

The Nutrition Care Process and Standardized Language in Nephrology Nutrition

ADA-Renal Practice Group Webinar
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Part of ADA-RPG and NKF-CRN Joint Council
Project on Nutrition Care Process

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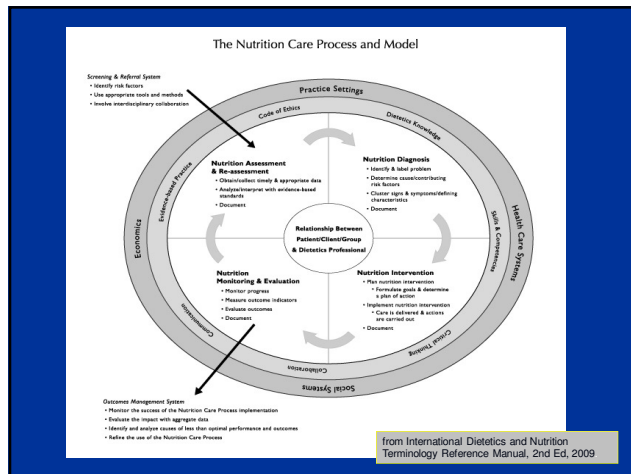
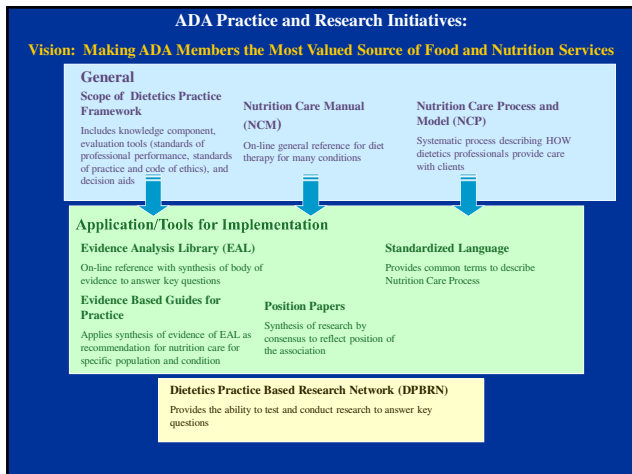
Objectives

- Review Nutrition Care Process (NCP) and model
 - Visit ADA web page resources
- Compare Conditions for Coverage (CfC) mandates with NCP steps
- Integrate NCP and its language into electronic health records.
- Apply the NCP Model and terminology in documentation.
 - Describe how to document nutrition care using standardized language (SL)
 - Become familiar with SL terms that may be useful in ESRD

How We Got Here.....

- Two decades of work by MA Kight, PhD, RD, created an early nutrition diagnostic language
 - Adapted to nephrology nutrition by Mary Pat Kelly, MS, RD, GNP
- 2001-2005 at ADA level
 - Nutrition Care Process and Model published in Journal (Lacey & Pritchett)
 - BOD appointed Standardized Language Task Force
 - First manual: Nutrition Diagnosis Terminology--Sept 2005
- 2006-now
 - Incorporated changes to Nutrition Diagnostic Terms based on Pam Charney's doctoral research (8 terms)
 - Terms for Intervention and for Monitoring and Evaluation developed
 - Research on terms—to determine validity, reliability
 - Publications:
 - Nutrition Diagnosis and Intervention— Sept 2006
 - International Dietetics and Nutrition Terminology (IDNT) Reference Manual, 1st Edition—Sept 2007
 - 2nd Edition—Sept 2008. Also exists in pocket guide version

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Existing Standardized Terminologies

Terminology	Users	Comments
ICD-9-CM <small>(ICD-10 in Nov 2013)</small>	WHO/CDC	<ul style="list-style-type: none"> describes medical dx has evolved into primary use for billing
CPT	AMA	<ul style="list-style-type: none"> procedure codes
NANDA	Nursing	<ul style="list-style-type: none"> started mid-80s as list of nursing diagnoses evolved into conceptual system that guides dx
NIC	Nursing	<ul style="list-style-type: none"> nursing interventions
NOC	Nursing	<ul style="list-style-type: none"> nursing outcomes

- Nutrition Care Process**
- Begins when
 - Patient/client/group has been identified at nutritional risk, needing further assistance to achieve and/or maintain nutrition and health goals
 - May include several cycles of the 4-step NCP during a course of MNT
 - Ends when
 - Nutrition goals are met—may never truly end in ESRD patients as long as dialysis continues

Implementing NCP Model

THINK ABOUT IT---

We implement this decision-making process
MANY times a day!!

This Webinar explores the APPLICATION of
the NCP and its standardized language (SL).

Rationale for NCP Model

Standard process and standard language:

- Establish language for nutrition care
- Support quality improvement and research projects
 - Outcomes research is needed
 - Research can lead to/support **Policy**
- Position nutrition documentation more strongly in electronic health records (EHRs)
 - Standardized language (SL) is major tool for this
- May enhance MNT reimbursement

Is it mandatory to use NCP
and SL?

- a) Yes
- b) No
- c) Yes and No

Is NCP Mandatory?

- YES, in education
 - Must be taught to undergrads
 - Must be taught to dietetic interns
- NO, in clinical practice
 - Neither ADA nor the Commission on Accreditation for Dietetics Education (CADE) can mandate what clinicians do
 - Government, other 3rd parties could create a mandate

NCP Model and Documentation

- All of the “usual” documentation formats are possible
 - SOAP, narrative, PIE, ADIME
- NCP provides a language
 - For documenting care
 - For researching care
- **NCP does NOT drive documentation**

Updated NCP Model

- 2 recent JADA articles
 - Nutrition Care Process and Model Part I: The 2008 Update. J Am Diet Assoc. 2008. 108: 1113-1117.
 - Nutrition Care Process Part II: Using the International Dietetics and Nutrition Terminology to Document the Nutrition Care Process. J Am Diet Assoc. 2008. 108: 1287-1293.

