policy.
- Contact information: Instruct client to call or e-mail with questions and concerns
- Confirm Appointment: Put system in place to confirm client appointments to enhance show rates.

Goals/Expected Outcomes: Determine and review with the client the expected outcomes, amount of change (if applicable) and timeline for each of the following areas. Expected outcomes should be written in observable and measurable terms that are clear and concise. Expected outcomes should be client-centered and tailored to what is reasonable to the client’s circumstances and appropriate expectations for treatments and outcomes.

- **Biochemical:**
  - sodium and potassium within normal limits (WNL)
  - fasting glucose WNL
  - creatinine and BUN at upper limits (indicates sodium and fluid compliance)
- **B12, B6, folate, thiamin and magnesium, if abnormal at baseline.**
- **Anthropometric:** Includes monitoring of daily weight. Patient will telephone if daily weight indicates a two pound weight gain overnight or five pound weight gain in one week.
- **Physical and Food or Nutrition:** Includes a decrease in daily sodium intake to < 2000 milligrams and a fluid intake range of 48-64 ounces. Physical activity as appropriate to NYHA classification.

Monitoring and Evaluation

In the fourth step of the nutrition care process, dietetic practitioners do the following three things—monitor progress, measure outcomes, and evaluate the outcomes. Following is a summary of the three components of the nutrition monitoring and evaluation step.

**Nutrition Monitoring and Evaluation Components Summary**

*Monitor progress*

- Check patient’s/client’s understanding and compliance with nutrition intervention.
- Determine if the intervention is being implemented as prescribed.
- Identify the nutrition care outcomes.

*Measure outcomes*

- Select the nutrition care outcome indicator(s) to measure the desired outcome(s).
Measure the nutrition care outcome indicator(s) with standardized indicators.
Provide evidence that the nutrition intervention is or is not changing the patient’s/client’s behavior or status.
Gather information indicating reasons for lack of progress.

**Evaluate outcomes**

Compare current findings with the nutrition prescription/goals or a reference (known as the criteria).

The outcomes used in nutrition monitoring and evaluation are organized into five categories, similar to the assessment domains. They are: 1) Food/Nutrition Related History Outcomes, 2) Anthropometric Measurement Outcomes, 3) Biochemical Data, Medical Tests, and Procedure Outcomes, 4) Nutrition-Focused Physical Finding Outcomes, 5) Comparative Standards. No nutrition care outcomes are associated with the domain entitled Client History. The items from this domain are used for nutrition assessment only and do not change as a result of nutrition intervention. Dietetics practitioners compare the current findings with previous status, nutrition intervention goals, and/or reference standards (criteria) and evaluate the overall impact of the nutrition intervention on the patient/client’s health outcomes. The use of standardized indicators and criteria increases the validity and reliability outcomes data are collected. Examples of nutrition monitoring and evaluation data related to Heart Failure are listed below:

1. **Food and Nutrition-Related Outcomes**
   - Fluid/beverage intake
   - Food intake
   - Alcohol intake
   - Protein Intake
   - Carbohydrate intake
   - Vitamin Intake
   - Mineral Intake
   - Food and nutrition knowledge
   - Beliefs and attitudes
   - Adherence (self-reported adherence score)
   - Physical Activity and Function

2. **Anthropometric Measurement Outcomes:**
   - Body composition/growth/weight history

3. **Biochemical Data, Medical Tests, and Procedure Outcomes:**
   - Electrolyte and renal profile
   - Glucose endocrine profile
   - Lipid profile
   - Protein profile
   - Vitamin profile

4. **Nutrition-Focused Physical Findings:**
   - Edema, fatigue, shortness of breath, appetite etc.

5. **Comparative Standards**
   - Estimated energy needs
   - Estimated protein needs
   - Estimated fluid needs
   - Estimated mineral needs

**Documentation**

Documentation for this step, should include:
Date and time
Indicators measured, results, and the method for obtaining the measurement
Criteria to which indicator is compared
Factors facilitating or hampering progress
Other positive or negative outcomes
Future plans for nutrition care nutrition monitoring and follow-up or discharge.

Documentation is an ongoing process that supports all of the steps in the nutrition care process. Documentation that is relevant, accurate, and timely is essential, but lacking if it does not include a statement of where the patient/client is now in terms of expected nutrition outcomes. Indicators that will be monitored should be clearly linked to specific interventions for the patient/client.

Documentation for this step, at a minimum should include:

- Check indicators to monitor under each of the four categories of nutrition outcomes, based on signs and symptoms from PES statement(s) (e.g., sodium intake, fluid intake, daily weight monitoring etc.)
- Criteria to which the indicator is compared (i.e., nutrition prescription/goal or a reference standard)

*Note:* There may be more than one indicator per goal and one indicator may be used for multiple goals.
ENCOUNTER: Follow-up encounter(s): 30 minutes.

Number and duration of encounters will depend on patient’s/client’s risk category, number of diet modifications and lifestyle changes that need to be made, and the motivational level of the patient/client.

Assessment

Review changes in each of the domains of Assessment.

Assessment of Nutrition Status consists of six areas including:

1. Food/Nutrition-Related History
2. Anthropometric Measurements
3. Biochemical Data, Medical Tests and Procedures
4. Nutrition-Focused Physical Findings
5. Client History
6. Comparative Standards

1. Food/Nutrition-Related History
   It is essential to assess changes in sodium and fluid intake at each encounter in order to monitor and evaluate the appropriate interventions for behavior change. Evaluate patient’s understanding of and adherence to intervention plan; provide evidence that the plan is or is not changing behavior status; gather information about discrepancies between goals and actual behaviors and reasons for lack of progress.
   - **Food and Nutrition Intake** compare sodium and fluid intake to baseline intake. Using patient’s food records or diet recall, review and evaluate patient’s adherence and comprehension of nutrition prescription for heart failure. Provide feedback to patient.
   - **Knowledge/Beliefs/Attitudes** compare current information with baseline data and document changes. Discuss daily weight monitoring with reported changes in sodium and fluid intake. Each patient has a unique challenge (restaurant meals, added salt, flavor, preference for processed foods). Focus on improvement or lack of improvement in this area.
   - **Physical Activity and Function** compare physical activity with NYHA classification. Note improvement or barriers.

2. Nutrition-Focused Physical Findings
   Assess fatigue, shortness of breath, edema. Compare current information with baseline data and document changes.

3. Anthropometric Measurement Outcomes
   Review daily weight record. If not available or patient did not record, compare previous clinic weight with current clinic weight. Be alert to involuntary weight loss as an indicator of cardiac cachexia.

4. Biochemical Data, Medical Tests, and Procedure Outcomes
   Compare sodium, potassium, creatinine, BUN, albumin levels to previous data.

Documentation

- Medical record documentation
- Referrals from other health care professionals.
**Diagnosis**

*Based on patient/client data, list and prioritize new and/or existing diagnosis(es). Write nutrition diagnosis statement in the PES format that states the problem (P), the etiology (E) and signs or symptoms (S). Refer to Initial Encounter for description on creating PES statements.*

**Intervention**

Select specific intervention strategies that are focused on the etiology of the problem. Modify the plan as needed, based on data collection. Communicate and carry out the plan. Refer to Initial Encounter for description on developing interventions.

**Nutrition Prescription** document changes in the patient or client’s individualized recommended dietary intake of energy and selected foods and nutrients based on measured or estimated energy expenditure, current reference standards and dietary guidelines, and the patient or client’s health condition and nutrition diagnosis.

**Goals/Expected Outcomes** determine and review with client the expected outcomes, amount of change (if applicable) and timeline for each of the following areas.

**Materials Provided** document client education resources pertaining to the treatment of heart failure.

**Monitoring and Evaluation**

Documentation for this step should include:

- Date and time
- Indicators measured, results, and the method for obtaining the measurement
- Criteria to which indicator is compared
- Factors facilitating or hampering progress
- Other positive or negative outcomes
- Future plans for nutrition care nutrition monitoring and follow-up or discharge

**References**


Heart Failure Recommendations with Associated Standardized Language Terms

Below are the Heart Failure Evidence-Based Nutrition Practice Guideline recommendations and their associated standardized language terms to be considered when implementing the specific recommendation. The terms associate the EAL recommendations to the Nutrition Care Process (NCP) standardized language terminology as published in the International Dietetics & Nutrition Terminology (IDNT) Manual. The RD and/or DTR should refer to this list of identified terms when providing nutrition care and documenting on the Nutrition Progress Notes. **The list is extensive to consider all possibilities, but using all terms is not the intent and critical thinking is needed for determining appropriate care.** See the case study included in the toolkit for a specific example of the terms would be used in documenting care.

**Screening and Referral**

Below is the HF and MNT recommendation. No standardized language terms are associated because screening and referral are outside the NCP.

**Recommendation: MNT and Heart Failure**

Referral to a registered dietitian for Medical Nutrition Therapy (MNT) is recommended whenever an individual has heart failure. A planned initial visit lasting at least 45 minutes and at least one to three planned follow-up visits (at least 30 minutes each) can lead to improved dietary pattern and quality of life and decreases in edema and fatigue. Along with optimal pharmacological management, MNT may also reduce hospitalizations.

*Statement Rating: Strong / Imperative*

**Nutrition Assessment**

Listed below are the key recommendations to consider during the initial assessment and each of the subsequent follow up encounters. The list of possible assessment IDNT terms is below. Critical thinking for terming which is appropriate for each patient is recommended and needed.

**Recommendation: Protein Needs**

In assessing protein needs for patients with heart failure, clinically stable depleted patients should have a daily intake of at least 1.37 g protein/kg and normally nourished patients should have a daily intake 1.12 g protein/kg in order to preserve their actual body composition or limit the effects of hypercatabolism (increased loss of visceral protein stores). Research indicates that HF patients have significantly higher protein needs than those without HF, as measured by negative nitrogen balance.

*Statement Rating: Fair / Imperative*

**Recommendation: Energy Needs in Heart Failure Patients**

In assessing energy needs for patients with heart failure, the majority of studies indicate that use of indirect calorimetry best determines energy needs. When indirect calorimetry is not possible consider starting with usual predictive equations and adjusting for increased catabolic state.

*Statement Rating: Fair / Imperative*

**Recommendation: Fluid Intake**

For patients with heart failure, fluid intake should be between 1.4 and 1.9 L (48-64 oz.) per day, depending on clinical symptoms (i.e. edema, fatigue, shortness of breath). Fluid restriction will improve clinical symptoms and quality of life.

*Statement Rating: Fair / Imperative*
Recommendation: Sodium Intake
For patients with heart failure, sodium intake should be less than 2000 mg (2 g) per day. Sodium restriction will improve clinical symptoms (i.e. edema, fatigue) and quality of life.

Statement Rating: Fair / Imperative

Recommendation: Folate and Heart Failure
The practitioner should encourage patients with HF to consume at least the DRI for folate through food and/or a combination of B6, B12, and folate supplementation. Folate supplementation given with other vitamins/minerals has been shown to have beneficial clinical HF outcomes.

Statement Rating: Fair / Imperative

Recommendation: B12 and Heart Failure
A multi-vitamin/mineral containing B12 or a combination of B6, B12 and folate could be recommended in HF patients. This level of B12 supplementation (200-500 mcg daily), given with other vitamins/minerals, has been shown to have beneficial clinical heart failure outcomes.

Statement Rating: Fair / Imperative

Recommendation: Thiamine Supplementation
Since diuretic use can lead to thiamine deficiency in patients with heart failure (HF), then the practitioner should evaluate thiamine status. The practitioner should encourage the patient to consume at least the DRI through food and/or supplements. The practitioner should stay alert to future research involving thiamine.

Statement Rating: Fair / Conditional

Recommendation: Alcohol and Heart Failure
Current limited evidence does not justify encouraging those who do not drink alcohol to start doing so. If a patient currently drinks alcohol, and if not contraindicated, then a maximum of one drink per day for women and up to two drinks per day for men may be tolerated. This level of alcohol consumption has been demonstrated to not be harmful in heart failure patients.

Statement Rating: Fair / Conditional

Recommendation: Magnesium Supplementation
The practitioner should encourage patients with heart failure (HF) to consume at least the DRI for magnesium through food and/or supplements. Low levels of magnesium may be present in patients with heart failure and irregular heart rhythms may occur. The practitioner should stay alert to future research involving magnesium.

Statement Rating: Fair / Conditional
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<th>Nutritional Anemia Profile</th>
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**Nutrition Intervention**

Listed below are the key recommendations to consider during the intervention phase and follow-up encounters. The list of possible IDNT terms is below. During each encounter, individualize the intervention depending on the patient’s needs.

**Recommendation: Fluid Intake**

For patients with heart failure, fluid intake should be between 1.4 and 1.9 L (48-64 oz.) per day, depending on clinical symptoms (i.e. edema, fatigue, shortness of breath). Fluid restriction will improve clinical symptoms and quality of life.

**Statement Rating:** Fair / Imperative

<table>
<thead>
<tr>
<th>Associated IDNT Terms</th>
<th>Vitamin and Mineral Supplements</th>
<th>Nutrition Education–Content</th>
</tr>
</thead>
<tbody>
<tr>
<td>General/healthful diet</td>
<td>Thiamin</td>
<td></td>
</tr>
<tr>
<td>Modify distribution, type or amount of food and nutrients within meals or at specified time</td>
<td>Riboflavin</td>
<td>Priority modifications</td>
</tr>
<tr>
<td>Specific foods/beverages or groups</td>
<td>Niacin</td>
<td>Survival information</td>
</tr>
<tr>
<td>Other (specify):</td>
<td>Folate</td>
<td>Nutrition relationship to health/disease: decrease workload of the heart</td>
</tr>
<tr>
<td>Enteral Nutrition</td>
<td>B6</td>
<td>Recommended modifications</td>
</tr>
<tr>
<td>Formula/solution</td>
<td>B12</td>
<td>Nutrition Education Application</td>
</tr>
<tr>
<td>Feeding tube flush</td>
<td>Potassium</td>
<td>Result interpretation: explain weight change</td>
</tr>
<tr>
<td>Parenteral Nutrition/IV Fluids</td>
<td>Sodium</td>
<td>Theoretical Basis/Approach</td>
</tr>
<tr>
<td>IV fluids</td>
<td>Nutrition-Related Medication Management</td>
<td>Cognitive-Behavioral Theory</td>
</tr>
<tr>
<td>Medical Food Supplements</td>
<td>Medications(specify prescription or OTC): w/medications</td>
<td>Health Belief Model</td>
</tr>
<tr>
<td>Commercial beverage: soft drinks; commercial formulas (e.g., pulmonary and renal formulas, etc)</td>
<td></td>
<td>Transtheoretical Model/Stages of Change</td>
</tr>
<tr>
<td>Commercial food</td>
<td></td>
<td>Strategies</td>
</tr>
<tr>
<td>Modified beverage</td>
<td></td>
<td>Goal setting</td>
</tr>
<tr>
<td>Modified food</td>
<td></td>
<td>Self-monitoring</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Problem-solving</td>
</tr>
</tbody>
</table>
**Recommendation: Sodium Intake**

For patients with heart failure, sodium intake should be less than 2000 mg (2 g) per day. Sodium restriction will improve clinical symptoms (i.e. edema, fatigue) and quality of life.

*Statement Rating: Fair / Imperative*

<table>
<thead>
<tr>
<th>Associated IDNT Terms</th>
</tr>
</thead>
<tbody>
<tr>
<td>Medical Food Supplements</td>
</tr>
<tr>
<td>Commercial beverage</td>
</tr>
<tr>
<td>Commercial food</td>
</tr>
<tr>
<td>Modified beverage</td>
</tr>
<tr>
<td><strong>Vitamin and Mineral Supplements</strong></td>
</tr>
<tr>
<td>Multi-trace elements</td>
</tr>
<tr>
<td>Sodium</td>
</tr>
<tr>
<td><strong>Bioactive Substance Management</strong></td>
</tr>
<tr>
<td>Food additives</td>
</tr>
</tbody>
</table>

**Recommendation: Folate and Heart Failure**

The practitioner should encourage patients with HF to consume at least the DRI for folate through food and/or a combination of B6, B12, and folate supplementation. Folate supplementation given with other vitamins/minerals has been shown to have beneficial clinical HF outcomes.

*Statement Rating: Fair / Imperative*

<table>
<thead>
<tr>
<th>Associated IDNT Terms</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Meal and Snacks</strong></td>
</tr>
<tr>
<td>General/healthful diet</td>
</tr>
<tr>
<td><strong>Vitamin and Mineral Supplements</strong></td>
</tr>
<tr>
<td>Multivitamin/mineral</td>
</tr>
<tr>
<td>Folate</td>
</tr>
<tr>
<td>B6</td>
</tr>
<tr>
<td>B12</td>
</tr>
<tr>
<td><strong>Nutrition-Related Medication Management</strong></td>
</tr>
<tr>
<td>Medications</td>
</tr>
<tr>
<td>Herbal/complementary products</td>
</tr>
</tbody>
</table>
**Recommendation: B12 and Heart Failure**
A multi-vitamin/mineral containing B12 or a combination of B6, B12 and folate could be recommended in HF patients. This level of B12 supplementation (200-500 mcg daily), given with other vitamins/minerals, has been shown to have beneficial clinical heart failure outcomes.

*Statement Rating:* Fair / Imperative

**Associated IDNT Terms**

<table>
<thead>
<tr>
<th>Meal and Snacks</th>
<th>Vitamin and Mineral Supplements</th>
<th>Nutrition Education Application</th>
</tr>
</thead>
<tbody>
<tr>
<td>General/healthful diet</td>
<td>Multivitamin/mineral</td>
<td></td>
</tr>
<tr>
<td>Modify distribution, type or amount of food and nutrients within meals or at specified time</td>
<td>Folate</td>
<td></td>
</tr>
<tr>
<td>Enteral Nutrition</td>
<td>B6</td>
<td>Theoretical Basis/Approach</td>
</tr>
<tr>
<td>Formula/solution</td>
<td>B12</td>
<td>Cognitive-Behavioral Theory</td>
</tr>
<tr>
<td>Insert enteral feeding tube</td>
<td>Nutrition-Related Medication Management</td>
<td>Social Learning Theory</td>
</tr>
<tr>
<td>Parenteral Nutrition/IV Fluids</td>
<td>Medications: effect on utilization</td>
<td>Transtheoretical Model/Stages of Change</td>
</tr>
<tr>
<td>Formula/solution</td>
<td>Herbal/complementary products: effect on utilization</td>
<td>Strategies</td>
</tr>
<tr>
<td></td>
<td>Nutrition Education—Content</td>
<td>Goal setting</td>
</tr>
<tr>
<td></td>
<td>Purpose of the nutrition education</td>
<td>Self-monitoring</td>
</tr>
<tr>
<td></td>
<td>Priority modifications</td>
<td>Problem solving</td>
</tr>
<tr>
<td></td>
<td>Recommend modifications</td>
<td></td>
</tr>
</tbody>
</table>

**Recommendation: Thiamine Supplementation**
Since diuretic use can lead to thiamine deficiency in patients with heart failure (HF), then the practitioner should evaluate thiamine status. The practitioner should encourage the patient to consume at least the DRI through food and/or supplements. The practitioner should stay alert to future research involving thiamine.