IDNT Reference Manual, 2nd Ed

- \$30 for members of ADA
- \$75 for non-members of ADA
- Next update in 2010
- Can buy permission to post on an Intranet for multiple users-- contact Esther Myers, PhD, RD (ADA's Director of Research) <emyers@eatright.org>



Includes

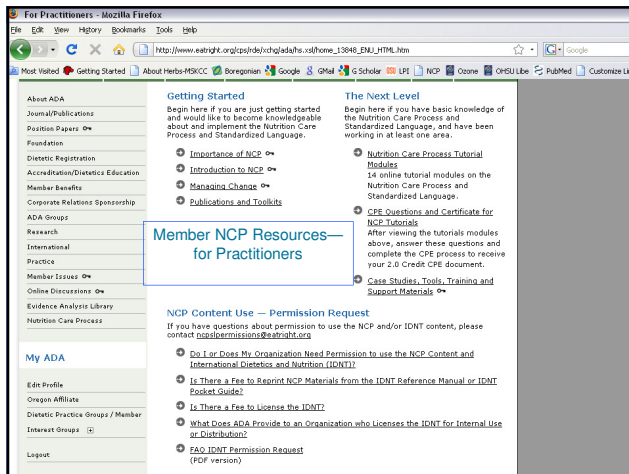
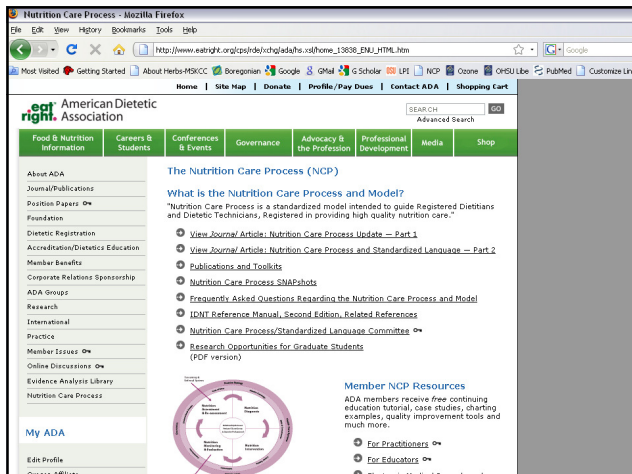
- All 3 standardized language lists (assessment/monitoring and evaluation; diagnosis; intervention)
- Worksheets defining standardized terms
- Reprint of NCP update article
- Bibliography of NCP resources
- Other implementation tools, such as “Snapshots”

Will look at the manual more later

Other Resources

- Tutorials and more at www.eatright.org
 - Select NCP in menu on left margin
- Series of articles in [Renal Nutrition Forum](#)
- “NCP In-depth Sponsored Independent Learning Kit” www.adaevidencelibrary.com/store.cfm?category=9
 - Learning package for RD(s) and mentor
 - Earn 5 or more CE credits
 - \$50 for ADA member; \$95 for non-member

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How I Became Involved

- Renalrd listserv
- ADA www.eatright.org
- CRN Spring Clinical Meeting
- Area Dietitians trained in NCP
- Forum Articles

The Challenge

We need to know the most used diagnostic codes.
Four Renal Dietitians take the challenge

Where Do We Start

- Met with Maureen
- Design a template
- Assign diagnosis codes
- Begin to work through the NCP Education Modules on ADA website

Did It Work?

- Template worked to identify problems
- NCP Educations Modules help to learn how to write PES Statements
- Intervention, Monitoring and Evaluation still remained a problem

What Next?

- NCP Manual
- NCP Education Modules
- Forum Fall Issue 2009
- The NCP Model Finally comes together

What I Came to Understand

- Good Nutrition Assessment Tool
- Diagnosis Codes
- PES Statement
- Goals and Interventions
- Monitoring and Evaluation
- Meets CMS Guidelines
- Could be a valuable asset to EHR.

What I Learned

- You have to start somewhere
- It takes time
- You get better with practice
- It is not going away

Comparing NCP Model and Conditions for Coverage (CfCs)— especially documentation mandates

NCP Step 1 and CfCs— Assessment

NCP

Assessment—first step. It includes

- Client history
 - Personal hx, medical/health/family hx, social hx, previous tx
- Food/nutrition-related history
 - Food/nutrient intake, herbal use
 - Knowledge, beliefs; food availability; nutrition quality of life (QOL)
 - Physical activity
- Biochemistries and other tests
 - Lab data, other tests (gastric emptying time, MRI, etc.)
- Anthropometrics
- Nutrition-focused physical findings
 - Physical appearance (wasting, obesity), GI issues (swallowing, nausea/vomiting/diarrhea/constipation), appetite, intake & output
 - SGA and/or nutrition-focused physical exam

Conditions for Coverage (CfC)— Assessment

One mandate affecting patient care:

- \$494.80—requires patient **assessment**
Must include medical history, adequacy, BP, ...renal bone disease, nutritional status,

Assessment

CfCs

- Interdisciplinary team (IDT) must assess pt
- Categories to be assessed are identified
- Providers developed forms to fulfill this mandate
 - Early Comprehensive Interdisciplinary Patient Assessment (CIPA) on NKF web pages—a sample

http://www.kidney.org/professionals/pdf/ANNA_form3.pdf

NCP

- 5 domains of assessment terms as noted on Snapshot and superbill
- Many terms within each domain
 - Purpose: to encourage concise, clear clinical documentation

CIPA and NCP Assessment Domains

CIPA Headings

- Demographics, medical hx, current health, anemia mgt, dialysis rx, DM mgt, bone-mineral mgt, nutrition-related meds
- Cultural/diet hx, previous nutrition ed, pica, allergies, appetite, physical activity
- Biochems
- Anthropometrics
- Dentition, muscle wasting, fluid retention, output

NCP Assess Domains

- Client history
- Food and nutr hx
- Biochems, other tests
- Anthropometrics
- Nutrition-focused physical findings

Case Study—Assessment of New In-Center HD Patient

53 yr old female with ESRD due to DM2.

CLIENT HX: Co-morbidities—Hypertension, hyperlipidemia, reactive airway disease (RAD), left ventricular hypertrophy (LVH), congestive heart failure (CHF). Newly diagnosed with ESRD—first in-center dialysis 1 week prior to this interview.

HD prescription: 3x/wk on Optiflux 180NRE dialyzer, 240 minutes, 3K and 2.5 Ca baths. Prescribed meds with nutrition significance: Erythropoietin (20,000 units IV per HD session), Tums 500 (2 per meal).

Cannot recall meds for DM2. Over-the-counter (OTC) meds: Centrum Silver multivitamin (2/day), One-A-Day multivitamin (2/day), Slo-Fe (1/day), 1000 IU cholecalciferol

FOOD AND NUTRITION HISTORY: Denies history of pica, denies specific cultural preferences. Lives alone, rarely eats out, eats most meals alone. Takes 3 meals/day with 1-2 snacks. Dietary protein appears adequate in 24-hour food recall. Describes brief nutrition education with hospital dietician, including handouts on renal diabetic diet. Attended diabetes classes years ago upon DM2 diagnosis. Avoids sweets. States she tries to follow diabetic diet but her "sugars are all over the place".

ANTHROPOMETRICS: Height 167.6 cm, target weight 74.5 kg. Weight after last HD = 73.9 kg (target weight being challenged), Body Mass Index (using 73.9 kg) = 26.2. No weight change in last 3 months. Interdialytic weight gains: 1 – 2 kg.

PHYSICAL EXAM: Good appetite. No gastrointestinal complaints. Appears pale. No edema. Skin warm, no evident ulcers or sores.

From McCarthy M, Asbell, D. *Renal Nutrition Forum*, Spring 2009

Biochemistries, other tests:

Test	Value	Range	Test	Value	Range
Potassium	5.0 mEq/L	3.5-5.5	Phosphorus	5.6 mEq/L	3.5-5.5
CO2	24.0mmol/L	22-30	Corrected Ca x Phos	51.5	≤ 55
BUN	48 mg/dL	60-100	iPTH	206 ng/L	150-300
Creatinine	6.8 mg/dL	0.5-1.3	Kt/V	2.04	>1.2
Albumin	3.8 mg/dL	Goal 4.0	URR	83.3%	>65%
Glu, non-fasting	259 mg/dL	70-100	Cholesterol, non-fasting	124 mg/dL	<200
Calcium	9.0 mg/dL	8.4-10.2	Triglycerides	385 mg/dL	35-135
Adj Ca	9.2 mg/dL	8.4-10.2	Hemoglobin	10.9 g/dL	11-12

NCP Step 2 and CfCs— Diagnosis

CfCs

- There is no mandate for diagnosis

NCP

Nutrition diagnosis—second step.

- 60 Diagnostic terms are arranged in 3 domains
 - Intake
 - Clinical
 - Behavioral-Environmental
- Nutrition diagnosis is written in “problem-etiology-signs & symptoms” format (PES)
 - “Inadequate protein intake (NI 5.7.1) due to increased needs and PD losses, as shown by alb 2.8 and by diet hx with < 60 g pro/day.”

Nutrition diagnosis LINKS assessment and intervention

Diagnosis

Does your Interdisciplinary assessment form include “degree of nutrition / malnutrition”?

- This may be helpful, especially when levels of malnutrition are clearly defined
 - Not enough differentiation for our large ESRD population
 - There is a diagnosis for malnutrition (NI 5.2)--and many other options for nutrition diagnosis in SL
- Challenge to nephrology nutrition leaders—
 - Advantage of writing clear, specific nutrition diagnoses
 - SL offers concise, clearly defined nutr dx terms which demonstrate the broad range of nutrition problems
 - Consider adding nutrition diagnosis(es) to forms/templates

Why a Nutrition Dx?



- Identify and label specific nutrition problems RDs are solely responsible for treating
- Similar in Anytown, USA
- Any practitioner with similar education/ experience level is likely to perform same intervention and expect similar outcomes

Coding Standardized Language

Example: NI-5.7.1 Inadequate protein intake

- Codes allow computer retrieval
 - Also may be useful in teaching, discussions
- They do NOT indicate rank
- These are not final codes...so DON'T use in chart notes
 - These numbers may “go away”
 - Will change when the nutrition diagnosis terms go into SNOMED or whichever classification system is selected

3 Domains of Nutrition Diagnosis....

Intake Domain

- Problems related to intake of energy, nutrients, fluids, bioactive substances through oral diet or nutrition support
- 5 classes
 - Caloric/energy balance
 - Oral or nutrition support intake
 - Fluid intake
 - Bioactive substance balance (not vit, min, PFC)
 - Nutrient – sub-categories for vitamins, minerals
- This domain is preferred by some SL experts

Clinical Domain

- Nutrition findings/problems identified that relate to medical or physical conditions
- 3 classes
 - Functional
 - Biochemical
 - Weight

Behavioral Domain

- Nutritional findings/problems identified that relate to knowledge, attitudes/beliefs, physical environment, access to food, and food safety
- 3 classes
 - Knowledge and beliefs
 - Physical activity and function
 - Food safety and access

Important Thought....

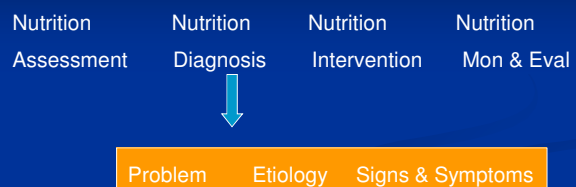
- Standardized Language ≠ Standardized Care
- Standardized Process ≠ Standardized Care

Nutrition Diagnosis--3 parts

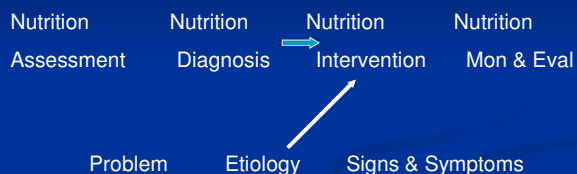
- Problem: the actual nutrition diagnosis
 - MUST be taken from the standardized terms for nutrition diagnosis—OR your own standard term
- Etiology: cause of the diagnosis, or contributing factors
 - MAY be taken from standardized terms for nutrition diagnosis, or other language
- Signs and symptoms: defining characteristics