*Statement Rating:* Fair / Conditional

**Associated IDNT Terms**

<table>
<thead>
<tr>
<th>Meal and Snacks</th>
<th>Vitamin and Mineral Supplements</th>
<th>Strategies</th>
</tr>
</thead>
<tbody>
<tr>
<td>General/healthful diet</td>
<td>Multivitamin/mineral</td>
<td>Motivational interviewing</td>
</tr>
<tr>
<td>Modify distribution, type or amount of food and nutrients within meals or at specified time</td>
<td>Thiamin</td>
<td>Goal setting</td>
</tr>
<tr>
<td>Specific foods/beverages or groups</td>
<td>Nutrition-Related Medication Management</td>
<td>Self-monitoring</td>
</tr>
<tr>
<td>Enteral Nutrition</td>
<td>Medications: interactions</td>
<td>Problem solving</td>
</tr>
<tr>
<td>Formula/solution</td>
<td>Herbal/complementary products: interactions</td>
<td>Coordination of Other Care During Nutrition Care</td>
</tr>
<tr>
<td>Feeding tube flush</td>
<td>Theoretical Basis/Approach</td>
<td>Team meeting: monitor thiamine levels</td>
</tr>
<tr>
<td>Parenteral Nutrition/IV Fluids</td>
<td>Cognitive-Behavioral Theory</td>
<td></td>
</tr>
<tr>
<td>Formula/solution</td>
<td>Social Learning Theory</td>
<td></td>
</tr>
<tr>
<td>Medical Food Supplements</td>
<td>Transtheoretical Model/Stages of Change</td>
<td></td>
</tr>
<tr>
<td>Commercial beverage</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Recommendation: Magnesium Supplementation
The practitioner should encourage patients with heart failure (HF) to consume at least the DRI for magnesium through food and/or supplements. Low levels of magnesium may be present in patients with heart failure and irregular heart rhythms may occur. The practitioner should stay alert to future research involving magnesium.

Statement Rating: Fair / Conditional

<table>
<thead>
<tr>
<th>Associated IDNT Terms</th>
<th>Result interpretation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Meal and Snacks</td>
<td>Nutrition-Related Medication Management</td>
</tr>
<tr>
<td>General/healthful diet</td>
<td>Nutrition Education Application</td>
</tr>
<tr>
<td>Modify distribution, type or amount of food and nutrients within meals or at specified time</td>
<td>Herbal/complementary products: interactions and sources of magnesium</td>
</tr>
<tr>
<td>Enteral Nutrition</td>
<td>Nutrition Education–Content</td>
</tr>
<tr>
<td>Formulasolution</td>
<td>Purpose of the nutrition education</td>
</tr>
<tr>
<td>Parenteral Nutrition/IV Fluids</td>
<td>Priority modifications</td>
</tr>
<tr>
<td>Formulasolution</td>
<td>Nutrition relationship to health/disease</td>
</tr>
<tr>
<td>Vitamin and Mineral Supplementation</td>
<td>Recommended modifications</td>
</tr>
<tr>
<td>Multivitamin/mineral</td>
<td></td>
</tr>
<tr>
<td>Multi-trace elements</td>
<td></td>
</tr>
<tr>
<td>Magnesium</td>
<td></td>
</tr>
</tbody>
</table>

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**Recommendation: Alcohol and Heart Failure**
Current limited evidence does not justify encouraging those who do not drink alcohol to start doing so. If a patient currently drinks alcohol, and if not contraindicated, then a maximum of one drink per day for women and up to two drinks per day for men may be tolerated. This level of alcohol consumption has been demonstrated to not be harmful in heart failure patients.

**Statement Rating: Fair / Conditional**

**Associated IDNT Terms**

<table>
<thead>
<tr>
<th>Meal and Snacks</th>
<th>Nutrition Education–Content</th>
<th>Strategies</th>
</tr>
</thead>
<tbody>
<tr>
<td>General/healthful diet</td>
<td>Purpose of the nutrition education</td>
<td>Motivational interviewing</td>
</tr>
<tr>
<td>Vitamin and Mineral Supplements</td>
<td>Priority modifications</td>
<td>Goal Setting</td>
</tr>
<tr>
<td>Thiamin: essential to monitor if ETOH intake is in excess of guideline</td>
<td>Survival information</td>
<td>Self-monitoring</td>
</tr>
<tr>
<td>Riboflavin: essential to monitor if ETOH intake is in excess of guideline</td>
<td>Nutrition relationship to health/disease</td>
<td>Problem solving</td>
</tr>
<tr>
<td>B6: essential to monitor if ETOH intake is in excess of guideline</td>
<td>Recommended modifications</td>
<td>Social support</td>
</tr>
<tr>
<td>B12: essential to monitor if ETOH intake is in excess of guideline</td>
<td>Theoretical Basis/Approach</td>
<td>Stress management</td>
</tr>
<tr>
<td>Nutrition-Related Medication Management</td>
<td>Health Belief Model</td>
<td>Coordination of Other Care During Nutrition Care</td>
</tr>
<tr>
<td>Herbal/complementary products: interaction and sources</td>
<td>Social Learning Theory</td>
<td>Team meeting</td>
</tr>
<tr>
<td>Transtheoretical Model/Stages of Change</td>
<td></td>
<td>Referral to community agencies/programs (specify): AA</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Discharge and Transfer of Nutrition Care to New Setting or Provider</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Collaboration/referral to other providers</td>
</tr>
</tbody>
</table>

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**Recommendation: L-Arginine, Carnitine, Coenzyme Q10 and Hawthorn**

If a patient inquires about or is currently taking L-arginine, carnitine, coenzyme Q10 or hawthorn supplements, then the practitioner may discuss the limited evidence available regarding clinical heart failure outcomes. Research is inconclusive. The practitioner should stay alert to future research involving these supplements.

**Statement Rating: Weak / Conditional**

**Associated IDNT Terms**

<table>
<thead>
<tr>
<th>Meal and Snacks</th>
<th>Nutrition-Related Medication Management</th>
<th>Theoretical Basis/Approach</th>
</tr>
</thead>
<tbody>
<tr>
<td>General/healthful diet</td>
<td>Medications: statin medications</td>
<td>Cognitive-Behavioral Theory</td>
</tr>
<tr>
<td><strong>Enteral Nutrition</strong></td>
<td>Herbal/complementary products: L-arginine, carnitine, coenzyme Q10</td>
<td>Health Belief Model</td>
</tr>
<tr>
<td><strong>Formula/solution: protein content</strong></td>
<td>Nutrition Education–Content</td>
<td>Social Learning Theory</td>
</tr>
<tr>
<td><strong>Parenteral Nutrition/IV Fluids</strong></td>
<td>Purpose of the nutrition education</td>
<td>Strategies</td>
</tr>
<tr>
<td><strong>Formula/solution: protein content</strong></td>
<td>Priority modifications</td>
<td>Motivational interviewing</td>
</tr>
<tr>
<td><strong>Medical Food Supplements</strong></td>
<td>Nutrition relationship to health/disease</td>
<td>Goal setting</td>
</tr>
<tr>
<td>Modified food: protein added if wound</td>
<td>Recommended modifications</td>
<td>Problem solving</td>
</tr>
</tbody>
</table>

**Coordination of Other Care During Nutrition Care**

Team meeting

Referral to RD with different expertise: Integrative and Functional Medicine
Instructions for Medical Nutrition Therapy Sample Referral Form

The medical nutrition therapy sample referral form is designed to provide the Registered Dietitian with the appropriate patient and client information from the primary care provider, which is needed to initiate MNT. In addition to documenting the medical necessity for MNT, a completed and signed referral form – in some cases, such as with Medicare Part B – meets legal and regulatory requirements that allow the RD to provide and bill for the MNT services. Additional information needed for the MNT visit can also be obtained through a review of the medical record, if available. The original referral form should be kept in the medical record and a copy within the nutrition office.

Some medical providers may not be familiar with the legal and regulatory requirements that link the referral to the initiation of the MNT services. For example, under Medicare Part B for MNT, a physician referral is required before the RD provides and then submits claims for the MNT service(s).

It may be beneficial to collaborate with medical directors, compliance officers and physicians in your institution or clinics or physician offices to implement a process for outpatient MNT referrals. Some medical offices may feel that HIPAA (Health Insurance Portability and Accountability Act) privacy regulations will not allow them to share their client’s medical information. The reminder that MNT services and the RD are part of the “Chain of Trust,” as listed on the bottom of the sample referral form, will assist in this process. Recall that health care professionals may use and disclose protected health information without patient’s written authorization for treatment purposes, including coordination or management of the patient’s medical treatment or services.

The form provided in this toolkit is a general nutrition referral form. However, it may also be adapted to include more specific information, based on the patient or client population. Additional patient and client information that may be collected on the form might include:

♦ Additional or specific laboratory values and date drawn
♦ Specific medications and dosages
♦ Specific patient and client goals or pertinent impressions
♦ Any other pertinent information
♦ Additional or specific medical diagnosis (diagnosis categories and codes listed below may assist in locating specific nutrition-related medical diagnoses, please note that diagnosis codes may change over time, for a complete and current list go to http://icd9cm.chrisendres.com/index.php?action=contents

The government and all health plans will be transitioning to a new diagnosis code system, ICD-10-CM, where all groups and providers must convert from ICD-9 to the new system by October 1, 2013. For more information go to the Academy’s web page at: http://www.eatright.org/coverage and Centers for Medicare and Medicare Services ICD-10 site at https://www.cms.gov/ICD10/.

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<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>240-279</td>
<td>ENDOCRINE, NUTRITIONAL AND METABOLIC DISEASES, AND IMMUNITY DISORDERS</td>
</tr>
<tr>
<td>250-259</td>
<td>DISEASES OF OTHER ENDOCRINE GLANDS</td>
</tr>
<tr>
<td>260-269</td>
<td>NUTRITIONAL DEFICIENCIES EXCLUDES DEFICIENCY ANEMIAS (280.0-281.9)</td>
</tr>
<tr>
<td></td>
<td>260 KWAISHUKOR</td>
</tr>
<tr>
<td></td>
<td>NUTRITIONAL EDEMA WITH DYSPIGMENTATION OF SKIN AND HAIR</td>
</tr>
<tr>
<td></td>
<td>261 NUTRITIONAL MARASMUS</td>
</tr>
<tr>
<td></td>
<td>NUTRITIONAL ATROPHY</td>
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<tr>
<td></td>
<td>SEVERE CALORIE DEFICIENCY</td>
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<tr>
<td></td>
<td>SEVERE MALNUTRITION NOS</td>
</tr>
<tr>
<td></td>
<td>262 OTHER SEVERE PROTEIN-CALORIE MALNUTRITION</td>
</tr>
<tr>
<td></td>
<td>NUTRITIONAL EDEMA WITHOUT MENTION OF DYSPIGMENTATION OF SKIN AND HAIR</td>
</tr>
<tr>
<td></td>
<td>263 OTHER AND UNSPECIFIED PROTEIN-CALORIE MALNUTRITION</td>
</tr>
<tr>
<td>270-279</td>
<td>OTHER METABOLIC AND IMMUNITY DISORDERS</td>
</tr>
<tr>
<td>320-389</td>
<td>NERVOUS SYSTEM AND SENSE ORGANS</td>
</tr>
<tr>
<td>340-349</td>
<td>OTHER DISORDERS OF THE CENTRAL NERVOUS SYTEM</td>
</tr>
<tr>
<td>390-459</td>
<td>DISEASES OF THE CIRCULATORY SYSTEM</td>
</tr>
<tr>
<td>401-405</td>
<td>HYPERTENSIVE DISEASE</td>
</tr>
<tr>
<td>410-414</td>
<td>ISCHEMIC HEART DISEASE</td>
</tr>
<tr>
<td>415-417</td>
<td>DISEASE OF PULMONARY CIRCULATION</td>
</tr>
<tr>
<td>420-429</td>
<td>OTHER FORMS OF HEART DISEASE</td>
</tr>
<tr>
<td>520-579</td>
<td>DISEASES OF THE DIGESTIVE SYSTEM</td>
</tr>
<tr>
<td>530-537</td>
<td>DISEASES OF ESOPHAGUS, STOMACH, AND DUODENUM</td>
</tr>
<tr>
<td>555-558</td>
<td>NONINFECTIOUS ENTERITIS COLITIS</td>
</tr>
<tr>
<td>560-569</td>
<td>OTHER DISEASES OF INTESTINES AND PERITONEUM</td>
</tr>
<tr>
<td></td>
<td>564.0- 564.9 CONSTIPATION</td>
</tr>
<tr>
<td>570-579</td>
<td>OTHER DISEASES OF DIGESTIVE SYSTEM</td>
</tr>
<tr>
<td>580-629</td>
<td>DISEASES OF THE GENITOURINARY SYSTEM</td>
</tr>
<tr>
<td>580-589</td>
<td>NEPHRITIS, NEPHROTIC SYNDROME, AND NEPHROSIS</td>
</tr>
<tr>
<td>590-599</td>
<td>OTHER DISEASES OF URINARY SYSTEM</td>
</tr>
<tr>
<td>780-799</td>
<td>SYMPTOMS, SIGNS, AND ILL-DEFINED CONDITIONS</td>
</tr>
<tr>
<td>780-789</td>
<td>SYMPTOMS</td>
</tr>
<tr>
<td>790-796</td>
<td>NONSPECIFIC ABNORMAL FINDINGS</td>
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<tr>
<td>V01-V85</td>
<td>SUPPLEMENTARY CLASSIFICATION OF FACTORS INFLUENCING HEALTH STATUS AND</td>
</tr>
<tr>
<td></td>
<td>CONTACT WITH HEALTH SERVICES</td>
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</tbody>
</table>

Source: Free online searchable 2006 ICD-9-CM .chrisendres.com
**Referral for Medical Nutrition Therapy (MNT)**

Please attach current list of medications, dosages & current lab results.

<table>
<thead>
<tr>
<th>Date:</th>
<th>Patient name:</th>
<th>Date of Birth:</th>
</tr>
</thead>
<tbody>
<tr>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Day time phone number:</th>
<th>Insurance:</th>
<th>Medical Record Number:</th>
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</thead>
<tbody>
<tr>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Height:</th>
<th>Weight/date:</th>
<th>Waist Circumference:</th>
<th>Gender:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Number of MNT visits requested ________________
MNT is a necessary part of the patient’s medical treatment for the medical diagnosis(es) listed below.

### **REASON FOR ORDERING MNT**

**ICD-9 MEDICAL DIAGNOSES** (check all that apply below, required to initiate MNT service)

<table>
<thead>
<tr>
<th>ICD-9</th>
<th>ENDOCRINE, NUTRITIONAL AND METABOLIC, IMMUNITY</th>
<th>ICD-9</th>
<th></th>
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<tbody>
<tr>
<td>249.2</td>
<td>Nonketotic hyperosmolar diabetic acidosis</td>
<td>402.91</td>
<td>Unspecified hypertension with heart failure</td>
</tr>
<tr>
<td>250.00</td>
<td>Diabetes II/unspecified</td>
<td>403.9</td>
<td>Hypertensive nephritis</td>
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<tr>
<td>250.01</td>
<td>Diabetes I</td>
<td>404</td>
<td>Hypertensive heart and chronic kidney disease</td>
</tr>
<tr>
<td>250.02</td>
<td>Diabetes II/unspecified, uncontrolled</td>
<td>414.0</td>
<td>Coronary artherosclerosis</td>
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<tr>
<td>250.03</td>
<td>Diabetes I uncontrolled</td>
<td>414.9</td>
<td>Chronic ischemic heart disease, unspecified</td>
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<td>250.1</td>
<td>Diabetes with ketoacidosis</td>
<td>425</td>
<td>Cardiomyopathy</td>
</tr>
<tr>
<td>251.1</td>
<td>Hypoglycemia (insulin related)</td>
<td>425.5</td>
<td>Alcoholic cardiomyopathy</td>
</tr>
<tr>
<td>251.2</td>
<td>Hypoglycemia (diverse etiology – low blood glucose)</td>
<td>425.7, 428.1-428.2</td>
<td>Nutritional and metabolic cardiomyopathy, Systolic heart failure</td>
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<tr>
<td>259.9</td>
<td>Obesity (endocrine/endogenous)</td>
<td>428.3</td>
<td>Diastolic heart failure</td>
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<tr>
<td>263.9</td>
<td>Unspecified malnutrition</td>
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<td><strong>DIGESTIVE SYSTEM</strong></td>
</tr>
<tr>
<td>272.0</td>
<td>Pure hypercholesterolemia</td>
<td>555.9</td>
<td>Crohn’s disease NOS</td>
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<td>278.00</td>
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<td>Folate deficiency anemia</td>
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<td>Abnormal loss of weight</td>
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<td>285.21</td>
<td>Anemia in chronic kidney disease</td>
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<td>Cachexia (cardiac)</td>
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<td>402.0</td>
<td>Hypertensive heart disease</td>
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</table>
Relevant Lab Data (attach current lab data or complete chart below)  

Physical Activity Restrictions: none: ______
limit to: ________________

<table>
<thead>
<tr>
<th>Date</th>
<th>Lab value</th>
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</thead>
<tbody>
<tr>
<td>BNP</td>
<td>mm Hg</td>
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<tr>
<td>BP</td>
<td>mg/dL</td>
</tr>
<tr>
<td>Glucose</td>
<td>mg/dL</td>
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<td>HbA1c</td>
<td>%</td>
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<td>TC</td>
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<td>Potassium</td>
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</tr>
<tr>
<td>Magnesium</td>
<td>mg/dL</td>
</tr>
<tr>
<td>eGFR</td>
<td>mL/min/1.73m²</td>
</tr>
</tbody>
</table>

Relevant Medications and Dosages (type/frequency):

Comments/physician’s orders  Sodium: ________________________
Fluid: ________________________

Medical conditions:

Enteral/parenteral nutrition:

Goals for nutrition therapy:

Referring Provider’s Signature ________________________________ Date _____________

UPIN/NPI number: ________________________________

Contact Name/Phone: ________________________________
# Medical Nutrition Therapy Heart Failure Initial Progress Note

**Name:** __________________________  **MR#** __________________________  **DOB:** __________________________

## NUTRITION ASSESSMENT

Refer to the Academy International Dietetics & Nutrition Terminology Reference Manual for appropriate measures of the indicators below.

Note: Assessment items below are indicated by the Academy’s Heart Failure Evidence-based Nutrition Practice Guideline.