P E S

Relationships



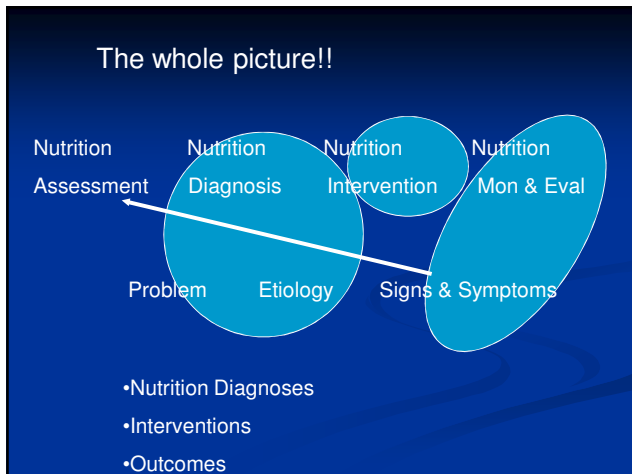
Relationships



Etiology should be something an RD can affect with nutrition intervention.
 Etiology should NOT be a medical diagnosis
 Etiology may be another nutrition diagnosis term

Relationships





Evaluating PES Statement

P

- Can the RD resolve or improve the nutrition diagnosis?
- Consider the Intake Domain as the preferred problem type

E

- Is the etiology listed the “root cause”?
- Will RD intervention resolve or improve the problem by addressing the etiology?
- Can RD intervention at least lessen the symptoms?

S

- Will measuring the Signs and Symptoms tell you if the problem is resolved or improved?
- Are the Signs and Symptoms specific enough?

PES Overall

- Do nutrition assessment data support the nutrition diagnosis, etiology, and Signs and Symptoms?

Establishing A Diagnosis

- Consider Intake Domain first
- Consult the pertinent worksheet
 - Review the definition
 - Compare etiologies, signs and symptoms on worksheet with your observations
- May be > 1 diagnosis—esp given time frames of several months between routine assessments in ESRD

Inadequate* Protein Intake (NI-5.7.1)	IDNT Reference Manual, Pg 255
Definition Lower intake of protein compared to established reference standards or recommendations based on physiological needs. <small>Note: Whenever possible, nutrient intake data should be considered in combination with clinical, biochemical, anthropometric information, medical diagnosis, clinical status, and/or other factors as well as diet to provide a valid assessment of nutritional status based on a totality of the evidence. (Dietary Reference Intakes, Applications in Dietary Assessment. Institute of Medicine, Washington, D.C.: National Academy Press; 2005)</small>	
Inadequate* Energy Intake (NI-1.4)	IDNT Reference Manual, Pg 214
Definition Energy intake that is less than energy expenditure, established reference standards, or recommendations based on physiological needs. <small>Note: May not be an appropriate nutrition diagnosis when the goal is weight loss, during end-of-life care, upon initiation of D/P/P, or acute stressed state (e.g., surgery, organ failure). Whenever possible, nutrient intake data should be considered in combination with clinical, biochemical, anthropometric information, medical diagnosis, clinical status, and/or other factors as well as diet to provide a valid assessment of nutritional status based on a totality of the evidence. (Dietary Reference Intakes, Applications in Dietary Assessment. Institute of Medicine, Washington, D.C.: National Academy Press; 2005)</small>	
Inadequate* Oral Food/Beverage Intake (NI-2.1)	IDNT Reference Manual, Pg 218
Definition Oral food/beverage intake that is less than established reference standards or recommendations based on physiological needs. <small>Note: May not be an appropriate nutrition diagnosis when the goal is weight loss, during end-of-life care, upon initiation of feeding, or during combined oral/EN/PN therapy. Whenever possible, nutrient intake data should be considered in combination with clinical, biochemical, anthropometric information, medical diagnosis, clinical status, and/or other factors as well as diet to provide a valid assessment of nutritional status based on a totality of the evidence. (Dietary Reference Intakes, Applications in Dietary Assessment. Institute of Medicine, Washington, D.C.: National Academy Press; 2005)</small>	

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Altered Nutrition-Related Laboratory Values (specify) (NC-2.2)

Definition
Changes due to body composition, medications, body system changes or genetics, or changes in ability to eliminate byproducts of digestive and metabolic processes.

Etiology (Cause/Contributing Risk Factors)
Factors gathered during the nutrition assessment process that contribute to the existence or the maintenance of pathophysiological, psychosocial, situational, developmental, cultural, and/or environmental problems:

- Kidney, liver, cardiac, endocrine, neurologic, and/or pulmonary dysfunction
- Prematurity
- Other organ dysfunction that leads to biochemical changes

IDNT Reference Manual, Pg 294-295

Signs/Symptoms (Defining Characteristics)
A typical cluster of subjective and objective signs and symptoms gathered during the nutrition assessment process that provide evidence that a problem exists; quantify the problem and describe its severity.

Nutrition Assessment Category	Potential Indicators of this Nutrition Diagnosis (one or more must be present)
<i>Biochemical Data, Medical Tests and Procedures</i>	<ul style="list-style-type: none"> • Increased AST, ALT, T. bili, serum ammonia (liver disorders) • Abnormal BUN, Cr, K, phosphorus, glomerular filtration rate (GFR) (kidney disorders) • Abnormal PO_2 and $PCCO_2$ (pulmonary disorders) • Abnormal serum lipids • Abnormal plasma glucose and/or HgA1c levels • Inadequate blood glucose control • Other findings of acute or chronic disorders that are abnormal and of nutritional origin or consequence
<i>Anthropometric Measurements</i>	<ul style="list-style-type: none"> • Rapid weight changes • Other anthropometric measures that are altered
<i>Nutrition-Focused Physical Findings</i>	<ul style="list-style-type: none"> • Jaundice, edema, ascites, pruritis (liver disorders) • Edema, shortness of breath (cardiac disorders) • Blue nail beds, clubbing (pulmonary disorders) • Anorexia, nausea, vomiting
<i>Food/Nutrition-Related History</i>	Reports or observations of: <ul style="list-style-type: none"> • Estimated intake of foods high in or overall excess intake of protein, potassium, phosphorus, sodium, fluid • Estimated intake of micronutrients less than recommended • Food- and nutrition-related knowledge deficit, e.g., lack of information, incorrect information, or noncompliance with modified diet
<i>Client History</i>	<ul style="list-style-type: none"> • Conditions associated with a diagnosis or treatment, e.g., renal or liver disease, alcoholism, cardiopulmonary disorders, diabetes

New HD patient --
Review case study
to identify 1 possible nutr dx
related to glucose control

Possible PES Statements

Choose the best option for a nutrition diagnostic statement related to pt's elevated glucose.

- Self-monitoring deficit due to patient feeling overwhelmed by the progression of ESRD, as evidenced by no CBGs, pt not aware of DM meds.
- Altered nutrition-related labs due to ESRD as evidenced by patient requiring HD.
- Altered nutrition-related labs due to poor self-management of DM, as evidenced by glu 259.

Discussion.....

Now let's review full scope of
nutrition diagnoses for this new
HD patient.

Establishing A Diagnosis

.....Must know where you are going

- Experienced dietitians often know what they are going to do (intervention or service) before finishing the assessment!
- Sometimes listing intervention OR signs and symptoms helps you establish diagnosis
- After selecting diagnosis, prepare nutrition diagnostic statement
- Don't try to bundle several issues into 1 diagnosis
 - Case study—phosphorus and glucose are “altered” but they are different clinical situations, 2 different dx

Case Study—New HD Patient

Selecting nutrition diagnosis(es)—

Major areas of concern

- Very little prior nutrition education
- Poor knowledge re: DM management
- Excessive MVI intake in non-renal formulation

Select Nutrition Diagnoses

My concerns:

- Very little prior nutrition education
 - NB1.1—Food and nutrition-related knowledge deficit
- Not aware of, not monitoring meds, CBGs for better DM control
 - NB1.4—Self-monitoring deficit
- Inappropriate MVI use
 - NI5.9 and 5.10—Excessive vitamin and mineral intake

PES Statement

Clinical observation: very little prior nutrition education

Food and nutrition-related knowledge deficit due to lack of in-depth education on food choices as evidenced by high potassium and high phosphorus foods in 24-hour diet recall.

Evaluating this PES statement

Food and nutrition-related knowledge deficit due to lack of in-depth education on food choices as evidenced by high potassium and high phosphorus foods in 24-hour diet recall.

P

- Can the RD resolve or improve the nutrition diagnosis?
- Consider the Intake Domain as the preferred problem type

E

- Is the etiology listed the "root cause"?
- Will RD intervention resolve or improve the problem by addressing the etiology?
- Can RD intervention at least lessen the symptoms?

S

- Will measuring the Signs and Symptoms tell you if the problem is resolved or improved?
- Are the Signs and Symptoms specific enough?

PES Overall

- Do nutrition assessment data support the nutrition diagnosis, etiology, and signs and symptoms?

PES Statement

Clinical observation: not aware of, not monitoring meds, CBGs for better DM control

Self-monitoring deficit due to feeling overwhelmed by progression to ESRD as evidenced by patient not checking CBGs and not able to name DM meds.

Self-Monitoring Deficit (NB-1.4)

Definition
Lack of data recording to track personal progress.

Etiology (Cause/Contributing Risk Factors)
Factors gathered during the nutrition assessment process that contribute to the existence or the maintenance of pathophysiological, psychosocial, situational, developmental, cultural, and/or environmental problems.

- Food and nutrition related knowledge deficit concerning self-monitoring
- Lack of social support for implementing changes
- Lack of value for behavior change or competing values
- Perception that lack of resources (e.g., time, financial, or interpersonal) prevent self-monitoring
- Cultural practices that affect the ability to track personal progress
- Impaired cognitive ability, including learning disabilities, neurological or sensory impairment, and/or dementia
- Prior exposure to incompatible information
- Not ready for diet/behavior change
- Unwilling or disinterested in making progress
- Lack of focus and attention to detail, difficulty with time management and/or organization

Signs/Symptoms (Defining Characteristics)
A typical cluster of subjective and objective signs and symptoms gathered during the nutrition assessment process that provide evidence that a problem exists, quantify the problem and describe its severity.

Nutrition Assessment Category	Potential Indicators of this Nutrition Diagnosis (one or more must be present)
Biochemical Data, Medical Tests and Procedures	• Reported data inconsistent with biochemical data, e.g., estimated dietary intake is not consistent with biochemical data
Anthropometric Measurements	
Nutrition-Related Physical Findings	
Food/Nutrition-Related History	Reports or observations of: <ul style="list-style-type: none"> Incomplete self-monitoring records, e.g., glucose, food, fluid intake, weight, physical activity, urinary output records Estimated food intake data inconsistent with weight status or growth pattern data Enthusiasm or anger regarding need for self-monitoring Uncertainty of how to complete monitoring records Uncertainty regarding changes that could/should be made in response to data in self-monitoring records No self-management equipment, e.g., no blood glucose monitor, glucometer
Client History	<ul style="list-style-type: none"> Diagnoses associated with self-monitoring, e.g., diabetes mellitus, obesity, new onsets New medical diagnosis or change in existing diagnosis or condition

IDNT Reference Manual, Pg 313-314

PES Statement

Clinical observation: inappropriate MVI use

Problem:

due to

Etiology:

as evidenced by

Signs and Symptoms:

Which nutrition diagnosis is more appropriate?

- Excessive bioactive substance intake (NI 4.2)
- Excessive vitamin and mineral intake (NI 5.9.2 and 5.10.2)

Look at the worksheets, and then decide....

Excessive Bioactive Substance Intake (NI-4.2)

Definition
Higher intake of bioactive substances compared to established reference standards or recommendations based on physiological needs.
Note: Working definition of bioactive substances—physiologically active components of foods that may health benefit beyond traditional macronutrient or micronutrient equivalents. There is a simple consensus about a definition for bioactive substances.

Etiology (Cause/Contributing Risk Factors)
Factors gathered during the nutrition assessment process that contribute to the existence or the maintenance of pathophysiological, psychosocial, situational, developmental, cultural, and/or environmental problems.