### Food/Nutrition-Related History

#### Energy intake
- Total Energy Intake

#### Fluid/beverage intake
- Oral Fluids Amounts
- Food-derived fluids
- Liquid meal replacement or supplement

#### Food intake
- Amount of food
- Types of food/meals
- Meal/snack pattern
- Diet quality index
- Food variety

#### Enteral nutrition intake
- Formula/solution

#### Alcohol Intake
- Drink size/volume
- Frequency

#### Bioactive substance intake
- Soy protein

#### Fat and cholesterol intake
- Total fat

#### Protein intake
- Total protein
- High biological value protein
- Amino acids
- Essential amino acids

#### Carbohydrate intake
- Total carbohydrate

#### Fiber intake
- Total fiber

#### Vitamin intake
- Folate
- B6
- B12
- Thiamin
- Multivitamin

#### Mineral/element intake
- Sodium
- Potassium
- Magnesium

#### Diet order
- General, healthful diet
- Modified diet (specify):
- Enteral nutrition order (specify):
- Parenteral nutrition order (specify):

#### Diet experience
- Previously prescribed diets
- Previous diet/nutrition education/counseling

#### Eating environment
- Location
- Atmosphere
- Caregiver/companion
- Eats alone

#### Medication and herbal supplements
- Herbal/complimentary products
- Misuse of medication (illegal drug use)

#### Beliefs and attitudes
- Motivation
- Readiness to change nutrition-related behaviors

#### Adherence
- Self-reported adherence score
- Nutrition visit attendance
- Self-management as agreed upon

#### Mealtime behavior
- Percent of meal time spent eating
- Preference to drink rather than eat

#### Food/nutrition program participation
- Eligibility for government programs
- Participation in government programs
- Eligibility for community programs
- Participation in community programs

#### Nutrition-related ADLs and IADLs
- Physical ability to complete tasks for meal preparation
- Receives assistance with intake
- Nutrition-related activities of daily living (ADL) score

#### Physical activity
- Physical activity history
- Type of physical activity
- TV/screen time
- Other sedentary activity time
- Involuntary physical movement

#### Nutrition quality of life
- Nutrition quality of life responses
- Other:

---

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### Anthropometric Measurements

- Height __________
- Weight ______ Usual Body Weight ______
- Mid-arm circumference __________
- Waist circumference __________
- Weight change: actual change (+/-) ______ percent change ______
- Body mass index __________
- Other: ________________________________

### Biochemical Data, Medical Tests and Procedures

<table>
<thead>
<tr>
<th>Test</th>
<th>Date</th>
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</thead>
<tbody>
<tr>
<td>B-type Natriuretic Peptide (BNP)</td>
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<tr>
<td>BUN</td>
<td></td>
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<tr>
<td>Creatinine</td>
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<td>BUN:creatinine ratio</td>
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<td>Glomerular filtration rate</td>
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<td>Glucose, fasting</td>
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<td>Home blood glucose results</td>
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<td>Triglycerides</td>
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<td>Folate</td>
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<td>Vitamin B6</td>
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<tr>
<td>Thiamine</td>
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</tr>
<tr>
<td>Albumin</td>
<td></td>
</tr>
<tr>
<td>Prealbumin</td>
<td></td>
</tr>
<tr>
<td>Transferrin</td>
<td></td>
</tr>
<tr>
<td>Other:</td>
<td></td>
</tr>
</tbody>
</table>

### Nutrition-Focused Physical Findings

- Overall appearance (specify): ____________________________________________________________________________________
- Cardiovascular-pulmonary system (edema [1+, 2+, 3+], shortness of breath) _________________________________________________
- Digestive system (mouth to rectum): ________________________________________________________________________________
  - Appetite ______ (1- no appetite, 2- fair, 3- varies from day to day, 4-good, 5-excellent)
- Skin (e.g., wound, ulcer and turgor) (specify) ______________________________________________________________________

### Client History

#### Personal History
- Age ______
- Gender ______
- Race/Ethnicity __________

#### Patient/Client Health History
- Patient/client chief nutrition complaint __________________________
- Last hospitalization ______ Reason ____________________________ Length of stay ______
- Diabetes ______ CAD ______ MI ______ Afib ______ Renal ______
- Systolic dysfunction (Ejection Fraction) ______ % OR diastolic dysfunction ______
- Tobacco use __________________________

#### Family Medical History
- Heart Failure ______ Diabetes ______ CAD ______ Afib ______ Renal ______

#### Social History
- Living/housing situation (specify) _______________________________________
- Other _______________________________________

### Comparative Standards

- Estimated energy needs
  - Total energy estimated needs __________________________
  - Method for estimating needs __________________________
- Estimated fat needs
  - Total fat estimated needs __________________________
  - Type of fat needed __________________________
  - Method for estimating needs __________________________
- Estimated protein needs
  - Total protein estimated needs __________________________
  - Type of protein needed __________________________
  - Method for estimating needs __________________________
- Estimated carbohydrate needs
  - Total carbohydrate estimated needs __________________________
  - Type of carbohydrate needed __________________________
  - Method for estimating needs __________________________
- Estimated fiber needs
  - Total fiber estimated needs __________________________
  - Type of fiber needed __________________________
  - Method for estimating needs __________________________
- Estimated fluid needs
  - Total fluid estimated needs __________________________
  - Method for estimating needs __________________________
  - Other: _____________________________________________

### Estimated energy needs

- Estimated fat needs
  - Estimated protein needs
  - Estimated carbohydrate needs
  - Estimated fluid needs

### Typical Intake and/or Nutrient Analysis:

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NUTRITION DIAGNOSIS (select priority diagnosis)

Intake
- Inadequate oral food or beverage intake
- Excessive fluid intake
- Inadequate fluid intake
- Decreased nutrient (sodium) need
- Altered nutrition related lab values
- Increased energy intake
- Inadequate energy intake
- Excessive energy intake
- Evident protein energy malnutrition

Clinical
- Inadequate protein intake
- Excessive protein intake
- Inadequate bioactive substance intake
- Excessive bioactive substance intake
- Inadequate vitamin intake
- Excessive vitamin intake
- Inadequate mineral intake
- Excessive mineral intake (specifically sodium)

Behavioral-environmental
- Food and Nutrition-Related Knowledge Deficit
- Harmful beliefs/attitudes about food- or nutrition-related topics
- Not ready for diet / lifestyle change
- Self-monitoring deficit
- Limited adherence to nutrition related recommendations
- Undesirable food choices
- Other

Nutrition Diagnosis Statements [Nutrition Diagnosis, Related To (Etiology) As Evidenced By (Signs/Symptoms)]:

NUTRITION INTERVENTION

Nutrition Prescription (The patient/client’s individualized recommended dietary intake of energy and/or selected food or nutrients based on current reference standards and dietary guidelines and the patient’s/client’s health condition and nutrition diagnosis):

Food and/or Nutrient Delivery

- Meal and snacks
  - General/healthful diet________________________________________
  - Modify distribution, type or amount of food and nutrients within meals or at specified time____________________________________________
  - Specific foods/beverages or groups_______________________________
  - Other:______________________________________________________

- Enteral nutrition
  - Formula/solution____________________________________________
  - Insert enteral feeding tube_____________________________________
  - Feeding tube flush____________________________________________

- Parenteral nutrition/IV Fluids
  - IV fluids____________________________________________________

- Medical food supplements
  - Commercial beverage________________________________________
  - Commercial food____________________________________________
  - Modified beverage___________________________________________
  - Modified food_______________________________________________

- Vitamin and mineral supplement
  - Multivitamin/mineral_________________________________________
  - Multi-trace elements__________________________________________

- Bioactive substance management
  - Food additives

- Nutrition-related medication management
  - Medications (specify prescription or OTC) ________________________
  - Herbal/complimentary products_______________________________
  - Other:__________________________

Goal/Expected Outcome:
Nutrition Education

Nutrition education-content
☐ Purpose of nutrition education
☐ Priority modifications
☐ Survival modification
☐ Nutrition relationship to health/disease
☐ Recommended modifications

Nutrition education application
☐ Result interpretation

Other: ________________________________

Goal/Expected Outcome:

Nutrition Counseling

Theoretical basis/approach
☐ Cognitive-Behavioral Theory
☐ Health Belief Model
☐ Social Learning Theory
☐ Transtheoretical Model/Stages of Change

Strategies
☐ Motivational interviewing
☐ Goal setting
☐ Self-monitoring
☐ Problem solving
☐ Social support
☐ Stimulus control
☐ Relapse prevention
☐ Other: ________________________________

Goal/Expected Outcome:

Coordination of Care

Coordination of other care during nutrition care
☐ Team meeting
☐ Referral to RD with specific expertise
☐ Referral to community agencies/programs (specify): ________________________________

Discharge and transfer or nutrition care to new setting or provider
☐ Collaboration/referral to other providers
☐ Other: ________________________________

Goal/Expected Outcome:

Education Materials Provided

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<tr>
<td>Definition of a fluid</td>
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<tr>
<td>Sodium content of foods</td>
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<tr>
<td>Where to get your protein</td>
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<tr>
<td>Potassium</td>
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<td>Dining out</td>
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<td>Vitamin K/warfarin</td>
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</tr>
</tbody>
</table>

NUTRITION MONITORING AND EVALUATION [list indicator/term and specify criteria (goal or reference)]

Food/Nutrition-related History, Anthropometric Measurements, Biochemical Data, Medical Tests and Procedure, Nutrition-focused Physical Findings, Comparative Standards Outcomes

☐ ____________________________ Criteria: ____________________________
☐ ____________________________ Criteria: ____________________________
☐ ____________________________ Criteria: ____________________________

Next Visit: ____________________________ RD Signature: ____________________________
Date: ____________________________
# Medical Nutrition Therapy Heart Failure Follow-up Progress Note

**Name:**

**MR#**

**DOB:**

## NUTRITION REASSESSMENT

List Previous Nutrition Diagnoses:

- [ ] Resolved (nutrition problem no longer exists)
- [ ] Improvement shown (nutrition problem still exists)
- [ ] Unresolved no improvement shown
- [ ] No longer appropriate (change in condition)

## CHECK ANY NEWLY ASSESSED ITEMS

Refer to the Academy’s International Dietetics & Nutrition Terminology Reference Manual for appropriate measures of the indicators below.

Note: Assessment items below are indicated by the Academy’s Heart Failure Evidence-based Nutrition Practice Guideline.

### Food/Nutrition-Related History

#### Energy Intake

- Total Energy Intake

#### Fluid/beverage intake

- Oral Fluids Amount
- Food-derived fluids
- Liquid meal replacement or supplement

#### Food intake

- Amount of food
- Types of food/meals
- Meal/snack pattern
- Diet quality index
- Food variety

#### Enteral nutrition intake

- Formula/solution

#### Parenteral nutrition intake

- Formula/solution

#### Alcohol Intake

- Drink size/volume
- Frequency

#### Bioactive substance intake

- Soy protein

#### Fat and cholesterol intake

- Total fat

#### Protein intake

- Total protein
- High biological value protein
- Amino acids
- Essential amino acids

#### Carbohydrate intake

- Total carbohydrate

#### Fiber intake

- Total fiber

#### Vitamin intake

- Folate
- B6
- B12
- Thiamin

#### Mineral/element intake

- Sodium
- Potassium
- Magnesium
- Other:

#### Total Energy Intake

- Amount of food
- Liquid meal replacement or supplement

#### Diet order

- General, healthful diet
- Modified diet (specify):
- Enteral nutrition order (specify):
- Parenteral nutrition order (specify):

#### Diet experience

- Previously prescribed diets
- Previous diet/nutrition education/counseling

#### Eating environment

- Location
- Atmosphere
- Caregiver/companion
- Eats alone

#### Medication and herbal supplements

- Herbal/complimentary products
- Misuse of medication (illegal drug use)

#### Beliefs and attitudes

- Motivation
- Readiness to change nutrition-related behaviors

#### Adherence

- Self-reported adherence score
- Nutrition visit attendance
- Self-management as agreed upon

#### Mealtime behavior

- Percent of meal time spent eating
- Preference to drink rather than eat

#### Food/nutrition program participation

- Eligibility for government programs
- Participation in government programs
- Eligibility for community programs
- Participation in community programs

#### Nutrition-related ADLs and IADLs

- Physical ability to complete tasks for meal preparation
- Receives assistance with intake
- Nutrition-related activities of daily living (ADL) score

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- Physical activity history
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- TV/screen time
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#### Nutrition quality of life

- Nutrition quality of life responses
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- Weight ________ Usual Body Weight ________
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## Biochemical Data, Medical Tests and Procedures

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- Creatinine __________
- BUN:creatinine ratio __________
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- Potassium __________
- Magnesium __________
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- Home blood glucose results __________
- HgbA1c __________
- Cholesterol __________
- Cholesterol, HDL __________
- Cholesterol, LDL __________
- Triglycerides __________
- B12, serum __________
- Folate __________
- Vitamin B6 __________
- Thiamine __________
- Albumin __________
- Prealbumin __________
- Transferrin __________
- Other: __________

## Nutrition-focused Physical Findings

- Overall appearance (specify): __________
- Cardiovascular-pulmonary system (edema[1+, 2+, 3+], shortness of breath) __________
- Digestive system (mouth to rectum): __________
  - Appetite _____ (1- no appetite, 2- fair, 3- varies from day to day, 4-good, 5-excellent)
- Skin (e.g., wound, ulcer and turgor) (specify) __________

## Client History

### Personal History
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- Gender __________
- Race/Ethnicity __________

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- Patient/client chief nutrition complaint __________
- Last hospitalization __________ Reason __________ Length of stay __________
- Diabetes _____ CAD _____ MI _____ Afib _____ Renal _____
- Systolic dysfunction (Ejection Fraction) _____ % OR diastolic dysfuction __________
- Tobacco use __________

### Family Medical History
- Heart Failure _____ Diabetes _____ CAD _____ Afib _____ Renal _____

### Social History
- Living/housing situation (specify) __________
- Other __________

### Comparative Standards

- Estimated energy needs
  - Total energy estimated needs __________
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  - Type of carbohydrate needed __________
  - Method for estimating needs __________
- Estimated fiber needs
  - Total fiber estimated needs __________
  - Type of fiber needed __________
  - Method for estimating needs __________
- Estimated fluid needs
  - Total fluid estimated needs __________
  - Method for estimating needs __________
  - Other: __________
  - Sodium and potassium __________

## Typical Intake and/or Nutrient Analysis:

**NUTRITION DIAGNOSIS (SELECT NEW OR ONGOING DIAGNOSIS)**

- Intake
  - Inadequate oral food or beverage
  - Inadequate protein intake
- Clinical
  - Altered GI function
- Behavioral-environmental
  - Food and Nutrition-Related Knowledge Deficit

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| Nutrition Diagnosis Statements (Nutrition Diagnosis, Related To (Etiology) As Evidenced By (Signs/Symptoms): Document any new or ongoing nutrition diagnoses: |
|---|---|
|  |  |

## NUTRITION INTERVENTION

### Nutrition Prescription
(The patient/client’s individualized recommended dietary intake of energy and/or selected food or nutrients based on current reference standards and dietary guidelines and the patient’s/client’s health condition and nutrition diagnosis):

### Food and/or Nutrient Delivery

- **Meal and snacks**
  - General/healthful diet
  - Modify distribution, type or amount of food and nutrients within meals or at specified time
  - Specific foods/beverages or groups
  - Other:

- **Enteral nutrition**
  - Formula/solution
  - Insert enteral feeding tube
  - Feeding tube flush

- **Parenteral nutrition/IV Fluids**
  - IV fluids

- **Medical food supplements**
  - Commercial beverage
  - Commercial food
  - Modified beverage
  - Modified food

- **Vitamin and mineral supplement**
  - Multivitamin/mineral
  - Multi-trace elements

- **Bioactive substance management**
  - Food additives

- **Nutrition-related medication management**
  - Medications (specify prescription or OTC)
  - Herbal/complimentary products
  - Other:

### Goal/Expected Outcome:

<table>
<thead>
<tr>
<th>Nutrition Education</th>
<th>Nutrition Counseling</th>
</tr>
</thead>
<tbody>
<tr>
<td>Purpose of nutrition education</td>
<td>Cognitive-Behavioral Theory</td>
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<tr>
<td>Priority modifications</td>
<td>Health Belief Model</td>
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<tr>
<td>Survival modification</td>
<td>Social Learning Theory</td>
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<td>Nutrition relationship to health/disease</td>
<td>Transtheoretical Model/Stages of Change</td>
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<tr>
<td>Recommended modifications</td>
<td>Strategies</td>
</tr>
</tbody>
</table>

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Nutrition education application
☐ Result interpretation___________________________________________
☐ Other:_____________________________________________________

Goal/Expected Outcome:

Motivational interviewing______________________________________
☐ Goal setting_________________________________________________
☐ Self-monitoring______________________________________________
☐ Problem solving______________________________________________
☐ Social support_______________________________________________
☐ Stimulus control_____________________________________________
☐ Relapse prevention___________________________________________
☐ Other______________________________________________________

Goal/Expected Outcome:

Coordination of Care
Coordination of other care during nutrition care
☐ Team meeting__________________________________________________
☐ Referral to RD with specific expertise_______________________________
☐ Referral to community agencies/programs
(specify):_____________________________________________________

Discharge and transfer or nutrition care to new setting or provider
☐ Collaboration/referral to other providers___________________________
☐ Other:___________________________________________________________________

Goal/Expected Outcome:

Education Materials Provided Date Given Education Materials Provided Date Given Education Materials Provided Date Given
☐ Definition of a fluid Date Given ☐ Sodium content of foods Date Given ☐ Potassium Date Given
☐ Where to get your protein Date Given ☐ Dining out Date Given ☐ Vitamin K/warfarin Date Given
☐ Dietitian recommendations Date Given

NUTRITION MONITORING AND EVALUATION [list indicator/term and specify criteria (goal or reference)]

Food/Nutrition-related History, Anthropometric Measurements, Biochemical Data, Medical Tests and Procedure,
Nutrition-focused Physical Findings, Comparative Standards Outcomes

☐ Criteria:______________________ ☐ Criteria:______________________ ☐ Criteria:______________________
☐ Criteria:______________________ ☐ Criteria:______________________ ☐ Criteria:______________________
☐ Criteria:______________________ ☐ Criteria:______________________ ☐ Criteria:______________________

Next Visit: ____________________ RD Signature: __________________________________________
Date:_________________________
Medical Nutrition Therapy Initial Encounter Summary Report

Name:_________________________Date:_________________________________

DOB_________________________MRN___________________________

Height ____ Weight_____ UBW____ % Weight change/week/months ______ BMI____ Body Fat %_____

Changes in medication:__________________________________________________________

Left Ventricle Ejection Fraction (LVEF) ______

Lab Values: NA/K____ BUN/CR____ TC:_____ LDL:_____ HDL:_____ TG:_____ BNP_______ ALB____

Vit D:_____ Hgb:_____ Other:____________________

Exercise (type/frequency):________________________________________________________

Smoking: YES / NO; packs per week:___________ ETOH: YES / NO; drinks/day:__________

Dietary Assessment

Nutrition Diagnosis

Intervention and Plan

Educational Materials Provided:________ Level of Understanding: GOOD FAIR POOR

Goals:___________________________________________________________________________

Signed:_________________________Date_________________Time__________________

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Medical Nutrition Therapy Follow-up Encounter
Summary Report
Name:_______________________________________________ Date:_________________________________
DOB____________________________________ MRN____________________________________
Height ______ Weight_____ UBW_____ % Weight change/week/months_______ BMI:______ Body
Fat%______
Changes in medication:___________________________________________________________________
Left Ventricle Ejection Fraction (LVEF) ______
Lab Values: NA/K______ BUN/CR______ TC:_____ LDL:_____ HDL:_____ TG:_____ BNP_____ ALB_____
Vit D:_____ Hgb:_____ Other:_____
Exercise (type/frequency):________________________________________________________________
Smoking: YES / NO; packs per week:_______________ ETOH: YES / NO; drinks/day:___________
Changes since last visit: ______________________________________________________________________

Dietary Assessment

Goals met? YES/NO: ____________________________________________________________________________

Nutrition Diagnosis


Intervention and Plan

Educational Materials Provided: ___________________________ Level of Understanding: GOOD FAIR POOR

Goals: ______________________________________________________________________________________

Signed: ________________________________ Date: ________________ Time: ____________
Heart Failure Narrative Initial Encounter-Case Study 1

Patient Name: N.S.  Account # 7831427
Attending MD: J.S.  Consulting MD: T.M.
Date of Consultation: 12/27/10

**Reason for Consultation**
This is a 52 year old Caucasian female who is evaluated for azotemia. She appears to have acute kidney injury. She was admitted with a BUN of 72 and creatinine of 4.6.

**History of Present Illness**
Patient has been short of breath for several days. She was initially treated for pneumonia with antibiotics. Because of the worsening dyspnea and pleuritic type of chest pain, she came to the emergency room where she had evidence of pneumonia, respiratory insufficiency and kidney injury. Apparently she has been weak, fell, has not been eating well, and has been drinking fluids poorly.

The patient has significant chronic obstructive lung disease. At this time, she has bilateral infiltrates.

**Past Medical History**
Patient has history of a cerebral aneurysm. She had craniotomy done. Surgeries: shoulder, knee, gall bladder removal. She had video-assisted thoracic surgery (VATS) procedure done several years ago.