- Food- and nutrition-related knowledge deficit concerning recommended bioactive substance intake
- Contamination, mislabel, misuse, recent brand change, recent dose increase, recent formulation change of substance consumed
- Frequent intake of foods containing bioactive substance
- Alteration in gastrointestinal tract structure and/or function

Signs/Symptoms (Defining Characteristics)
A typical cluster of subjective and objective signs and symptoms gathered during the nutrition assessment process that provide evidence that a problem exists, quantify the problem and describe its severity.

Nutrition Assessment Category	Potential Indicators of this Nutrition Diagnosis (one or more must be present)
Biochemical Data, Medical Tests and Procedures	<ul style="list-style-type: none"> Lab values indicating excessive intake of the specific substance, such as rapid decrease in cholesterol from intake of statin or statin orders and a statin drug and related dietary changes or medication Increased hepatic enzymes reflecting hepatocellular damage
Anthropometric Measurements	<ul style="list-style-type: none"> Weight loss as a result of malabsorption or maldigestion
Nutrition-Focused Physical Findings	<ul style="list-style-type: none"> Constipation or diarrhea related to estimated intake higher than recommended Neurologic changes, e.g., anxiety, mental status changes Cardiovascular changes, e.g., heart rate, blood pressure Discomfort or pain associated with intake of foods rich in bioactive substances, e.g., soluble fiber, β-glucan, soy isoflavones
Food/Nutrition-Related History	<p>Reports or observations of:</p> <ul style="list-style-type: none"> High intake of plant foods containing: <ul style="list-style-type: none"> Soy protein (total and LDL cholesterol) β-glucan, e.g., whole oat products (total and LDL cholesterol) Plant sterol and stanol esters, e.g., fortified margarine (total and LDL cholesterol) or other foods based on dietary substance, concentrate, meal/flour, concentrate, extract, or combination Substances that interfere with digestion or absorption of food/nutrients Ready access to available food/products with bioactive substance, e.g., in form dietary supplement venders Attempts to use supplements or bioactive substances for weight loss, to treat constipation, or to prevent or cure chronic or acute disease
Clinical History	<ul style="list-style-type: none"> Conditions associated with a diagnosis or treatment, e.g., cardiovascular disease, elevated cholesterol, hypertension Cardiovascular changes, e.g., EKG changes

IDNT Reference Manual, Pg 235-236

Excessive Mineral Intake (specify) (NI-5.10.2)

Definition
Higher intake of one or more minerals compared to established reference standards or recommendations based on physiological needs.

Etiology (Cause/Contributing Risk Factors)
Factors gathered during the nutrition assessment process that contribute to the existence or the maintenance of pathophysiological, psychosocial, situational, developmental, cultural, and/or environmental problems.

- Food- and nutrition-related knowledge deficit concerning food and supplemental sources of minerals
- Harsh diet/ratios about food, nutrition, and nutrition-related topics
- Food faddism
- Accidental overrepresentation
- Overconsumption of a limited variety of foods
- Lack of knowledge about management of diagnosed genetic disorder affecting mineral homeostasis [hemochromatosis (iron), Wilson's disease (copper)]
- Lack of knowledge about management of diagnosed disease state requiring mineral restriction [cholestatic liver disease (copper and manganese), renal insufficiency (phosphorus, magnesium, potassium)]

Signs/Symptoms (Defining Characteristics)
A typical cluster of subjective and objective signs and symptoms gathered during the nutrition assessment process that provide evidence that a problem exists, quantify the problem and describe its severity.

Nutrition Assessment Category	Potential Indicators of this Nutrition Diagnosis (one or more must be present)
Biochemical Data, Medical Tests and Procedures	<p>Changes in appropriate laboratory values, such as:</p> <ul style="list-style-type: none"> TSH (iodine supplementation) ↓ HbL (iron supplementation) ↑ Serum ferritin and transferrin saturation (iron overload) Hyperephosphatemia Hypomagnesemia Copper deficiency anemia (zinc)
Anthropometric Measurements	<ul style="list-style-type: none"> Hair and nail changes (selenium) Anemia (iron supplementation) GI disturbances (iron, magnesium, copper, zinc, selenium)
Nutrition-Focused Physical Findings	<ul style="list-style-type: none"> Hair and nail changes (selenium) Anemia (iron supplementation) GI disturbances (iron, magnesium, copper, zinc, selenium)
Food/Nutrition-Related History	<p>Reports or observations of:</p> <ul style="list-style-type: none"> Estimated intake of foods or supplements containing high amounts of mineral compared to DRIs
Clinical History	<ul style="list-style-type: none"> Liver damage (copper, iron), enamel or skeletal fluorosis (fluoride)

IDNT Reference Manual, Pg 281-282.

Which nutrition diagnosis is more appropriate?

- a) Excessive bioactive substance intake (NI 4.2)
- b) Excessive vitamin and mineral intake (NI 5.9.2 and 5.10.2)

Discussion.....

NCP Steps 3 & 4 and CfCs— Intervention and Monitoring & Evaluation

(Plan of Care, Services, Outcomes)

CfCs—Intervention and Monitoring & Evaluation

- §494.90 mandates individualized plan of care (POC), prepared by IDT
- POC should be outcome-oriented, describing
- Services needed (**interventions**)
 - Outcomes (**monitoring & evaluation**)

Intervention

- Snapshot
 - Note difference between domains of nutrition education and nutrition counseling
- Nutrition intervention terminology
 - Note degree of refinement of the terms
 - May not need to “drill down” to that level
 - At OHSU, we compromised by listing the domains and some major sub-categories as our nutrition intervention terms in Phase 1 of EHR

Nutrition Intervention

- 3rd phase of NCP--has 2 parts
 - Planning
 - Prioritize nutrition diagnosis (diagnoses)
 - Consult evidence-based guidelines, other resources
 - Determine patient-focused expected outcomes
 - Work with patient, caregivers
 - Consider time and frequency of care
 - Develop nutrition prescription
 - Implementation
 - 4 domains of Intervention, over 60 intervention terms

Nutrition Prescription

What can the Nutrition Prescription include, what should it address?