Other medical history includes: history of congestive heart failure (EF: 15-20%), small bowel obstruction, and anemia. There is no history of diabetes or hypertension.

**Medications on Admission**
Reviewed. These include inhalers, Cymbalta, Nexium, Neurontin, Seroquel, and topiramate.

**Social History**
She is an ex-smoker. No history of any abuse of alcohol.

**Family History**
There is history of colon cancer in the family.

**Review of Systems**
Patient continues to have poor appetite. History of questionable fever and chills. Poor intake. She had a bout of diarrhea, which lasted one day. Complains of dry mouth and dypsnea with minimal activity.

**Physical Examination**

**Abdomen**
Nontender, without any masses, rigidity, rebound, or bladder distention. Extremities: no significant edema. She moves all four extremities. She has chronic pain over the right side.

**Laboratory Data (follow-up labs)**
BUN 34 and creatinine 2.2. Potassium 4.7  BNP 720  Magnesium levels are normal. Previous BUN and creatinine were normal.

**Impression**
The patient has acute kidney injury, bilateral pneumonia, hypoxia, respiratory failure, hypotension, dehydration, low blood pressure due to volume depletion, decompensated heart failure.
Recommendation:
1. Insert Foley catheter
2. Urine studies
3. Hydrate her and monitor her urinary output and evaluate heart failure medications with stable renal function Dietitian consult

Adult Nutrition Initial Assessment/Plan
Date of RD consultation: 12/28/10

Physical Appearance
Ht 157 cm, Wt 53 kg, BMI 21.7 Usual wt 55 kg

Laboratory Data
BUN 72, Creatinine 4.6, Calcium 7.2, Phosphorus 7.3, glucose 105, BNP 720 Albumin 2.0

Medication Reconciliation
Include inhalers, Cymbalta, Neurontin, Seroquel, and topiramate, prilosec, solu-medrol, rocephin, zithromax, NaCl 0.45%+50 MEq sodium bicarbonate @100 ml/hr. No history of herbal supplements.

Since her pneumonia diagnosis several days ago, she has felt too weak to prepare meals. Food intake consisted of frozen TV dinners and boxed snack items. Patient states most of her time is spent sitting or sleeping and not eating or drinking fluids. She states that one year ago she was diagnosed with heart failure and she did receive information on a two gram sodium diet plan at that time.

Nutrition Risk
Involuntary weight loss as related to poor dietary intake, less than 1400 calories per day, as evidenced by 4 % weight loss.

Inadequate protein intake as related to worsening symptoms of heart failure and decreased food intake as evidenced by an albumin of 2.0.

Inadequate energy intake as related to patients’ limited ability for food preparation as evidenced by dietary recall indicating patient consuming less than 1400 calories per day

Inadequate fluid and beverage intake as related to poor PO intake as evidenced diminished skin turgor and elevated BUN.

Nutrition Plan
Estimate energy needs 1,740 Kcal/day; estimate protein needs 64 grams/day; estimate fluid needs 1,873 mL/day

RD to follow up/monitor during hospital stay and participate in team conference. Dietitian will provide appropriate nutritional supplements when diet able to be resumed and Ventimask is discontinued. If patient requires prolonged NPO, consider enteral nutrition support. Should tube feeding become necessary, would recommend Pulmocare. Suggest check pre-albumin. Recommend nutrition/RD follow-up.
Heart Failure Narrative Follow-up Encounter-Case
Study 1

Patient Name: N.S.  Account # 7831427
Mary Smith, RD
Date of Consultation: 1/7/11

Physical Appearance
Ht 157 cm, Wt 54 kg, BMI 21.7 Usual wt 55 kg Skin color improved and good skin turgor

Laboratory Data
BUN 18, Creatinine 1.1, Potassium 4.5, BNP 25, Albumin 2.2

Since patient’s discharge from hospital five days ago, dietary recall indicates improvement in energy, fluid, and protein intake. Kcal 1417, fluid intake 1700-1800 mL, protein intake 44 grams, sodium intake of 1800 mg and a potassium intake 1500 mg. Patient reports improved mobility and improved ability to prepare meals. Patient states shortness of breath less severe. Her spouse has been supportive. Appetite has improved, but she complains of early satiety.

Nutrition Diagnosis
Inadequate fluid intake, inadequate energy intake, inadequate protein intake as evidenced by albumin 2.2

Nutrition Plan
Sodium needs 2 grams or less per day. Estimate energy needs 1800 Kcal/day; estimate protein needs 59 grams/day; estimate fluid needs 1500 - 2000 mL/day. Recommend Suplena 1-2 times daily as snack and small frequent meals to improve patient’s ability to reach nutritional goals. Patient provided with printed information on foods higher in protein and lower sodium foods. Patient counseled on self-monitoring with food records and meal patterns.

Goal
Increase dietary intake to 90% of estimated energy, protein, fluid needs.
Medical Nutrition Therapy Heart Failure Initial Progress Note—Sample Documentation—Case Study 1

Name: ________________________  MR#: ____________  DOB: ____________

### NUTRITION ASSESSMENT

Refer to the Academy’s International Dietetics & Nutrition Terminology Reference Manual for appropriate measures of the indicators below. Note: Assessment items below are indicated by the Academy’s Heart Failure Evidence-based Nutrition Practice Guideline.

#### Food/Nutrition-Related History

<table>
<thead>
<tr>
<th>Category</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Energy Intake</strong></td>
<td>X Total Energy Intake estimated &lt; 1400 kcal/d</td>
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<td><strong>Fluid/beverage intake</strong></td>
<td>☐ Oral Fluids Amounts</td>
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<td>☐ Food-derived fluids</td>
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<td></td>
<td>☐ Liquid meal replacement or supplement</td>
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<td><strong>Food intake</strong></td>
<td>☐ Amount of food</td>
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<td>☐ Types of food/meals</td>
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<td><strong>Parenteral nutrition intake</strong></td>
<td>☐ Formula/solution</td>
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<td>☐ Drink size/volume</td>
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<td></td>
<td>☐ Frequency</td>
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<td><strong>Bioactive substance intake</strong></td>
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<td><strong>Fat and cholesterol intake</strong></td>
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<td><strong>Protein intake</strong></td>
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<td>☐ High biological value protein</td>
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<td>☐ Thiamin</td>
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<td>☐ Enteral nutrition order (specify):</td>
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<tr>
<td>☐ Parenteral nutrition order (specify):</td>
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</tbody>
</table>

#### Diet experience

X Previously prescribed diets 2 g sodium
X Previous diet/nutrition education/counseling yes

#### Eating environment

☐ Location
☐ Atmosphere
X Caregiver/companion home w/husband
☐ Eats alone

#### Medication and herbal supplements

X Herbal/complimentary products none
☐ Misuse of medication (illegal drug use)__________

#### Beliefs and attitudes

☐ Motivation
☐ Readiness to change nutrition-related behaviors

#### Adherence

☐ Self-reported adherence score
X Nutrition visit attendance appointments kept
☐ Self-management as agreed upon

#### Mealtime behavior

X Percent of meal time spent eating NPO prior ≤50%
☐ Preference to drink rather than eat

#### Food/nutrition program participation

☐ Eligibility for government programs
☐ Participation in government programs
☐ Eligibility for community programs
☐ Participation in community programs

#### Nutrition-related ADLs and IADLs

X Physical ability to complete tasks for meal preparation weak
☐ Receives assistance with intake
X Nutrition-related activities of daily living (ADL) score est. 75-80

#### Physical activity

X Physical activity history limited mobility
☐ Type of physical activity
☐ TV/screen time
☐ Other sedentary activity time
☐ Involuntary physical movement

#### Nutrition quality of life

X Nutrition quality of life responses difficulty preparing food
☐ Other:
Anthropometric Measurements

- **X Height**: 157.78 cm
- **Usual Body Weight**: 54.5 kg
- **Date**: 0-0-00
- **X Weight change**: actual change (+/-) -1 kg
  percent change 4%
- **Body mass index**: 21.7

Biochemical Data, Medical Tests and Procedures

- **B-type Natriuretic Peptide (BNP)**: 720
- **BUN**: 72
- **Creatinine**: 4.6
- **BUN:creatinine ratio**: 11
- **Glomerular filtration rate**:
- **Sodium**:
- **Potassium**: 4.7
- **Magnesium**:
- **Date**: 0-0-00
- **X Glucose, fasting**: 105
- **HgbA1c**:
- **Cholesterol**:
- **HDL**:
- **LDL**:
- **Triglycerides**:
- **Date**: 0-0-00
- **B12, serum**:
- **Folate**:
- **Vitamin B6**:
- **Thiamine**:
- **Albumin**: 2.0
- **Prealbumin**:
- **Transferrin**:
- **Other**:

Nutrition-Focused Physical Findings

- **Overall appearance (specify)**: skin color gray, dehydrated
- **Cardiovascular-pulmonary system (edema[1+, 2+, 3+], shortness of breath)**: extreme shortness of breath at rest
- **Digestive system (mouth to rectum)**:
- **Appetite**: 1- no appetite, 2- fair, 3- varies from day to day, 4-good, 5-excellent
- **Skin (e.g., wound, ulcer and turgor)**: diminished skin turgor

Client History

- **Personal History**
  - **Age**: 52
  - **Gender**: F
  - **Race/Ethnicity**: Caucasian

- **Patient/Client /Health History**
  - **Patient/client chief nutrition complaint**: shortness of breath
  - **Last hospitalization**: 3 months ago
  - **Reason**: shortness of breath
  - **Length of stay**: 5 days
  - **Diabetes**: CAD MI Afib Renal
  - **Systolic dysfunction (Ejection Fraction)**: 15-20 % OR diastolic dysfunction
  - **Tobacco use**: Ex smoker

- **Family Medical History**
  - Heart Failure
  - Diabetes
  - CAD
  - Afib
  - Renal

- **Social History**
  - Living/housing situation (specify) with husband
  - Other

Typical Intake and/or Nutrient Analysis:

Patient has not eaten well for several days as well as drinking poorly. Complains of dry mouth, weakness. Has experienced worsening dyspnea and chest pain. Unclear of her intake but estimated to be less than 1400 calories per day. She admits to not eating 3 meals. Weak does not have the energy to prepare food.
NUTRITION DIAGNOSIS (select priority diagnosis)

Intake
- Inadequate oral food or beverage intake
- Excessive fluid intake
- Inadequate fluid intake
- Decreased nutrient (sodium) need
- Altered nutrition related lab values
- Increased energy intake
- Inadequate energy intake
- Excessive energy intake
- Evident protein energy malnutrition
- Inadequate protein intake
- Excessive protein intake
- Inadequate bioactive substance intake
- Excessive bioactive substance intake
- Inadequate vitamin intake
- Excessive vitamin intake
- Inadequate mineral intake
- Excessive mineral intake (specifically sodium)

Clinical
- Altered GI function
- Underweight
- Involuntary weight loss
- Involuntary weight gain

Behavioral-environmental
- Food and Nutrition-Related Knowledge Deficit
- Harmful beliefs/attitudes about food- or nutrition-related topics
- Not ready for diet / lifestyle change
- Self-monitoring deficit
- Limited adherence to nutrition related recommendations
- Undesirable food choices
- Other

Clinical Nutritional Assessment: Health to Nutrition Status

Involuntary weight loss as related to poor dietary intake, less than 1400 calories per day, as evidenced by 4 % weight loss.
Inadequate protein intake as related to worsening symptoms of heart failure and decreased food intake as evidenced by an albumin of 2.0.
Inadequate energy intake as related to patients’ limited ability for food preparation as evidenced by dietary recall indicating patient consuming less than 1400 calories per day
Inadequate fluid and beverage intake as related to poor PO intake as evidenced diminished skin turgor and elevated BUN.

NUTRITION INTERVENTION

Nutrition Prescription (The patient/client’s individualized recommended dietary intake of energy and/or selected food or nutrients based on current reference standards and dietary guidelines and the patient’s/client’s health condition and nutrition diagnosis):

1800 calorie 2g, sodium, 2 g potassium diet. Nutritional supplements when diet able to be resumed. If patient requires prolonged NPO consider enteral nutrition support. Should TF become necessary, would recommend Pulmocare.

Note: Interventions below are indicated by the Academy’s Heart Failure Evidence-based Nutrition Practice Guideline

Food and/or Nutrient Delivery

Meal and snacks
- General/healthful diet ________________
- Modify distribution, type or amount of food and nutrients within meals or at specified time ________________
- X Specific foods/beverages or groups ______ supplements high protein
- Other: ____________________________

Enteral nutrition
- Formula/solution ______ Pulmocare ______
- Insert enteral feeding tube
- Feeding tube flush

Parenteral nutrition/IV Fluids
- IV fluids
- Medical food supplements
- Commercial beverage
- Commercial food
- Modified beverage
- Modified food

Vitamin and mineral supplement
- Multivitamin/mineral
- Vitamin: ____________________________
  - Thiamin
  - Riboflavin
  - Niacin
  - Folate
  - B6
  - B12
  - Magnesium
  - Potassium
  - Sodium

Bioactive substance management
- Food additives

Nutrition-related medication management
- Medications (specify prescription or OTC) ________________
- Herbal/complimentary products
- Other: ____________________________

Goal/Expected Outcome: To increase dietary intake to 75% of needs for Kcal, protein and fluid.
**Multi-trace elements**

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<thead>
<tr>
<th>Nutritional Education</th>
<th>Nutritional Counseling</th>
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<td><strong>Nutrition education-content</strong></td>
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<td>☐ Cognitive-Behavioral Theory</td>
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<tr>
<td>☐ Priority modifications</td>
<td>☐ Health Belief Model</td>
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<td>☐ Survival modification</td>
<td>☐ Social Learning Theory</td>
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<td>☐ Nutrition relationship to health/disease</td>
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<td>☐ Result interpretation</td>
<td>☐ Goal setting</td>
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<tr>
<td>☐ Other:</td>
<td>☐ Self-monitoring</td>
</tr>
</tbody>
</table>

**Goal/Expected Outcome:** To increase dietary intake to 75% of needs for Kcal, protein and fluid.

---

**Coordination of Care**

- Coordination of other care during nutrition care
  - Team meeting
- Referral to RD with specific expertise
- Referral to community agencies/programs (specify): ________________
- Discharge and transfer or nutrition care to new setting or provider
- Collaboration/referral to other providers
  - Other: ________________

**Goal/Expected Outcome:** To reach a consensus on patient treatment and discharge recommendations.

---

**Education Materials Provided**

<table>
<thead>
<tr>
<th>Education Materials Provided</th>
<th>Date Given</th>
<th>Education Materials Provided</th>
<th>Date Given</th>
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<th>Date Given</th>
</tr>
</thead>
<tbody>
<tr>
<td>Definition of a fluid</td>
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<td>X Sodium content of foods</td>
<td>00-00-00</td>
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<tr>
<td>☐ Where to get your protein</td>
<td>00-00-00</td>
<td>☐ Dining out</td>
<td></td>
<td>☐ Vitamin K/warfarin</td>
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<td>☐</td>
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**NUTRITION MONITORING AND EVALUATION**

- Nutrition-related History, Anthropometric Measurements, Biochemical Data, Medical Tests and Procedure,
- Nutrition-focused Physical Findings, Comparative Standards Outcomes

<table>
<thead>
<tr>
<th>Indicator/Term</th>
<th>Criteria</th>
<th>Goal/Expected Outcome</th>
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<tbody>
<tr>
<td>Energy &lt;1400 Kcal</td>
<td>1700</td>
<td>________________</td>
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<tr>
<td>Fluid &lt;1800 ml</td>
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<td>________________</td>
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<tr>
<td>TF</td>
<td>pulmocare</td>
<td>________________</td>
</tr>
<tr>
<td>Albumin 2.0</td>
<td>&gt;2.5</td>
<td>________________</td>
</tr>
<tr>
<td>BNP 720</td>
<td>100-300</td>
<td>________________</td>
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<tr>
<td>BUN</td>
<td>823</td>
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<tr>
<td>Diminished skin turgor</td>
<td>skin moist/good turgor</td>
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**Next Visit:** if hospital, follow up within 2 weeks post hospitalization

**RD signature:** Nancy White

**Date:** 00-00-00
Medical Nutrition Therapy Heart Failure Follow-up Progress
Note-Case Study 1

Name: SR  MR#: 5555555  DOB: 3/21/1958

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<tr>
<th>NUTRITION RE-ASSESSMENT</th>
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<tr>
<td>Previous Nutrition Diagnoses:</td>
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<tr>
<td>X Inadequate fluid intake</td>
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<tr>
<td>☐ Resolved (nutrition problem no longer exists)</td>
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<tr>
<td>X Improvement shown (nutrition problem still exists)</td>
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<tr>
<td>☐ Unresolved no improvement shown</td>
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<td>☐ No longer appropriate (change in condition)</td>
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Check any newly assessed items.

Refer to the Academy’s International Dietetics & Nutrition Terminology Reference Manual for appropriate measures of the indicators below. Note: Assessment items below are indicated by the Academy’s Heart Failure Evidence-based Nutrition Practice Guideline.

### Food/Nutrition-Related History

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<tr>
<th>Energy Intake</th>
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<table>
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<tr>
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<th>Parenteral nutrition intake</th>
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<thead>
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<th>Alcohol Intake</th>
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<td>☐ Drink size/volume</td>
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<table>
<thead>
<tr>
<th>Medication and herbal supplements</th>
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</thead>
<tbody>
<tr>
<td>☐ Herbal/complimentary products:</td>
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<tr>
<td>☐ Misuse of medication (illegal drug use):</td>
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<th>Beliefs and attitudes</th>
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<th>Adherence</th>
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<thead>
<tr>
<th>Mealtime behavior</th>
</tr>
</thead>
<tbody>
<tr>
<td>☐ Percent of meal time spent eating 80%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Food/nutrition program participation</th>
</tr>
</thead>
<tbody>
<tr>
<td>☐ Preference to drink rather than eat:</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Nutrition-related ADLs and IADLs</th>
</tr>
</thead>
<tbody>
<tr>
<td>☐ Physical ability to complete tasks for meal preparation:</td>
</tr>
<tr>
<td>☐ Receives assistance with intake:</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Physical activity</th>
</tr>
</thead>
<tbody>
<tr>
<td>☐ Type of physical activity:</td>
</tr>
<tr>
<td>☐ Improved ability to prepare food</td>
</tr>
</tbody>
</table>

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**Anthropometric Measurements**

- **X Height**: 157.78 cm
- **X Weight**: 54 kg
- **Usual Body Weight**: 54.5 kg
- **Mid-arm circumference**: 
- **Date**: 0-0-00

**Biochemical Data, Medical Tests and Procedures**

- **X B-type Natriuretic Peptide (BNP)**: 25
- **X Creatinine**: 1.1
- **BUN:creatinine ratio**: 
- **Glomerular filtration rate**: 
- **Sodium**: 
- **Potassium**: 4.5
- **Magnesium**: 
- **Date**: 0-0-00

**Nutrition-Focused Physical Findings**

- **Overall appearance (specify)**: 
- **Cardiovascular-pulmonary system (edema[1+, 2+, 3+], shortness of breath)**: 
- **Digestive system (mouth to rectum)**: 
- **Appetite**: 2 (1-no appetite, 2-fair, 3-varies from day to day, 4-good, 5-excellent)
- **Skin (e.g., wound, ulcer and turgor)**: 

**Client History**

- **Personal History**
- **X Age**: 52
- **X Gender**: F
- **Race/Ethnicity**: Caucasian

- **Patient/Client /Health History**
- **X Patient/client chief nutrition complaint**: shortness of breath
- **X Last hospitalization**: 5 days ago
- **Reason**: shortness of breath
- **Diabetes**: CAD MI Afib Renal
- **X Systolic dysfunction (Ejection fraction)**: 20%
- **X Tobacco use**: 

- **Family Medical History**
- **Heart Failure**: Diabetes CAD Afib Renal

- **Social History**
- **X Living/housing situation (specify)**: husband
- **Other**: 

**NUTRITION DIAGNOSIS (select new or ongoing diagnosis)**

- **Intake**
- **X Inadequate oral food or beverage intake**
- **Excessive fluid intake**
- **Inadequate fluid intake**
- **Decreased nutrient (sodium) need**

- **Clinical**
- **Altered GI function**
- **Underweight**
- **Involuntary weight loss**
- **Involuntary weight gain**
Nutrition Diagnosis Statements (Nutrition Diagnosis, Related To (Etiology) As Evidenced By (Signs/Symptoms):
Document any new or ongoing nutrition diagnoses:

Inadequate protein intake as related to consuming less than 75% of the recommended amount for protein from food as evidenced by an albumin of 2.2.
Inadequate energy intake as related to patients' limited ability for food preparation as evidenced by dietary recall indicating patient consuming less than < 75% of calories per day.

NUTRITION INTERVENTION

Nutrition Prescription (The patient/client’s individualized recommended dietary intake of energy and/or selected food or nutrients based on current reference standards and dietary guidelines and the patient’s/client’s health condition and nutrition diagnosis):

1800 calorie 2g, sodium, 1500-2000 ml fluid. Patient could benefit from high protein/ high calorie supplements to improve the patients' ability to reach nutritional goals. TF not recommended at this time.

Note: Interventions below are indicated by the Academy’s Heart Failure Evidence-based Nutrition Practice Guideline

Food and/or Nutrient Delivery

Meal and snacks
- General/healthful diet
- Modify distribution, type or amount of food and nutrients within meals or at specified time __Suplena 1-2x per day as snack__
- Specific foods/beverages or groups ______________________
- Other: ______________________

Enteral nutrition
- Formula/solution
- Insert enteral feeding tube
- Feeding tube flush

Parenteral nutrition/IV Fluids
- IV fluids

Medical food supplements
- Commercial beverage __Suplena__
- Commercial food
- Modified beverage
- Modified food

Vitamin and mineral supplement
- Multivitamin/mineral
- Multi-trace elements

Vitamin: __Thiamin__

Thiamin

Riboflavin

Niacin

Folate

B6

B12

Mineral:

Magnesium

Potassium

Sodium

Bioactive substance management

Food additives

Nutrition-related medication management
- Medications (specify prescription or OTC) ______________________
- Herbal/complimentary products

Other: ______________________

Goal/Expected Outcome: To increase dietary intake to 90% of needs for KCal, protein and fluid.

Nutrition Education

Nutrition education-content
- Purpose of nutrition education
- Priority modifications
- Survival modification
- Nutrition relationship to health/disease

Nutrition Counseling

Theoretical basis/approach
- Cognitive-Behavioral Theory
- Health Belief Model
- Social Learning Theory
- Transtheoretical Model/Stages of Change

Note: Interventions below are indicated by the Academy’s Heart Failure Evidence-based Nutrition Practice Guideline

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Nutrition education application

Strategies
- Motivational interviewing
- Goal setting
- Self-monitoring
- Problem solving
- Social support
- Stimulus control
- Relapse prevention
- Other

Goal/Expected Outcome:
To increase dietary intake to 90% of needs for Kcal, protein and fluid.

Coordination of Care

Coordination of other care during nutrition care
- Team meeting
- Referral to RD with specific expertise
- Referral to community agencies/programs (specify)
- Discharge and transfer or nutrition care to new setting or provider
- Collaboration/referral to other providers
- Other:

Goal/Expected Outcome:
To prevent future hospitalization within the next 3 months.

Education Materials Provided

<table>
<thead>
<tr>
<th>Education Materials Provided</th>
<th>Date Given</th>
<th>Education Materials Provided</th>
<th>Date Given</th>
</tr>
</thead>
<tbody>
<tr>
<td>Definition of a fluid</td>
<td></td>
<td>Sodium content of foods</td>
<td>00-00-00</td>
</tr>
<tr>
<td>Where to get your protein</td>
<td>00-00-00</td>
<td>Dining out</td>
<td></td>
</tr>
<tr>
<td>Definition of a fluid</td>
<td></td>
<td>Potassium</td>
<td></td>
</tr>
<tr>
<td>Where to get your protein</td>
<td></td>
<td>Vitamin K/warfarin</td>
<td></td>
</tr>
</tbody>
</table>

Nutrition monitoring and evaluation

Food/Nutrition-related History, Anthropometric Measurements, Biochemical Data, Medical Tests and Procedure, Nutrition-focused Physical Findings, Comparative Standards Outcomes

<table>
<thead>
<tr>
<th>X energy 1435 Kcal</th>
<th>Criteria: 1890 Kcal</th>
</tr>
</thead>
<tbody>
<tr>
<td>X fluid 2500 ml</td>
<td>Criteria: 2500-2000 ml</td>
</tr>
<tr>
<td>X protein 49 g/day</td>
<td>Criteria: 59 g/day</td>
</tr>
</tbody>
</table>

Next Visit: ___________________________  RD Signature: ___________________________  Nancy White  Date: 00-00-00
Sample Medical Nutrition Therapy Initial Encounter
Summary Report-Case Study 1

Name: N.S. Date: 12/28/10

DOB: 3/21/1958 MRN: 7831427

Height: 157 cm Weight: 53 kg UBW: 55 % Weight change/week/months: 4 % BMI: 21.7 Body Fat %:

Changes in medication: discontinue Nexium; start Prilosec

Left Ventricle Ejection Fraction (LVEF): 15-20%

Lab Values: NA/K BUN/CR 34/2.2 TC LDL HDL TG BNP 720 ALB

Vit D: Hgb: Other: Magnesium: nm

Exercise (type/frequency): None

Smoking: YES / NO; packs per week: ; ETOH: YES / NO; drinks/day:

Dietary Assessment
Since pneumonia diagnosis several days ago, patient has felt too weak to prepare meals. Food intake consisted of frozen TV dinners and boxed snack items. Patient states most of her time is spent sitting or sleeping and not eating or drinking fluids. She states that one year ago, she was diagnosed with heart failure, and she did receive information on a two gram sodium diet plan at that time.

Nutrition Diagnosis
1. Involuntary weight loss as related to poor dietary intake, less than 1400 calories per day, as evidenced by 4 % weight loss.
2. Inadequate protein intake as related to worsening symptoms of heart failure and decreased food intake as evidenced by an albumin of 2.0.
3. Inadequate energy intake as related to patients’ limited ability for food preparation as evidenced by dietary recall indicating patient consuming less than 1400 calories per day
4. Inadequate fluid and beverage intake as related to poor PO intake as evidenced diminished skin turgor and elevated BUN.

Intervention and Plan
Estimate energy needs 1,790 Kcal/day; estimate protein needs 64 grams/day; estimate fluid needs 1873 mL/day. When diet resumed, RD will provide appropriate nutritional supplements. If prolonged NPO, consider nutrition support. Should tube feeding become necessary, recommend Pulmocare. Suggest check pre-albumin. RD to monitor during hospital stay and participate in team conference. Recommend nutrition/RD follow-up.

Educational Materials Provided: none Level of Understanding: GOOD FAIR POOR

Goals: 1,790 KCal/day; protein 64 grams/day; fluids 1873 mL/day

Signed: ______________________ Date: __________ Time: __________

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Sample Medical Nutrition Therapy Follow-up Encounter
Summary Report-Case Study 1

Name: N.S. Date: 1/7/2011
DOB: 3/21/1958 MRN: 7831427

Height: 157 cm Weight: 54 kg UBW: 55 % Weight change/week/months: 4 % BMI: 21.7 Body Fat %:

Changes in medication: none

Lab Values: NA K 4.5, BUN/CR 18/1.1 TC ___ LDL ___ HDL ___ TG ___ BNP 25 ALB 2.2

Vit D: _____ Hgb: _____ Other: 

Exercise (type/frequency): None

Smoking: YES / NO; packs per week: _____ ETOH: YES / NO; drinks/day: _____

Changes since last visit: Patient reports improved: 1) mobility, 2) ability to prepare meals, 3) shortness of breath. Spouse is supportive.

Dietary Assessment
Since patient’s discharge from hospital five days ago, dietary recall indicates improvement in energy, fluid, and protein intake.
Kcal 1417, fluid intake 1700-2000 mL, protein intake 44 grams, sodium intake 1800 mg and a potassium intake 1500 mg. Appetite has improved, but she complains of early satiety.

Goals met? YES/NO: Yes, fluid needs met. No, for Kcal, protein intake but improved intake in both

Nutrition Diagnosis
Inadequate protein intake as related to consuming less than 75% of the recommended amount for protein from food as evidenced by an albumin of 2.2.

Inadequate energy intake as related to patients’ limited ability for food preparation as evidenced by dietary recall indicating patient consuming less than < 75% of Calories per day.

Intervention and Plan
Estimate energy needs at 1800 Kcal/day; estimate protein needs 59 grams/day; estimate fluid needs 1500-2000 mL/day. Recommend Suplena one to two times daily as snack with small frequent meals to improve patient’s ability to reach nutritional goals. Two gram sodium diet plan reviewed with patient. Patient counseled on self-monitoring with food records and meal patterns.

Educational Materials Provided: Food Sources high in protein, two gram sodium diet plan, and list of foods lower in sodium.

Level of Understanding: GOOD FAIR POOR

Goals: Increase dietary intake to 90% of estimated energy and protein needs.

Signed: __________________________ Date: __________ Time: ______
Heart Failure Narrative Initial Encounter-Case Study 2

**Patient Name:** R.D.  
**Account #:** 182618  
**Attending MD:** J.S.  
**Consulting MD:** T.M.  
**Date of Consultation:** 4/26/2011

**Reason for Consultation**
This is a 53 year old Caucasian male who is evaluated for newly diagnosed heart failure.

**History of Present Illness**
Patient has been short of breath for several days. He was evaluated by his cardiologist and medication modifications were made to antihypertensive meds. Because of the worsening dyspnea and chest pain, he was admitted for observation and found to have an LVEF 10%. He admitted that he had been struggling during his daily cycling of 15-20 miles. Apparently he has been weak, but thinking it may be due to his blood glucose level. It was experiencing chest pain and palpitations which he stated did not seem abnormal.

**Past Medical History**

**Medications on Admission**
Reviewed. Medications: Digoxin, Enalapril, Carvedilol, Eplerenone, Crestor, Tricor, Lovaza (4000mg), Allopurinol. He skips the Enalapril if BP < 95 and the Carvedilol if pulse is <50

**Social History**
No history of any abuse of alcohol, drugs, or cigarettes. Admits to one drink per week.

**Family History**
There is history no diabetes in the family but is significant for heart disease. Both parents are alive at age 78. Mother history of breast cancer and Father prostate.

**Review of Systems**
Patient’s appetite is good. Complains of dry mouth, dyspnea but able to perform daily activities with more effort.

**Physical Examination**
Vital signs: somewhat low blood pressure 90/65. General appearance: mildly dyspneic. Skin: turgor is good. HEENT: Tongue is normal color. He has chronic pain shoulder and neck and right leg pain but states that he was able to walk long distances prior to this episode.

**Abdomen**
Nontender, without any masses, rigidity, rebound, or bladder distention. Extremities: mild edema.

**Laboratory Data (follow-up labs)**
BUN 34 and Creatinine 2.2. Potassium 4.7, BNP 720. Magnesium levels are normal. Previous BUN and Creatinine were normal.

**Impression**
The patient has low blood pressure due to volume depletion, decompensated heart failure.

**Recommendation**
1. Refer to cardiologist consult
2. Maintain medications
3. Dietitian consult

**Date of RD Outpatient Consultation:** 5/3/2011

**Physical Appearance**
Ht 182 cm, Wt 102 kg, BMI 30.5 Usual wt 106 kg

**Laboratory Data**
BUN 16, Creatinine 1.08, Calcium 7.2, Sodium 137, Potassium 4.2 Fasting Glucose 180, BNP 720 Albumin 4.3, Cholesterol 137 mg/dL, Triglycerides 162 mg/dL, HDL cholesterol 35 mg/dL, and LDL cholesterol 70 mg/dL with Hemoglobin A1c 6.3%.

**Medication Reconciliation**
Medications: Digoxin, Enalapril, Carvedilol, Eplerenone, Crestor, Tricor, Lovaza (4000mg), Allopurinol. He skips the Enalapril if BP < 95 and the Carvedilol if pulse is <50

He is a very highly motivated gentleman ready to follow the recommendations and to take care of his health. He has excellent support from his wife. He is an avid cycler and he has recently lost eight to nine pounds in four weeks which is slightly more rapid than recommended. His goal is that he would like to weigh 215 pounds. Dietary recall indicated his present diet is higher than recommended in refined and simple carbohydrates from fruits and fruit juices, 1800 calories daily, protein intake of 60 grams daily, sodium intake of 2400 milligrams per day, and a fluid intake of 2000 mL daily.

**Nutrition Diagnosis**
Involuntary weight loss as related to poor dietary intake, less than 1800 calories per day, as evidenced by 4% weight loss.

**Nutrition Plan**
Estimate energy needs 2400 Kcal/day; estimate protein needs 81-102 grams/day; estimate fluid needs 2000 mL/day.

Today, we reviewed the pathophysiology of heart failure as it relates to his dietary pattern and health history and family history. Education was provided in the areas of carbohydrate needs and type, and recommended meal pattern. All of my recommendations are in accordance with a 2400 calorie minimum DASH/Mediterranean diet. He will return in approximately six weeks for dietary evaluation and modification.
Heart Failure Narrative Case Study 2 Follow-up Encounter

Patient Name: R.D.  Account #: 182618

Mary Smith, RD

Date of Consultation: 6/7/11

Physical Appearance
Ht 182 cm, Wt 99 kg, BMI 30.9 Usual wt 106 kg Skin color improved and good skin turgor. Weight primarily in the abdomen.

Laboratory Data
LV ejection fraction is 44-47%. BNP 8.1, CRP 2.81 BUN/Cr 16 /1.08, eGFR >59, Albumin 4.3, Hemoglobin AIC 6.2%

Since patient’s discharge and initial outpatient consultation dietary recall indicates improvement in energy, fluid, and protein intake but still below the recommendations. He has significantly improved his dietary pattern and is losing weight at an appropriate rate. Based on his dietary recall he does need to improve the carbohydrate content of his diet as it relates to his exercise level. He was back to his usual 50 to 100 miles of cycling per day. Calories intake 2000, fluid intake 2000 to 3000 mL, protein intake 85-90 grams, sodium intake of 3000 mg and a potassium intake 2000 mg. He stated that his recent labs were within normal limits. He started a new job and this appears to have affected his exercise frequency as well as his meal pattern. He is consuming at least two meals a day at restaurants. He is not as diligent with following the meal recommendations nor exercising.

Nutrition Diagnosis
Excessive sodium intake as related to increased frequency of dining out as evidenced by dietary recall indicating an estimated intake of greater than or equal to 3000 mg/day.

Nutrition Plan
Sodium needs two grams or less per day. Estimate energy needs 2200-2970 Kcal/day; estimate protein needs 81-102 grams/day; estimate fluid needs 2000-3000 mL/day. Today we reviewed the dietary recommendations for the management of hypertension, dyslipidemia, heart failure, and weight loss. Education was provided in the areas of macronutrient distribution, the importance of exercise, dining out, ways to reduce the sodium content of his diet and stressed the importance of shifting his calories to a lighter dinner and larger lunch. In addition we had a long discussion regarding the importance of maintaining his health goals as a priority. Patient was provided with printed information on foods higher in protein and lower sodium foods. Patient counseled on self-monitoring with food records and meal patterns.

Goal
Reduce the sodium to 2000 mg/day. To increase dietary intake to 90% of needs for calories, protein and fluid, particularly on days he exercises.
### Medical Nutrition Therapy Heart Failure Initial Progress Note-Case Study 2

**Name:** R.D.  
**MR#:** 182618  
**DOB:** 5/3/2011

### NUTRITION ASSESSMENT

Refer to the Academy’s International Dietetics & Nutrition Terminology Reference Manual for appropriate measures of the indicators below. Note: Assessment items below are indicated by the Academy’s Heart Failure Evidence-based Nutrition Practice Guideline.

**Food/Nutrition-Related History**

<table>
<thead>
<tr>
<th>Food/Nutrition-Related History</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Energy Intake</strong></td>
<td></td>
</tr>
<tr>
<td>X Total Energy Intake</td>
<td>1800</td>
</tr>
<tr>
<td><strong>Fluid/beverage intake</strong></td>
<td></td>
</tr>
<tr>
<td>Oral Fluids Amounts</td>
<td></td>
</tr>
<tr>
<td>Food-derived fluids</td>
<td></td>
</tr>
<tr>
<td>Liquid meal replacement or supplement</td>
<td></td>
</tr>
<tr>
<td><strong>Food intake</strong></td>
<td></td>
</tr>
<tr>
<td>Amount of food</td>
<td></td>
</tr>
<tr>
<td>X Types of food/meals</td>
<td>simple carbs, fruit and fruit juices</td>
</tr>
<tr>
<td>Meal/snack pattern</td>
<td></td>
</tr>
<tr>
<td>Diet quality index</td>
<td></td>
</tr>
<tr>
<td>Food variety</td>
<td></td>
</tr>
<tr>
<td><strong>Enteral nutrition intake</strong></td>
<td></td>
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<tr>
<td>Formula/solution</td>
<td></td>
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<tr>
<td><strong>Parenteral nutrition intake</strong></td>
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<tr>
<td>Formula/solution</td>
<td></td>
</tr>
<tr>
<td><strong>Alcohol Intake</strong></td>
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</tr>
<tr>
<td>X Drink size/volume</td>
<td>one</td>
</tr>
<tr>
<td>X Frequency</td>
<td>weekly</td>
</tr>
<tr>
<td><strong>Bioactive substance intake</strong></td>
<td></td>
</tr>
<tr>
<td>Soy protein</td>
<td></td>
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<tr>
<td>Fat and cholesterol intake</td>
<td></td>
</tr>
<tr>
<td>Total fat</td>
<td></td>
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<tr>
<td><strong>Protein intake</strong></td>
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<tr>
<td>Total protein</td>
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<tr>
<td>High biological value protein</td>
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<tr>
<td>Amino acids</td>
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<tr>
<td>Essential amino acids</td>
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<tr>
<td><strong>Carbohydrate intake</strong></td>
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<tr>
<td>Total carbohydrate</td>
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<td><strong>Fiber intake</strong></td>
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<tr>
<td>Total fiber</td>
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<tr>
<td><strong>Vitamin intake</strong></td>
<td></td>
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<tr>
<td>Folate</td>
<td></td>
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<tr>
<td>B6</td>
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<tr>
<td>B12</td>
<td></td>
</tr>
<tr>
<td>Thiamin</td>
<td></td>
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<tr>
<td>Multivitamin</td>
<td></td>
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<tr>
<td><strong>Mineral/element intake</strong></td>
<td></td>
</tr>
<tr>
<td>Sodium</td>
<td></td>
</tr>
<tr>
<td>Potassium</td>
<td></td>
</tr>
<tr>
<td>Magnesium</td>
<td></td>
</tr>
<tr>
<td><strong>Diet experience</strong></td>
<td></td>
</tr>
<tr>
<td>□ Previously prescribed diets</td>
<td></td>
</tr>
<tr>
<td>□ Previous diet/nutrition education/counseling</td>
<td></td>
</tr>
<tr>
<td><strong>Eating environment</strong></td>
<td></td>
</tr>
<tr>
<td>Location</td>
<td></td>
</tr>
<tr>
<td>Atmosphere</td>
<td></td>
</tr>
<tr>
<td>Caregiver/companion</td>
<td></td>
</tr>
<tr>
<td>Eats alone</td>
<td></td>
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<tr>
<td><strong>Medication and herbal supplements</strong></td>
<td></td>
</tr>
<tr>
<td>Herbal/complimentary products</td>
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</tr>
<tr>
<td>□ Misuse of medication (illegal drug use)</td>
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</tr>
<tr>
<td><strong>Beliefs and attitudes</strong></td>
<td></td>
</tr>
<tr>
<td>□ Motivation</td>
<td></td>
</tr>
<tr>
<td>x Readiness to change nutrition-related behaviors</td>
<td></td>
</tr>
<tr>
<td><strong>Adherence</strong></td>
<td></td>
</tr>
<tr>
<td>□ Self-reported adherence score</td>
<td></td>
</tr>
<tr>
<td>□ Nutrition visit attendance</td>
<td></td>
</tr>
<tr>
<td>□ Self-management as agreed upon</td>
<td></td>
</tr>
<tr>
<td><strong>Mealtime behavior</strong></td>
<td></td>
</tr>
<tr>
<td>□ Percent of meal time spent eating</td>
<td></td>
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<tr>
<td>□ Preference to drink rather than eat</td>
<td></td>
</tr>
<tr>
<td><strong>Food/nutrition program participation</strong></td>
<td></td>
</tr>
<tr>
<td>□ Eligibility for government programs</td>
<td></td>
</tr>
<tr>
<td>□ Participation in government programs</td>
<td></td>
</tr>
<tr>
<td>□ Eligibility for community programs</td>
<td></td>
</tr>
<tr>
<td>□ Participation in community programs</td>
<td></td>
</tr>
<tr>
<td><strong>Nutrition-related ADLs and IADLs</strong></td>
<td></td>
</tr>
<tr>
<td>□ Physical ability to complete tasks for meal preparation</td>
<td></td>
</tr>
<tr>
<td>□ Receives assistance with intake</td>
<td></td>
</tr>
<tr>
<td>□ Nutrition-related activities of daily living (ADL) score</td>
<td></td>
</tr>
<tr>
<td><strong>Physical activity</strong></td>
<td></td>
</tr>
<tr>
<td>□ Physical activity history</td>
<td></td>
</tr>
<tr>
<td>□ Type of physical activity</td>
<td></td>
</tr>
<tr>
<td>□ TV/screen time</td>
<td></td>
</tr>
<tr>
<td>□ Other sedentary activity time</td>
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</tr>
<tr>
<td>□ Involuntary physical movement</td>
<td></td>
</tr>
<tr>
<td><strong>Nutrition quality of life</strong></td>
<td></td>
</tr>
<tr>
<td>□ Nutrition quality of life responses</td>
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</tr>
<tr>
<td>Other</td>
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</tr>
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### Anthropometric Measurements