- Energy? Specific foods/ nutrients?
- Route of nutrition?
- Physical activity?
- Education needs?
- Access to food, resources?

It is NOT a diet order!
May include as much or as little detail as needed.

Nutrition Prescription for Case Study

2200-2600 kcal/day (30-35 kcal/kg); 90-95 g pro (1.2-1.3 g/kg); 2 g Na, 2 g K, 1200 mg phosphorus, consistent CHO (5 to 6 carbs/meal, each 15 gm CHO)

Selecting Intervention(s)

- Nutrition Intervention -- part 2: select actual interventions
 - 4 domains:
 - Food and/or nutrient delivery
 - Nutrition education
 - Nutrition counseling
 - Coordination of nutrition care

Monitoring & Evaluation

Monitoring & evaluation—fourth step of NCP

- Uses 4 of 5 domains defined in assessment
 - Food/nutrition-related history
 - Biochemistries and other tests
 - Anthropometrics
 - Nutrition-focused physical findings
- RD monitors, measures, evaluates changes in nutrition care indicators
 - Standardized indicators (as in SL) increase reliability and validity of outcome data
 - Nutrition monitoring and evaluation are described in clinically meaningful, clear, discrete terms

Applying Intervention SL in POC

Food and nutrition-related knowledge deficit related to lack of education on appropriate food choices, as evidenced by hi K and hi P foods in recall.

PLAN OF CARE:

- Services needed (interventions)
 - Comprehensive nutrition education re: advanced topic (E 2.3)
- Outcomes
 - K and P intake (FH 1.7.2) Will limit high K foods to 1 serv/day; will limit dairy to 1 serv/day.
 - Serum levels will be wnl next month (BD 1.2.7 and 1.2.11).

Applying Intervention SL in POC

Self-monitoring deficit related to feeling overwhelmed by progression of CKD, as evidenced by not checking CBGs and unaware of meds.

PLAN OF CARE:

- Services needed (interventions)
 - Comprehensive nutrition education re: advanced topic (SMBG) (E 2.3)
 - Nutrition-related medication management (ND 6.2)
- Outcomes
 - Pre-prandial blood glucose (BD 1.5.4) and med use (CH 2.2.1)
 - Records pre-meal CBGs 2x/da; works with PCP on glucose control and meds.

Applying Intervention SL in POC

Excess vitamin and mineral intake related to pt unaware of special needs in ESRD, as evidenced by taking double doses of 2 different MVIs.

PLAN OF CARE:

- Services needed (interventions)
 - Nutrition-related medication management (ND 6.2)
- Outcomes
 - Vitamin and mineral intake (FH 1.7.1 and 1.7.2). Will replace current MVIs with renal-specific MVI within 2-4 weeks.

Intervention/Monitoring & Eval

CfCs

- Required POC should describe
 - Services
 - Outcomes
 - Including time frame

Intervention

- SL terms for intervention describe services
- NCP intervention starts with
 - Care plan
 - Timeline

Monitoring & Evaluation

- SL terms for M&E are "outcomes"

Challenges And Benefits Of NCP/Standardized Language In Electronic Health Records (EHR)

Electronic Health Record (EHR)

EHRs in ESRD facilities

- Probably designed
 - Before NCP, SL
 - Without nutrition input
- Can place quality nutrition care in partnership with other aspects of care
- NCP fits well into EHR
 - SL is key component

EHR-Nutrition Challenges

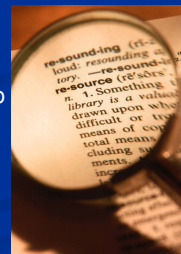
Goal: more nutrition involvement in EHR development and upgrades

- Steep learning curve
 - IT language, EHR structure and “building process”, institutional/corporate traits and quirks
- Applying NCP and SL in EHR package
 - ADA is eager to work with nephrology EHR vendors
- Interdisciplinary approach essential
 - Huge project, many perspectives

Resources ADA Offers

IN ADDITION to NCP and SL.....

- Reaching out to vendors, database services
 - Newest version of EPIC has NCP, SL
 - Discussions with other major vendors
 - Who are the nephrology vendors?
- ADA Nutrition Informatics Workgroup
- Clinical Nutrition Managers (CNM)
- Food and Nutrition Informatics Subunit-reference study
- Peer Network for Nutrition Diagnosis



Estimated Needs And Nutrition Dx

Time Taken: 8/17/2009
Date: 8/17/2009
Time: 1435

Nutrient Requirements

- Estimated caloric needs
- Last Fld Value: "No value"
- Estimated protein needs
- Last Fld Value: "No value"
- Estimated fluid needs
- Last Fld Value: "No value"

Nutrition Problems

- Increased Energy
- Excessive Energy Intake
- Inadequate Energy Intake
- Excessive Oral Intake
- Inadequate Oral Intake
- Excessive Oral Intake
- Inadequate Intake from Enteral/Parenteral Nutrition
- Excessive Intake for Enteral/Parenteral Nutrition
- Inappropriate Intake of Enteral/Parenteral Nutrition

Nutrition Interventions (For Nutritionists use only)

INTERDISCIPLINARY

Problem Interventions

1. Food and nutrient distribution type or amount
2. Oral Nutrition Supplements
3. Nutrition Education

Case Study—3 mo Re-assessment

53 yr old female with ESRD due to DM2.

CLINICAL DATA: Summary of data between Month 0 and Month 3 on HD: Vascular access surgery 2 months ago; started using LJA AV Cimino fistula last week. Laser surgery on left eye planned in 3 weeks.

Dialysis rx: 3x/wk on Optiflux 180NRE dialyzer, 240 minutes, 2K and 2.5 Ca baths
Over-the-counter (OTC) meds: Adult Aspirin, Centrum Silver multivitamin (1/day), Slo-Fe (1/day) Prescription meds with nutrition significance: 9000 units EPOGEN 3x/wk, 80 mg furosemide 2x/day; 40 mg Lipitor; Novolin 70/30 (65 u before breakfast; 40 units before supper); 2 PhosLo/meal; 50 mg Venofer q wk; 2000 IU cholecalciferol daily

Has had 2 visits with endocrinologist who is managing DM2; just got a glucometer and checks CBG before breakfast 5-6x/week.