<table>
<thead>
<tr>
<th>Measurement</th>
<th>Value</th>
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</thead>
<tbody>
<tr>
<td>X Height</td>
<td>182 cm</td>
</tr>
<tr>
<td>X Weight</td>
<td>102 kg</td>
</tr>
<tr>
<td>Usual Body Weight</td>
<td>106 kg</td>
</tr>
<tr>
<td>□ Mid-arm circumference</td>
<td></td>
</tr>
</tbody>
</table>

**Weight change: actual change (+/-)** -4 kg  **percent change** 4%

**Biochemical Data, Medical Tests and Procedures**

<table>
<thead>
<tr>
<th>Test</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>X B-type Natriuretic Peptide (BNP)</td>
<td>720</td>
</tr>
<tr>
<td>X BUN</td>
<td>16</td>
</tr>
<tr>
<td>X Glucose, fasting</td>
<td>380</td>
</tr>
<tr>
<td>□ Home blood glucose results</td>
<td></td>
</tr>
<tr>
<td>□ B12, serum</td>
<td></td>
</tr>
<tr>
<td>□ Folate</td>
<td></td>
</tr>
</tbody>
</table>

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**Nutrition-focused Physical Findings**

- Creatinine: 1.08
- BUN:creatinine ratio
- Glomerular filtration rate
- Sodium: 137
- Potassium: 4.2
- Magnesium: WNL
- HgbA1c: 6.3%
- Cholesterol: 137
- Cholesterol, HDL: 35
- Cholesterol, LDL: 70
- Triglycerides: 162
- Vitamin B6
- Thiamine
- Albumin
- Prealbumin
- Transferrin
- Other:

**Comparative Standards**

- Estimated energy needs
  - Total energy estimated needs: 2400
  - Method for estimating needs: 25 Cal/kg

- Estimated fat needs
  - Total fat estimated needs
  - Type of fat needed
  - Method for estimating needs

- Estimated protein needs
  - Total protein estimated needs
  - Type of protein needed
  - Method for estimating needs

- Estimated carbohydrate needs
  - Total carbohydrate estimated needs
  - Type of carbohydrate needed
  - Method for estimating needs

- Estimated fiber needs
  - Total fiber estimated needs
  - Type of fiber needed
  - Method for estimating needs

- Estimated fluid needs
  - Total fluid estimated needs: 2000 mL/d
  - Method for estimating needs: HF protocol

**Client History**

- Personal History
  - Age: 53
  - Gender: male
  - Race/Ethnicity: Caucasian

- Patient/Client Health History
  - Last hospitalization: 4/26/2011
  - Reason: chest pain, dyspnea
  - Length of stay: 2 days
  - Diabetes
  - CAD
  - MI
  - Afib
  - Renal
  - Systolic dysfunction (Ejection Fraction): 40% OR diastolic dysfunction
  - Tobacco use: none

- Family Medical History
  - Heart Failure
  - Diabetes
  - CAD
  - Afib
  - Renal

- Social History
  - Living/housing situation: with wife

**Nutritional Intake and/or Nutrient Analysis**

**Typical Intake and/or Nutrient Analysis:**

- Total energy estimated needs: 2400
- Method for estimating needs: 25 Cal/kg

- Total fat estimated needs
- Type of fat needed
- Method for estimating needs

- Total protein estimated needs
- Type of protein needed
- Method for estimating needs

- Total carbohydrate estimated needs
- Type of carbohydrate needed
- Method for estimating needs

- Total fiber estimated needs
- Type of fiber needed
- Method for estimating needs

- Total fluid estimated needs: 2000 mL/d
- Method for estimating needs: HF protocol

**Nutrition Diagnosis** (select priority diagnosis)

<table>
<thead>
<tr>
<th>Intake</th>
<th>Clinical</th>
<th>Behavioral-environmental</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inadequate oral food or beverage intake</td>
<td>Inadequate GI function</td>
<td>Food and Nutrition-Related Knowledge Deficit</td>
</tr>
<tr>
<td>Excessive fluid intake</td>
<td>Excessive protein intake</td>
<td>Harmful beliefs/attitudes about food- or nutrition-related topics</td>
</tr>
<tr>
<td>Inadequate fluid intake</td>
<td>Excessive bioactive substance intake</td>
<td>Not ready for diet / lifestyle change</td>
</tr>
<tr>
<td>Decreased nutrient (sodium) need</td>
<td>Excessive bioactive substance intake</td>
<td>Self-monitoring deficit</td>
</tr>
<tr>
<td>Altered nutrition related lab values</td>
<td>Inadequate vitamin intake</td>
<td>Limited adherence to nutrition related recommendations</td>
</tr>
<tr>
<td>Increased energy intake</td>
<td>Excessive vitamin intake</td>
<td>Undesirable food choices</td>
</tr>
<tr>
<td>Inadequate energy intake</td>
<td>Inadequate mineral intake</td>
<td>Other</td>
</tr>
<tr>
<td>Evident protein energy malnutrition</td>
<td>Excessive mineral intake</td>
<td>Other</td>
</tr>
</tbody>
</table>

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Nutrition Diagnosis Statements [Nutrition Diagnosis, Related To (Etiology) As Evidenced By (Signs/Symptoms)]:

Involuntary weight loss as related to poor dietary intake, less than 1800 calories per day as evidenced by 4% weight loss.

**NUTRITION INTERVENTION**

**Nutrition Prescription (The patient/client’s individualized recommended dietary intake of energy and/or selected food or nutrients based on current reference standards and dietary guidelines and the patient’s/client’s health condition and nutrition diagnosis):**

- Estimate energy needs at 2400 Kcal/day
- Estimate protein needs at 81-102 grams/day
- Sodium 2000 mg/day

*Note: Interventions below are indicated by ADA Heart Failure Evidence-based Nutrition Practice Guideline*

<table>
<thead>
<tr>
<th>Food and/or Nutrient Delivery</th>
<th>Nutrition Counseling</th>
</tr>
</thead>
</table>
| **Meal and snacks**<br>- X General/healthful diet **DASH**<br>- Modify distribution, type or amount of food and nutrients within meals or at specified time<br>- Specific foods/beverages or groups<br>- Other<br>- Enteral nutrition<br>- Formula/solution<br>- Insert enteral feeding tube<br>- Feeding tube flush<br>- Parenteral nutrition/IV Fluids<br>- IV fluids<br>- Medical food supplements<br>- Commercial beverage<br>- Commercial food<br>- Modified beverage<br>- Modified food<br>- Vitamin and mineral supplement<br>- Multivitamin/mineral<br>- Multi-trace elements<br>- **Vitamin:**<br>- Thiamin<br>- Riboflavin<br>- Niacin<br>- Folate<br>- B6<br>- B12<br>- **Mineral:**<br>- Magnesium<br>- Potassium<br>- Sodium<br>- Bioactive substance management<br>- Food additives<br>- Nutrition-related medication management<br>- Medications (specify prescription or OTC)<br>- Herbal/complimentary products<br>- Other<br>- **Goal/Expected Outcome:**

**Nutrition Education**

- **Nutrition education-content**<br>- X Calories, protein, menu patterns<br>- Priority modifications<br>- Survival modification<br>- Nutrition relationship to health/disease<br>- Recommended modifications<br>- Nutrition education application<br>- Result interpretation<br>- Other:<br>- **Goal/Expected Outcome:**

**Improved KCalorie and protein intake, decrease in simple Carbohydrate intake, improved menu patterns**

**Theoretical basis/approach**

- X Cognitive-Behavioral Theory<br>- Health Belief Model<br>- Social Learning Theory<br>- Transtheoretical Model/Stages of Change<br>- Strategies<br>- Motivational interviewing<br>- Goal setting<br>- X Self-monitoring<br>- Problem solving<br>- Social support<br>- Stimulus control<br>- Relapse prevention<br>- Other<br>- **Goal/Expected Outcome:**

**Coordination of Care**

- **Coordination of other care during nutrition care**<br>- Team meeting<br>- Referral to RD with specific expertise<br>- Referral to community agencies/programs (specify):<br>- Discharge and transfer or nutrition care to new setting or provider<br>- Collaboration/referral to other providers<br>- Other:<br>- **Goal/Expected Outcome:**
Definition of a fluid
Sodium content of foods
Potassium

Where to get your protein
Dining out
Vitamin K/warfarin

Menu Patterns, Kcalories

NUTRITION MONITORING AND EVALUATION [list indicator/term and specify criteria (goal or reference)]

Food/Nutrition-related History, Anthropometric Measurements, Biochemical Data, Medical Tests and Procedure, Nutrition-focused Physical Findings, Comparative Standards Outcomes

X Energy 1800 Kcalories
Criteria: 2400 Kcalories

X Protein 60 grams/day
Criteria: 81-102 grams/day

X Sodium 2400 mg/day
Criteria: 2000 mg/day

Next Visit: 6 weeks
RD Signature: Nancy White
Date: 5/3/2011
# Medical Nutrition Therapy Heart Failure Follow-up Progress Note-Case Study 2

**Name:**

RD: 

MR#: 

DOB: 

## NUTRITION RE-ASSESSMENT

### Previous Nutrition Diagnoses

<table>
<thead>
<tr>
<th>Diagnosis</th>
<th>Resolved (nutrition problem no longer exists)</th>
<th>Improvement shown (nutrition problem still exists)</th>
<th>Unresolved no improvement shown</th>
<th>No longer appropriate (change in condition)</th>
</tr>
</thead>
<tbody>
<tr>
<td>X Involuntary weight loss</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>X Inadequate energy intake</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Check any newly assessed items.

Refer to the Academy’s International Dietetics & Nutrition Terminology Reference Manual for appropriate measures of the indicators below.

Note: Assessment items below are indicated by the Academy’s Heart Failure Evidence-based Nutrition Practice Guideline.

## Food/Nutrition-Related History

### Energy Intake

<table>
<thead>
<tr>
<th>Item</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Energy Intake</td>
<td>2000 KCal</td>
</tr>
</tbody>
</table>

### Fluid/beverage intake

<table>
<thead>
<tr>
<th>Item</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Oral Fluids Amount</td>
<td>2000-3000</td>
</tr>
</tbody>
</table>

### Food intake

<table>
<thead>
<tr>
<th>Item</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Amount of food</td>
<td>&lt;75%</td>
</tr>
</tbody>
</table>

### Alcohol Intake

<table>
<thead>
<tr>
<th>Item</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Drink size/volume</td>
<td>1 drink per week</td>
</tr>
</tbody>
</table>

### Bioactive substance intake

<table>
<thead>
<tr>
<th>Item</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Soy protein</td>
<td></td>
</tr>
</tbody>
</table>

### Fat and cholesterol intake

<table>
<thead>
<tr>
<th>Item</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total fat</td>
<td></td>
</tr>
</tbody>
</table>

### Protein intake

<table>
<thead>
<tr>
<th>Item</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total protein</td>
<td>85-90 grams</td>
</tr>
<tr>
<td>High biological value protein</td>
<td></td>
</tr>
<tr>
<td>Amino acids</td>
<td></td>
</tr>
<tr>
<td>Essential amino acids</td>
<td></td>
</tr>
</tbody>
</table>

### Carbohydrate intake

<table>
<thead>
<tr>
<th>Item</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total carbohydrate</td>
<td></td>
</tr>
</tbody>
</table>

### Fiber intake

<table>
<thead>
<tr>
<th>Item</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total fiber</td>
<td>25-30 grams</td>
</tr>
</tbody>
</table>

### Vitamin intake

<table>
<thead>
<tr>
<th>Item</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Folate</td>
<td></td>
</tr>
<tr>
<td>B6</td>
<td></td>
</tr>
<tr>
<td>B12</td>
<td></td>
</tr>
<tr>
<td>Thiamin</td>
<td></td>
</tr>
</tbody>
</table>

### Mineral/element intake

<table>
<thead>
<tr>
<th>Item</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sodium</td>
<td></td>
</tr>
</tbody>
</table>

### Diet order

<table>
<thead>
<tr>
<th>Item</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>General, healthful diet</td>
<td></td>
</tr>
<tr>
<td>Modified diet (specify)</td>
<td>2g sodium diet</td>
</tr>
<tr>
<td>Enteral nutrition order (specify)</td>
<td></td>
</tr>
<tr>
<td>Parenteral nutrition order (specify)</td>
<td></td>
</tr>
</tbody>
</table>

### Diet experience

<table>
<thead>
<tr>
<th>Item</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Previously prescribed diets</td>
<td>2g Sodium, 2g K diet</td>
</tr>
<tr>
<td>Previous diet/nutrition education/counseling</td>
<td></td>
</tr>
</tbody>
</table>

### Eating environment

<table>
<thead>
<tr>
<th>Item</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Location</td>
<td>dining out 2x day</td>
</tr>
<tr>
<td>Atmosphere</td>
<td></td>
</tr>
<tr>
<td>Caregiver/companion</td>
<td>wife</td>
</tr>
<tr>
<td>Eats alone</td>
<td></td>
</tr>
</tbody>
</table>

### Medication and herbal supplements

<table>
<thead>
<tr>
<th>Item</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Herbal/complimentary products</td>
<td></td>
</tr>
<tr>
<td>Misuse of medication (illegal drug use)</td>
<td></td>
</tr>
</tbody>
</table>

### Beliefs and attitudes

<table>
<thead>
<tr>
<th>Item</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Belief</td>
<td>Good but work schedule limits ability</td>
</tr>
<tr>
<td>Readiness to change nutrition-related behaviors</td>
<td></td>
</tr>
</tbody>
</table>

### Adherence

<table>
<thead>
<tr>
<th>Item</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Self-reported adherence score</td>
<td>3</td>
</tr>
<tr>
<td>Self-management as agreed upon</td>
<td></td>
</tr>
</tbody>
</table>

### Mealtime behavior

<table>
<thead>
<tr>
<th>Item</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Percent of meal time spent eating</td>
<td>90</td>
</tr>
<tr>
<td>Preference to drink rather than eat</td>
<td></td>
</tr>
</tbody>
</table>

### Food/nutrition program participation

<table>
<thead>
<tr>
<th>Item</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Eligibility for government programs</td>
<td></td>
</tr>
<tr>
<td>Participation in government programs</td>
<td></td>
</tr>
<tr>
<td>Eligibility for community programs</td>
<td></td>
</tr>
<tr>
<td>Participation in community programs</td>
<td></td>
</tr>
</tbody>
</table>

### Nutrition-related ADLs and IADLs

<table>
<thead>
<tr>
<th>Item</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical ability to complete tasks for meal preparation</td>
<td></td>
</tr>
<tr>
<td>Receives assistance with intake</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Item</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nutrition-related activities of daily living (ADL) score</td>
<td>50</td>
</tr>
</tbody>
</table>
**Anthropometric Measurements**

<table>
<thead>
<tr>
<th>Measurement</th>
<th>Date</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Height</td>
<td>0-0-00</td>
<td>182 cm</td>
</tr>
<tr>
<td>Weight</td>
<td>0-0-00</td>
<td>99 kg</td>
</tr>
<tr>
<td>Usual Body Weight</td>
<td></td>
<td>106 kg</td>
</tr>
<tr>
<td>Waist circumference</td>
<td>0-0-00</td>
<td></td>
</tr>
<tr>
<td>Weight change: actual change (+/-)</td>
<td></td>
<td>percent change</td>
</tr>
<tr>
<td>Body mass index</td>
<td></td>
<td>30.9</td>
</tr>
</tbody>
</table>

**Biochemical Data, Medical Tests and Procedures**

<table>
<thead>
<tr>
<th>Test</th>
<th>Date</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>B-type Natriuretic Peptide (BNP)</td>
<td>0-0-00</td>
<td>8.1</td>
</tr>
<tr>
<td>LVEF</td>
<td></td>
<td>94-97%</td>
</tr>
<tr>
<td>Creatinine</td>
<td></td>
<td>1.08</td>
</tr>
<tr>
<td>BUN:creatinine ratio</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Glomerular filtration rate</td>
<td></td>
<td>&gt;59</td>
</tr>
<tr>
<td>Sodium</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Potassium</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Magnesium</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Glucose, fasting</td>
<td>0-0-00</td>
<td></td>
</tr>
<tr>
<td>Home blood glucose results</td>
<td></td>
<td></td>
</tr>
<tr>
<td>HgbA1c</td>
<td>0-0-00</td>
<td>6.2%</td>
</tr>
<tr>
<td>Cholesterol</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cholesterol, HDL</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cholesterol, LDL</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Triglycerides</td>
<td></td>
<td></td>
</tr>
<tr>
<td>B12, serum</td>
<td>0-0-00</td>
<td></td>
</tr>
<tr>
<td>Folate</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Vitamin B6</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Thiamine</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Albumin</td>
<td></td>
<td>4.3</td>
</tr>
<tr>
<td>Prealbumin</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Transferrin</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CRP</td>
<td></td>
<td>2.81</td>
</tr>
</tbody>
</table>

**Nutrition-Focused Physical Findings**

- Overall appearance: skin color improved, good
- Cardiovascular-pulmonary system: Patient state no shortness of breath, able to cycle
- Digestive system: Patient state no abdominal pain, diarrhea
- Appetite: 1 (no appetite, 2. fair, 3. varies from day to day, 4. good, 5. excellent)
- Skin: good skin turgor

**Client History**

<table>
<thead>
<tr>
<th>Personal History</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
</tr>
<tr>
<td>Gender</td>
</tr>
<tr>
<td>Race/Ethnicity</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Patient/Client/Health History</th>
</tr>
</thead>
<tbody>
<tr>
<td>Patient/client chief nutrition complaint</td>
</tr>
<tr>
<td>Last hospitalization</td>
</tr>
<tr>
<td>Reason for hospitalization</td>
</tr>
<tr>
<td>Diabetes</td>
</tr>
<tr>
<td>Systolic dysfunction (Ejection fraction)</td>
</tr>
<tr>
<td>Diastolic dysfunction</td>
</tr>
<tr>
<td>Tobacco use</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Family Medical History</th>
</tr>
</thead>
<tbody>
<tr>
<td>Heart Failure</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Social History</th>
</tr>
</thead>
<tbody>
<tr>
<td>Living/housing situation</td>
</tr>
<tr>
<td>Other</td>
</tr>
</tbody>
</table>

**Comparative Standards**

- Estimated energy needs
  - Total energy estimated needs | 2400-2970 |
  - Method for estimating needs | 30-32 KCal/kg |
- Estimated fat needs
  - Total fat estimated needs | |
  - Type of fat needed | |
  - Method for estimating needs | |
- Estimated protein needs
  - Total protein estimated needs | 81-102 |
  - Type of protein needed | |
  - Method for estimating needs | |
- Estimated carbohydrate needs
  - Total carbohydrate estimated needs | |
  - Type of carbohydrate needed | |
  - Method for estimating needs | |
- Estimated fiber needs
  - Total fiber estimated needs | |
  - Type of fiber needed | |
  - Method for estimating needs | |
- Estimated fluid needs
  - Total fluid estimated needs | 2000-3000 ml/day |
  - Method for estimating needs | protocol for HF |
  - Other | |
  - Sodium and potassium | |

**NUTRITION DIAGNOSIS**

- Intake
  - Inadequate oral food or beverage intake |
  - Excessive fluid intake |
  - Inadequate fluid intake |
  - Decreased nutrient (sodium) need |

- Clinical
  - Altered GI function |
  - Underweight |
  - Involuntary weight loss |
  - Involuntary weight gain |
<table>
<thead>
<tr>
<th><strong>Nutrition Diagnosis Statements</strong> (Nutrition Diagnosis, Related To (Etiology) As Evidenced By (Signs/Symptoms):)</th>
</tr>
</thead>
</table>

Excessive sodium intake as related to increased frequency of dining out as evidenced by dietary recall indicating an estimated intake of greater than or equal to 3000 mg/day.

**NUTRITION INTERVENTION**

**Nutrition Prescription** (The patient/client’s individualized recommended dietary intake of energy and/or selected food or nutrients based on current reference standards and dietary guidelines and the patient’s/client’s health condition and nutrition diagnosis):

2200 to 2400 calorie minimum DASH/Mediterranean diet and on cycling days to be as high as 3000 calories a day, 2g sodium, 2000 to 3000 ml fluid. Education was provided in the areas of macronutrient distribution, the importance of exercise, dining out, ways to reduce the sodium content of his diet and stressed the importance of shifting his calories to a lighter dinner and larger lunch. In addition we had a long discussion regarding the importance of maintaining his health goals as a priority. Patient was provided with printed information on foods higher in protein and lower sodium foods. Patient counseled on self-monitoring with food records and meal patterns.

Note: Interventions below are indicated by the Academy’s Heart Failure Evidence-based Nutrition Practice Guideline

**Food and/or Nutrient Delivery**

- **Meal and snacks**
  - General/healthful diet _________
  - X Modify distribution, type or amount of food and nutrients within meals or at specified time _________
  - Specific foods/beverages or groups _________
  - X Other: _decrease sodium_ _________

- **Enteral nutrition**
  - Formula/solution
  - Insert enteral feeding tube
  - Feeding tube flush

- **Parenteral nutrition/IV fluids**

- **Medical food supplements**
  - Commercial beverage
  - Commercial food
  - Modified beverage
  - Modified food

- **Vitamin and mineral supplement**
  - Multivitamin/mineral
  - Multi-trace elements

- **Bioactive substance management**
  - Food additives

**Nutrition-related medication management**

- Medications (specify prescription or OTC _________)
- Herbal/complimentary products
- Other: _________

**Goal/Expected Outcome:** To increase dietary intake to 90% of needs for Kcal, protein and fluid. Particularly on days he exercises. To decrease sodium content to 2000 mg/day by decreasing the frequency of dining out.

**Nutrition Education**

- Purpose of nutrition education
- Priority modifications
- Survival modification
- X Nutrition relationship to health/disease
- Recommended modifications

**Nutrition education application**

- Result interpretation

**Nutrition Counseling**

- Theoretical basis/approach
  - Cognitive-Behavioral Theory
  - Health Belief Model
  - Social Learning Theory

- Transtheoretical Model/Stages of Change

- Strategies
  - Motivational interviewing
  - Goal setting
  - X Self-monitoring

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Goal/Expected Outcome: To increase dietary intake to 90% of needs for Kcal, protein and fluid.

Goal/Expected Outcome: To prevent future hospitalization within the next 3 months.

Coordination of Care

Coordination of other care during nutrition care
- Team meeting
- Referral to RD with specific expertise
- Referral to community agencies/programs (specify)
- Discharge and transfer or nutrition care to new setting or provider
- Collaboration/referral to other providers
- Other:

Goal/Expected Outcome:

Education Materials Provided

<table>
<thead>
<tr>
<th>Education Materials Provided</th>
<th>Date Given</th>
<th>Education Materials Provided</th>
<th>Date Given</th>
<th>Education Materials Provided</th>
<th>Date Given</th>
</tr>
</thead>
<tbody>
<tr>
<td>Definition of a fluid</td>
<td></td>
<td>Sodium content of foods</td>
<td>00-00-00</td>
<td>Potassium</td>
<td></td>
</tr>
<tr>
<td>Where to get your protein</td>
<td></td>
<td>Dining out</td>
<td></td>
<td>Vitamin K/ warfarin</td>
<td></td>
</tr>
<tr>
<td></td>
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</tr>
</tbody>
</table>

NUTRITION MONITORING AND EVALUATION

Food/Nutrition-related History, Anthropometric Measurements, Biochemical Data, Medical Tests and Procedure, Nutrition-focused Physical Findings, Comparative Standards Outcomes

<table>
<thead>
<tr>
<th>X energy 2400 kcal</th>
<th>X 2000 mg/sodium</th>
</tr>
</thead>
<tbody>
<tr>
<td>Criteria: 3000 kcal</td>
<td>Criteria: 1500-2000 mg/d</td>
</tr>
<tr>
<td>X fluid 2000-3000 ml</td>
<td>X 81-102 g/day</td>
</tr>
<tr>
<td>Criteria: 2000-3000 ml</td>
<td>Criteria:</td>
</tr>
<tr>
<td>X protein 44 g/day</td>
<td>Criteria:</td>
</tr>
</tbody>
</table>

Next Visit: 3 months          RD Signature: Nancy White         Date: 00-00-00
Medical Nutrition Therapy Initial Encounter
Summary Report- Case Study 2

Name: R.D. ___________________________ Date: 5/3/2011 ________

DOB: 3/21/1958 _________ MRN: 182618

Height 182 cm  Weight 102 kg  UBW 106 kg  % Weight change/week/months 4%  BMI 30.5

Changes in medication: none

Left Ventricle Ejection Fraction (LVEF) 10%


Vit D: Hgb: Other: HgbA1c 6.3%, Fasting Glucose 180

Exercise (type/frequency: cycling daily 50-100 miles, now struggles with 15-20 miles

Smoking: YES / NO; packs per week: no ETOH: YES / NO; drinks/day: 1/week

Dietary Assessment
Indicated his present diet is higher than recommended in refined and simple carbohydrates from fruits and fruit juices. Diet recall indicated: 1800 Kcalories daily, protein intake 60 grams daily, sodium intake 2400 milligrams daily, and fluid intake of 2000 mL daily.

Nutrition Diagnosis
Involuntary weight loss as related to poor dietary intake, less than 1800 calories per day as evidenced by 4% weight loss.

Intervention and Plan
Sodium needs 2 grams or less/day, estimate energy needs 2200-2970 Kcalories/day, estimate protein needs 81-102 grams/day, estimate fluid needs 2000 mL/day

Educational Materials provided: fluid, sodium, sources of protein, menu patterns

Level of Understanding: x GOOD  FAIR  POOR

Goals: Improve menu patterns, increase dietary intake to 90% of need for Kcalories, protein, and fluid. Reduce sodium intake to 2000 mg/day or less.

Signed: Nancy White, RD ___________________________ Date: 5/3/2011 ________ Time: 1005
Medical Nutrition Therapy Follow-up Encounter
Summary Report-Case Study 2

Name: ___________ Date: ___________

DOB: _______ MRN: _______

DOB: 3/21/1958 MRN: 182618

Height: __ cm Weight: __ kg UBW: ___ % Weight change/week/months: ___ % BMI: ___

Changes in medication: __none_________

Left Ventricle Ejection Fraction (LVEF): ___44-47%_________

Lab Values: NA/K ___ BUN/CR ___ TC ___ LDL ___ HDL ___ TG ___ BNP ___

ALB ___ Vit D: ___ Hgb: ___ Other: ___ A1C 6.2%, eGFR >59___

Exercise (type/frequency): ___cycling daily 50-100 miles___

Smoking: YES / NO; packs per week: ___ NO ___ ETOH: YES / NO; drinks/day: ___1/week___

Changes since last visit: ___improved Kcalorie, protein, and fluid intake, improved dietary pattern, increase in sodium intake___

Dietary Assessment
Improved energy, fluid, and protein intake but still below recommendations. Significantly improved his dietary pattern and is losing weight at an appropriate rate. Estimated intake: Kcalories 2000, fluid 2000-3000 mL, protein 85-90 grams, sodium 3000 mg and potassium 2000 mg.

Goals met? YES/NO: ___improved__________________________

Nutrition Diagnosis
Excessive sodium intake as related to increased frequency of dining out as evidenced by dietary recall indicating an estimated intake of greater than or equal to 3000 mg/day.

Intervention and Plan
Sodium needs 2 grams or less/day, estimate energy needs 2200-2970 Kcalories/day, estimate protein needs 81-102 grams/day, estimate fluid needs 2000-3000 mL/day.

Educational Materials Provided: Fluid, sodium, dining out, sources of protein Level of Understanding: ___x GOOD FAIR POOR___

Goals: Increase dietary intake to 90% of need for Kcalories, protein, and fluid, and reduce sodium intake 2000 mg or less daily.

Signed: ___Nancy White_______ Date: _______ Time: ___0930___
Outcomes Management

**Outcomes Management** involves use of a system that evaluates the effectiveness and efficiency of the Academy of Nutrition and Dietetics’ Nutrition Care Process (assessment, diagnosis, interventions, cost and others)\(^1\).

These tools may be used as a guide to collect outcomes on individuals to assist with care planning or to set up an outcomes management system where aggregate data is collected and analyzed. The fourth step of the Nutrition Care Process (NCP), Nutrition Monitoring and Evaluation, involves three components, which require critical thinking and involves the amount of progress being made and whether goals are being met\(^2\):

1. **Monitoring** progress to determine if intervention is being implemented, whether nutrition goals have been met and establish if there are additional needed interventions
2. **Measuring** by identifying indicators from the nutrition diagnosis (etiology or signs and symptoms) and measure over the course of care to determine changes in values
3. **Evaluating** outcomes against standards (nutrition prescription/goals or a reference) to determine next steps in the plan of care\(^2\).

By contrast, an outcomes management system may include a variety of aggregate data from different health professionals and/or different facilities. This data may be used to improve performance of food and nutrition professionals within a facility and provide insight to the profession, in general, on the effectiveness of nutrition care interventions.

**Why Utilize an Outcomes Management System?**

Documentation and demonstration of patient/client and group outcomes is essential in all settings. Clinicians use the outcomes of medical nutrition therapy (MNT) to guide the treatment process by comparing outcomes achieved with those anticipated. Pooled and aggregated data summarize the results of protocol use in a specific population and increase the body of evidence or knowledge concerning the effectiveness of MNT and the role of dietetic professionals in achieving positive outcomes. This data is useful and may be required by health care providers, third party payors, administrators and regulatory organizations. Outcomes data may be used to track performance, manage resources and ultimately improve the quality of care\(^1\).

Aggregate outcome data demonstrates professional value and accountability, outcomes management and system and processes improvement. Accrediting agencies, such as the Joint Commission and the National Committee for Quality Assurance (NCQA), are now including performance measurement and outcomes monitoring as a requirement for accreditation. For example, in order to meet Joint Commission standards, leaders must evaluate the outcomes related to the use of clinical practice guidelines and make any necessary changes to improve pertinent processes. The intent of these standards is so the organization monitors the guidelines it implements in order to judge their effectiveness.

**What Types of Outcomes Should be Measured and Monitored?**

As noted in the NCP standardized terminology, there are four categories of “Nutrition Care Outcomes” which *directly* relate to outcomes influenced by the dietetics practitioner. They are list below with examples of potential outcomes

- **Food and Nutrition Related History Outcomes**: food/nutrient intake, medication/herbal supplement intake, knowledge, beliefs, food supplies and availability, physical activity, nutrition quality of life.
- **Anthropometric Measurements Outcomes**: Height, weight, body mass index, growth pattern indices/percentile ranks, and weight history.
- **Biochemical Data, Medical Tests, and Procedure Outcomes**: Lab data and tests.
- **Nutrition-focused Physical Findings Outcomes**: Physical appearance, muscle and fat wasting, swallow function, appetite and affect.\(^2\)
Additionally, the dietetics practitioner may indirectly influence other outcomes noted as “Health Care Outcomes”, which may also be useful for monitoring. These may include:

- **Health and Disease Outcomes**: Decreased risk, improvement of disease condition, prevention of adverse event.
- **Cost Outcomes**: Decreased diagnostic treatment and costs, decreased hospital and outpatient visits.
- **Patient Outcomes**: Decreased disability, increased quality of life\(^2\).

### Utilizing Outcomes Data

As previously noted, the collection of outcomes data is pertinent for the nutrition profession. However, several considerations are necessary when conducting nutrition research and determining how this type of data might be used. The analysis of data can vary widely and certain statistical analysis (e.g., standard deviation) may be required to appropriately report the data in a logical way. Statistical significance as well as clinical significance may also be considered. Whether the data is intended for publication or for other purposes, such as quality improvement reporting, may also dictate the type of analysis needed. Registered Dietitians (RD) intending to collect data are encouraged to explore various research methodologies before analyzing nutrition data. This can be done by getting involved in research studies through experienced researchers or networks such as the Academy’s Dietetics Practice Based Research Network ([http://www.eatright.org/Members/content.aspx?id=7187](http://www.eatright.org/Members/content.aspx?id=7187)). For more information on the research philosophy and priorities of American Dietetic Association see [http://www.eatright.org/Members/content.aspx?id=7188](http://www.eatright.org/Members/content.aspx?id=7188).

### Data Collection Using the Outcomes Monitoring Form (Excel file)

The subsequent Excel document in the toolkit lists several common heart failure outcomes and can be used to monitor a group of patients/clients over several encounters. Each outcome is listed under Food and Nutrition-Related History Outcomes, Anthropometric Outcomes or Biochemical Outcomes.

Within the Excel file there are 22 sheets, each used for a different purpose. **It is recommended that you save an additional copy of the Excel file so that you have the original version prior to inserting data or altering the forms so that it may be used for future collection.** The tabs on the bottom of the sheet let you choose from one of the 22 sheets within the file. Select a tab and it will change from gray to white; this allows you to view or enter data into the selected sheet. The purpose of each of the sheets is described below:

1. **Sample Monitoring Form**: This sheet provides a sample of how patient/client information would be entered into the Outcomes Monitoring Network.
2. **Outcomes Monitoring Forms (1-20)**: These are the only sheets used for entering your patient/client data. One individual patient/client is entered on each sheet, up to 20 patients/clients. Once entered, the aggregate data is automatically entered and graphed on the last sheet.
3. **Aggregate Data Graph**: The Aggregate Data Graph sheet is the last sheet listed in the file. No data will need to be entered into this sheet unless data is collected on more than 20 patients/clients. This sheet is automatically populated and graphed when data is entered into the Outcomes Monitoring Forms. The data illustrates a few key outcomes along with a graph that depicts this data. Only data for the number of patients/clients that are entered will be calculated here, thus not all 20 sheets of patients/clients will need to be filled out for the aggregate data to be populated and graphed. The number of patients/clients that were entered into the Outcomes Monitoring Sheets is totaled and listed at the top of the aggregate data box. This aggregate data may be useful for seeing trends across groups of patients/clients and improving care based on a multitude of data.
Entering Data

Getting Started

The 20 Outcomes Monitoring Forms provide forms to collect data for 20 patients/clients; one patient/client can be entered per sheet. When there are no data entered in the “Outcomes Monitoring Forms”, you will see cells that have “#NA” or “0”. This indicates a cell that contains a programmed formula and these will automatically calculate information such as totals, percent change, Body Mass Index (BMI) or percent of time occurring. To indicate the cells with formulas, they are highlighted in light red.

<table>
<thead>
<tr>
<th>% occurring</th>
</tr>
</thead>
<tbody>
<tr>
<td>#DIV/0!</td>
</tr>
<tr>
<td>#DIV/0!</td>
</tr>
<tr>
<td>% change</td>
</tr>
<tr>
<td>0%</td>
</tr>
<tr>
<td>0%</td>
</tr>
<tr>
<td>0%</td>
</tr>
<tr>
<td>0%</td>
</tr>
<tr>
<td>0%</td>
</tr>
</tbody>
</table>

Numerical values replace these symbols and zeros, once you have entered your data. Formulas are protected so that you will not delete them by accident. Cells which are filled in black indicate no data is to be entered. For example, height would only need to be entered in for the first encounter and not for subsequent encounters.

<table>
<thead>
<tr>
<th>Height (in)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
</tr>
</tbody>
</table>

All other cells are unprotected so that you can easily enter data. (Note: You may want to adapt the sheets for your own use. To alter formulas or sheet format you may “unprotect” sheets by going to “Review” and selecting “Unprotect Sheet”.)

Enter Data for Each Patient/Client

- The top of each sheet has space to enter patient/client information such as name, medical record number, phone number, DOB, Referring Physician, RD, Height, etc. **Important Note: The field for “Patient/Client Name” must be complete (or have text entered in the field) in order for the calculations on each sheet to work correctly.**
The encounter date for each patient/client may be entered in the cells to the right of the “**Encounter Date:**” cell. For each outcome, the data may be entered into the field under the appropriate encounter. For example, the fluid intake for a patient/client may be measured and entered to the right of the “Fluid (L/d)” cell and under the appropriate encounter date column.

<table>
<thead>
<tr>
<th>Patient ID/Medical Record No:</th>
<th>Phone No:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Encounter Date:</strong></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Food/Nutrition-Related Outcomes</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Nutrient Intake</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Energy (kcal/kg)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fluid (L/d)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sodium (mg/d)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Carbohydrate (g/day)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Counting CHO, if recommended (g/day)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fiber (g/day)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Protein (g/day)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fat (g/day)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Folate (ug/day) (from food)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Folate (ug/day) (from supplement)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>B6 (mg/day) (from food)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>B6 (mg/day) (from supplement)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>B12 (ug/day) (from food)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

A variety of data can be collected in this form and the unit for measurement is often listed next to the outcome of interest.

The “**% change**” column is based on the value under the first and last encounter with a patient/client. For example, if the patient/client had four encounters, the calculation for calories would take the fourth encounter value and determine the percent change from the first encounter. **There must be data entered in the first column (the baseline data) under the Encounter Date in order for the calculations to have a meaningful result in the % change column.** The percent change is calculated for several Food/Nutrition-Related Outcomes, Anthropometric Outcomes, Nutrition-Focused Physical Findings Outcomes, Biochemical Outcomes and Comparative Standards Outcomes.
## Nutrient Intake

<table>
<thead>
<tr>
<th>Nutrient</th>
<th>% change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Energy (kcal/kg)</td>
<td>#NA</td>
</tr>
<tr>
<td>Fluid (L/d)</td>
<td>#NA</td>
</tr>
<tr>
<td>Sodium (mg/d)</td>
<td>#NA</td>
</tr>
<tr>
<td>Carbohydrate (g/day)</td>
<td>#NA</td>
</tr>
</tbody>
</table>

- The “% occurring” value calculates the percent of time that a behavior is occurring and is calculated by entering in a “Y” or “N” in to the appropriate cells for that behavior.
- The “Total” values calculate the sum of the specific outcome. For example, after entering in the number of days for “Length of Stay” under “Hospitalizations”, then the “Total column” will display the total number of days that were documented for over multiple encounters.
- **BMI** is automatically calculated based on the height and weight entered for the patient/client.
- The “**Ideal Goal**” column provides the ideal goals for this population and is listed on each patient/client sheet. Specific goals for the patient may be noted in the column titled “**Patient Target Goals**”.

### Ideal Goals vs. Patient Target Goals

<table>
<thead>
<tr>
<th>Ideal Goals</th>
<th>Patient Target Goals</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>25-35 cal/kg</td>
<td></td>
</tr>
<tr>
<td>1.5-1.9 L/d</td>
<td></td>
</tr>
<tr>
<td>2000 mg/d</td>
<td></td>
</tr>
<tr>
<td>DRI</td>
<td></td>
</tr>
<tr>
<td>% of calories</td>
<td></td>
</tr>
</tbody>
</table>

- Data entered into the Outcomes Monitoring Forms for each patient/client will be graphed on each sheet below the data. There are three graphs to represent this data, two that display Food/Nutrition-Related Outcomes and one that display Hospitalization Information.
- Data values may be displayed as negative or positive depending on the progress of the patient/client.
- Refer to the “**Sample Monitoring Form**” for clarification on entering data.

### Adding Patients/ Clients

If more sheets are required to accommodate the patient/client data, the user may copy one of the 20 sheets as many times as needed. To copy a sheet, right click on the title tab at the bottom of the sheet, select “Move or Copy”, check the “Create a Copy” box and click “OK”. To include the new sheets in the aggregate data, the...
formulas will need to be adjusted to include the new data points. The graphs should automatically graph the data points once they are entered into the aggregate data formulas.

References


Institutional Review Board and Patient/Client Confidentiality

The collecting of patients/clients outcomes is considered research by most Institutional Review Boards (IRB). Approval by an IRB is needed prior to conducting research in order to ensure patient/client information is being protected. This is particularly true if the resulting outcomes will be shared or published. Many institutions will have an IRB within the institution that is accessible for this type of review process. RD’s considering collecting outcomes and conducting research should consult their institution’s IRB or seek an outside IRB when no IRB exists, prior to collecting any information.

A signed confidentiality statement may need to be signed by each patient/client before collecting patient/client data. The sample below may be used for this purpose.

Data Privacy and Security

It is important that a confidentiality statement like the following be attached to all data reports shared at a site.

- CONFIDENTIAL: This document has been prepared for review and evaluation by the ________________ Committee and is entitled to the protection of the peer review, medical review, quality assurance or other similar privileges provided for by state and federal law. It is not to be copied or distributed without the express, written consent of the legal department.

A written patient/client consent must be obtained before sharing any data. The following is an example informed consent form.

- REQUEST & AUTHORIZATION FOR RELEASE OF PATIENT/CLIENT INFORMATION

I, hereby authorize the release (patient’s/client’s name) of all relevant data in my patient/client records to the ...

I understand that I will receive a copy of this consent form if requested.

Patient/Client (Parent/Guardian) Signature    Date

Witness Signature       Date
Client Education Materials and Professional Resources

The *Nutrition Care Manual* is a Web-based publication of the Academy of Nutrition and Dietetics. The *Nutrition Care Manual* uses the framework of the Academy’s Nutrition Care Process and includes a wealth of disease-related information and extensive client education materials. Education materials include information such as meal planning, food allergies, cooking and shopping tips and label reading. Information contained in the *Nutrition Care Manual* compliments and supports the Evidence-Based Nutrition Practice Guidelines and toolkits developed by the Academy. Each can be used separately, but may be most effective if used together. Information and subscriptions for the Nutrition Care Manual can be found at [http://nutritioncaremanual.org](http://nutritioncaremanual.org).

Additionally, the Academy publishes other client education materials, resources and toolkits (e.g. Disorders of Lipid Metabolism Toolkit) that may be used is coordination with this toolkit. These may be purchased on the Academy’s Online Store at [www.eatright.org/shop](http://www.eatright.org/shop). Below you will find a list of these resources.

**Academy Toolkits**

**Electronic Health Record Toolkit**
Access online tools developed to set up Electronic Health Records from the experts. Toolkit includes a "roadmap" to guide you, allows tailored assistance as you enter the path at any point in the process [http://www.adaevidencelibrary.com/store.cfm?cid=0&cat=0](http://www.adaevidencelibrary.com/store.cfm?cid=0&cat=0).

**Academy Nutrition Care Manual**

Heart Failure Nutrition Therapy

Tips:

- Heart-Healthy Cooking Tips
- Heart-Healthy Eating: Label Reading Tips
- Heart-Healthy Shopping Tips.

Handouts in Spanish

Tips:

- Heart-Healthy Cooking Tips
- Heart-Healthy Eating: Shopping Tips

**Metric versions**

Heart Failure Nutrition Therapy

**Other Academy Resources**


**Private Practice/Reimbursement Resources**

- Coding, Coverage, and Compliance [http://www.eatright.org/coverage/](http://www.eatright.org/coverage/)
- Medicare MNT [http://www.eatright.org/mnt/](http://www.eatright.org/mnt/)
- The Medicare MNT Provider Newsletter (One-Year Subscription) [http://www.eatright.org/Shop/Product.aspx?id=11422&CatID=384](http://www.eatright.org/Shop/Product.aspx?id=11422&CatID=384)
Nutrition Entrepreneurs Dietetic Practice Group Products
http://www.nedpg.org/products/?CategoryID=1&Submit=Display

Informatics Resources
♦ Nutrition Informatics/HITECH Act
http://www.eatright.org/Members/content.aspx?id=6442451178

Additional Resources
♦ Heart Failure Society of America
  o General information http://www.hfsa.org (see Education tab)
  o Client education materials http://www.abouthf.org/order.htm
♦ American Heart Association http://www.heart.org (type “heart failure” in search box)
♦ National Institute of Health patient information on HF http://www.nhlbi.nih.gov/ type “heart failure” in search box
♦ Milner and Fenwick www.milnerfenwick.com (click on “heart disease” and then see heart failure DVDs)
Appendix 1: Heart Failure Basics

Definition of Heart Failure

Heart Failure is a syndrome caused by cardiac dysfunction. The heart has become enlarged and a weakened pump resulting in symptoms of edema, shortness of breath, and fatigue. **Decompensation** is the worsening of heart failure symptoms often resulting in hospitalization. Decompensation is often the result of medication non-compliance, dietary non-compliance, or the progression of the disease.

Common Medical Terms Associated with Heart Failure

**Angiotensin-converting enzyme inhibitor (ACE inhibitors) or angiotension receptor blockers (ARBs)** These medications prevent vasoconstriction. In heart failure, the heart is a weakened pump. With relaxed arteries, the weak pump can be more effective because it does not meet resistance from constricted arteries. Examples of ACE inhibitors are: enalapril, lisinpril, captopril. Examples of ARBs are: irbesartan, candesartan, losartan. ACE inhibitors block the formation of angiotensin II, a powerful vasoconstrictor whereas ARBs block the binding of angiotensin II to the artery’s muscle wall.

**Arrhythmia** An irregularity of the heartbeat rhythm. It can originate in the upper chambers (atria) or the lower chambers (ventricles) of the heart.

**Atrial fibrillation** The atria fails to contract in rhythm with the ventricles. Common with heart failure. High risk for blood clotting and stroke.

**Beta-blocker** A medication that works by blocking the effects of the hormone epinephrine. The heart beats more slowly, reducing blood pressure. In heart failure, beta-blockers may be protective by preventing further enlargement (remodeling) of the heart muscle. Examples of beta-blockers are: atenolol, metoprolol, carvedilol.

**B-type natriuretic peptide or brain natriuretic peptide (BNP)** A hormone made by the heart and indicates how well the heart is working. With a normal heart, BNP blood level is 0-99 picograms per milliliter (pg/mL). In a patient with heart failure, a BNP > 100 pg/mL means an increased amount of fluid or high pressure inside the heart. With medication and monitoring of sodium and fluid intake, BNP may decline to within normal limits for the patient with heart failure. The following ranges represent BNP levels and heart failure severity.

| BNP levels below 100 pg/mL indicate no heart failure |
| BNP levels of 100-300 suggest heart failure is present |
| BNP levels above 300 pg/mL indicate mild heart failure |
| BNP levels above 600 pg/mL indicate moderate heart failure |
| BNP levels above 900 pg/mL indicate severe heart failure |

**Cardiac output** A measurement of the amount of blood the heart pumps to the body per minute. It is usually stated in liters per minute.

**Cardiomyopathy:**

- **Ischemic cardiomyopathy** A form of heart failure due to a lack of blood flow to the heart muscle. Coronary artery disease or myocardial infarction is the frequent cause.
- **Idiopathic cardiomyopathy** A form of heart failure in which no specific cause can be determined.
- **Dilated cardiomyopathy** A form of heart failure in which the heart muscle becomes enlarged (dilated) and loses its elasticity, thus a weakened pump.
- **Hypertrophic cardiomyopathy** A heart muscle problem due to excessive growth of the heart muscle resulting in abnormal relaxation of the muscle (diastole).
- **Familial cardiomyopathy** A rare form of heart failure that is inherited and affects several members of a family.
- **Postpartum cardiomyopathy** Heart failure that occurs within a few days after childbirth.

**Cor pulmonale** A form of heart failure that involves only the right ventricle. Frequently referred to as right sided heart failure. Many patients with COPD will present with this type of heart failure.

**Diuretic** A medication that increases urination by acting on the kidney to rid the body of sodium and water.

**Echocardiogram** A noninvasive test that bounces sound waves off a heart to determine its size, structure, and function. It provides the ejection fraction percent. **Ejection fraction** is the amount of blood the ventricles of the heart pump with each beat. Normal Left Ventricle Ejection Fraction (LVEF) is 50% to 60%. A LVEF of < 50% is considered heart failure.

**Electrocardiogram (EKG)** A test that checks the electrical activity of the heart, including its rhythm, the presence of heart enlargement (Left Bundle Branch Block – LBBB). LBBB is frequently seen in patients with heart failure. An EKG also indicates evidence of a prior or recent myocardial infarction.

**Edema** Fluid under excessive pressure that leaks out of the blood vessel and moves into tissue. Commonly seen in the hands, legs, ankles, and abdomen. When it leaks into the lungs, it can be heard as crackles or rales.

**Paroxysmal nocturnal dyspnea** Sudden shortness of breath at night. When a patient with heart failure reclines in bed, the force of gravity is removed. The edema fluid works its way back into the blood vessels and travels back to the heart. The weakened heart cannot sustain the pressure from the extra fluid. The fluid backs up into the lungs causing congestion. The fluid in the lung prevents sufficient oxygen from getting in through the lungs and shortness of breath is the result.

### The Registered Dietitian’s Role in Heart Failure

Heart failure is the most frequent cause of hospitalizations in the Medicare age group. Readmissions within 30 days of discharge are not reimbursed. The most frequent cause of readmissions is medication and dietary non-compliance. Registered Dietitians have knowledge and skills to counsel and motivate patients to monitor their sodium and fluid intake in the patient’s specific environment. Preventing readmissions for heart failure is cost savings to the hospital and improves the patient’s quality of life.

As members of the multi-disciplinary heart failure team, Registered Dietitians’ assessment and evaluation skills are valued not only in monitoring sodium and fluid intake, but for assessing the patient’s protein and calorie needs, monitoring nutritional status (anemia, albumin, blood glucose, renal function etc.).

Registered Dietitians should be alert to renal status when working with patients with heart failure. Often the combination of diuretics and fluid restriction may result in blood or urine test results indicating renal insufficiency. Before treating for renal insufficiency, review diuretic dose and the patient’s current fluid intake. Consider discussing with the physician an increase in fluid intake or diuretic dose adjustment. One or both of these adjustments may improve renal status in the patient with heart failure.

The use of self-reported adherence score (rated on scale of 1-10, 1= non-adherent and 10 = completely adherent) is an appropriate tool to use when counseling a patient with heart failure. It can help both the Registered Dietitian and patients assess their level of adherence to the treatment recommendations and to set goals. It helps identify barriers to adherence and ways to achieve better compliance. For example, after the first encounter, the patient rates herself as a five on her ability to follow a daily low sodium meal plan. At the next encounter, the patient accomplished her goal and rates herself as a seven on a scale of 1-10. Self-evaluation is an excellent tool to measure progress for the patient, and it is helpful in charting the patient’s progress.
**Professional Resources**

To stay updated with heart failure research, the following resources are available:

[www.hfsa.org](http://www.hfsa.org) is the website of the Heart Failure Society of America. This is a world-wide group of cardiologists whose practice is devoted to heart failure. Many of the members are leading researchers in the field. Check this website often to see updates to the Guidelines for Heart Failure.

[www.abouthf.org](http://www.abouthf.org) is the website provided for the public and patients with heart failure. It is sponsored by the Heart Failure Society of America. It contains education pamphlets that can be downloaded or purchased. It also provides a link to the most current guidelines for heart failure.

[www.theheart.org](http://www.theheart.org) is a cardiology website. Membership is free. With membership, you will receive daily cardiology research reviews. This website is valuable for all RDs to remain current in heart research, but especially for RDs working in a multi-discipline heart team. You will be current on new medications, nutrition research pertaining to heart disease and prevention, and research in all aspects of cardiology including heart failure.

Marc Silver, MD is a leader in the field of heart failure. He is the author of three editions of *Success with Heart Failure*. It is a book written for patients with heart failure and their families. RDs will find this book to be of value because it explains complex issues of heart failure in an easy to understand format. It provides examples that help with patient counseling. The most recent edition is:

Silver, Marc. *Success with Heart Failure: Help and Hope for Those with Congestive Heart Failure*. 2002: DaCopo Press; Cambridge MA.
Appendix 2: Stages in the Development of Heart Failure and Recommended Therapy

Prevention of Heart Failure

The Heart Failure Society of America’s goal is the prevention of heart failure through risk reduction. They have identified risks or stages. The more risks identified in an individual, the greater the risk of developing heart failure. Risks are:

- Hypertension
- Diabetes
- Hyperlipidemia
- Physical inactivity
- Obesity
- Excessive alcohol intake
- Smoking
- Poor diet

The first three risks are linked to the development of coronary artery disease. Coronary artery disease is a major factor in the etiology of heart failure. Medications and lifestyle changes including diet and exercise will reduce these risks. Prevention is a goal with public health policy.

The diagnosis of heart failure is verified by BNP levels (see Appendix 1 for BNP ranges and severity of heart failure). The figure below illustrates the stages in the development of heart failure and the recommended therapy by stage.
Key: ACEI: angiotensin-converting enzyme inhibitors, ARB: angiotensin II receptor blocker, EF: ejection fraction, FHx CM: family history of cardiomyopathy, HF: heart failure, LVH: left ventricular hypertrophy, MI: myocardial infarction

Appendix 3: Quality of Life Tools

The following tools may be used to assess the quality of life in people with heart failure.


### Food Impact
During the last 2 weeks:

1. I ate enough food to be satisfied
2. I had plenty of choice in the food I ate
3. I was hungry between meals
4. Food was on my mind
5. I sneaked food
6. I tasted and enjoyed food without guilt
7. I could afford to buy food that was best for me
8. I took time to eat the food that was best for me
9. I, or someone else, took time to shop and prepare the food that was best for me

### Self-image
During the last 2 weeks I:

10. Liked the way I look
11. Liked the way my clothes fit
12. Beat myself up when I ate the food I felt I shouldn’t have
13. Took time for myself
14. Was pleased with the way I managed what I ate
15. Was confused about the food I should eat

### Psychological Factors
During the last 2 weeks I:

16. Rewarded myself with food
17. Was happy with the food I ate
18. Felt guilty about the food I ate
19. Felt the food was controlling me
20. Felt depressed about the way I looked
21. Felt depressed about the food I ate
22. Felt that changing the food I ate would make life more enjoyable for me
23. Was frustrated about limiting the food I ate
24. Was frustrated about how long it took to improve my food–related condition
25. Was angry that I had to change what and how I ate

### Social/Interpersonal
During the last 2 weeks:

26. My family/friends have ragged me about food I ate
27. My food needs have created stress with my family/friends
28. I had problems going out to eat with my family/friends
29. I have cut down the amount of time I spend on work or other activities because of my food-related condition
30. I had someone I could talk to who understood the struggles I have had with food
31. My family/friends made it difficult to stick to the food I thought I should eat
32. My food-related condition has caused problems with sexual relations

### Physical
During the last 2 weeks, my food-related condition has given me trouble in:

33. Walking at a moderate pace for 30 minutes
34. Walking slowly for 10 minutes
35. Walking up a flight of stairs
36. Bending or kneeling to pick things up
37. Getting up off the floor
38. Needing to use the bathroom so often I couldn’t go out of the house
39. Getting a good night’s sleep
40. Breathing comfortably
41. Having enough energy to do what I wanted to do

<table>
<thead>
<tr>
<th>Self-efficacy</th>
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<tbody>
<tr>
<td>During the last 2 weeks, I:</td>
</tr>
<tr>
<td>42. Knew what type of food I should have been eating for my health lifestyle</td>
</tr>
<tr>
<td>43. Knew the amount of food I could eat</td>
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<tr>
<td>44. Knew when to eat</td>
</tr>
<tr>
<td>45. Made healthy food choices</td>
</tr>
<tr>
<td>46. Ate the recommended amount of food</td>
</tr>
<tr>
<td>47. Was eating when I should be eating</td>
</tr>
<tr>
<td>48. Planned ahead to have healthy food when I needed it</td>
</tr>
<tr>
<td>49. Felt confident that I could trust myself when faced with difficult food choices</td>
</tr>
<tr>
<td>50. Felt confident that I would be able to live the rest of my life with these changes in my food</td>
</tr>
</tbody>
</table>

FIG 1. Fifty items statements from the first phase of development of the Nutrition Quality of Life.