FOOD AND NUTRITION HISTORY: No nausea or vomiting. Can identify high potassium foods; stated compliance with low potassium diet until recent weeks—strawberries too tempting; eating more beans, too. Still describes good appetite, though never has eaten much meat or poultry; does not like fish. 24-hour recall shows protein intake ~60 gm per day.

ANTHROPOMETRICS: Height 167.6 cm, target weight 73 kg for Body Mass Index (BMI) 26. Was 74.5 kg at month 0 for BMI 26.2. Weight after last HD = 72.5 kg. 2% weight loss in last 3 months as target weight has been adjusted.

McCarthy M, Asbell D. Renal Nutrition Forum, Fall 2009.

BIOCHEMS	Results	Lab/Unit Norm	BIOCHEMS	Results	Lab/Unit Norm
Potassium	5.8 mEq/L	3.5-5.5	Phos	6.5 mEq/L	3.5-5.5
CO2	22 mmol/L	22-30	Corrected Ca x P	59	≤ 55
BUN	74 mg/dL	60-100	iPTH	155 ng/L	150-300
Creatinine	5.5 mg/dL	0.5-1.3	Kt/V	1.86	>1.2
Albumin	3.6 g/dL	Goal 4.0	URR	75%	>65
Glu, non-fasting	289 mg/dL	70-110	Hgb A1c	9.4% (10 % at month 1)	≤ 7%
Calcium	9.1 mg/dL	8.4-10.2	Chol, non-fasting	124 mg/dL	<200
Adj Ca	9.4 mg/dL	8.4-10.2	Hgb	10.9 g/dL	11-12

Case Study—Re-assessment NUTRITION DIAGNOSES

- Knowledge deficit—resolved
 - Improved knowledge of dietary K and P
 - New nutr dx: excess mineral intake (NI 5.10.2)
- Self-monitoring deficit—continues
- Excess vitamin and mineral intake—continues, though it is improved
- NEW diagnosis: Inadequate protein intake (NI 5.7.1) or Inadequate oral intake (NI 2.1)

Applying Intervention SL in POC

Excess potassium and phosphorus intake related to relapse and related to availability of seasonal foods, as evidenced by hi P and seasonal hi K foods in recall.

PLAN OF CARE:

- Services needed (interventions)
 - Comprehensive nutrition education re: advanced topic (E 2.3)—strategies for better dietary control
- Outcomes
 - K and P intake (FH 1.7.2) Will limit high K foods to 1 serv/day; will limit dairy to 1 serv/day.
 - Serum levels will be wnl next month (BD 1.2.7 and 1.2.11).

Applying Intervention SL in POC

Self-monitoring deficit related to still learning how to use glucometer, as evidenced by just receiving glucometer last week and only 5-6 CBGs/week.

PLAN OF CARE:

- Services needed (interventions)
 - Comprehensive nutrition education re: advanced topic (SMBG) (E 2.3)—how CBG data can help
 - Nutrition-related medication management (ND 6.2)
- Outcomes
 - Pre-prandial blood glucose (BD 1.5.4) and med use (CH 2.2.1)
 - Records pre-meal CBGs 1-2x/da

Applying Intervention SL in POC

Excess vitamin and mineral intake related to pt beliefs re: vitamin supplements, as evidenced by not adjusting to renal-specific MVI

PLAN OF CARE:

- Services needed (interventions)
 - Nutrition-related medication management (ND 6.2)
- Outcomes
 - Vitamin and mineral intake (FH 1.7.1 and 1.7.2). Will replace current Centrum Silver with renal-specific MVI within 2-4 weeks.

Applying Intervention SL in POC

Inadequate protein intake related to pt food preferences, as evidenced by patient does not like meat or poultry, and dietary pro below goal.

PLAN OF CARE:

- Services needed (interventions)
 - Comprehensive nutrition education re: advanced topic (E 2.3)—alternative protein sources
- Outcomes
 - Protein intake (FH 1.6.2). Will identify acceptable foods to add at least 14 gm dietary pro/day.

Advantages of SL in ESRD

SL supports

- Identifying most frequent nutrition dx
 - Terms clearly defined
- Efficient documentation in EHR
- Tracking dx, interventions, outcomes
 - What works?
- Research into common nutrition dx
 - Common terminology supports multi-center research
 - Research supports policy development!
- Reporting in region, nation about nutr dx

Getting Started with NCP, SL

- Make sure you have IDNT Reference Manual....and use it!
- Develop a strategy
 - Start with one step, such as Nutrition Dx
 - Start with part of your case load
 - Meet with other RDs regularly to discuss cases, how you wrote PES, for example
 - Refer to IDNT Reference Manual at these sessions
 - You'll learn about your colleagues' practices!

Possible Compromises

- My bias: Nutrition dx terms very important
 - Should use SL
 - May develop your own—disadvantage is lack of consistency with other institutions
- Develop short list of “most commonly used” diagnoses
- May use domains of intervention (instead of the full list of terms) to document care plans

Summary:NCP/CfC Comparison

NCP Steps	Counterparts in CfC With Supporting IG Tags Noted
Assessment	§494.80 describes requirements for patient assessment . IG Tags V500 to 515 describe information to be included in assessments (509 is specific to nutrition; topics discussed in other tags, such as factors associated with renal bone disease, also relate to nutrition and may be completely or partially addressed by the nephrology dietitian in accordance with accepted practice patterns at a given ESRD facility).
Diagnosis	Not mandated, but should be included as it is the critical link between assessment and intervention. It is Step 2 in the NCP .
Intervention (includes plan of care)	§494.90 states that IDT must develop and implement a comprehensive plan of care that describes services needed (interventions) and outcomes (monitoring and evaluation step of NCP) . IG Tag 545 sets expectations for an outcome-oriented POC related to nutritional status.
Monitoring and evaluation	

Applying NCP Model To Support CfC Compliance

- Assessment: Comprehensive interdisciplinary patient assessment
 - Organize nutrition components of CIPA into 5 domains of nutrition assessment
 - Use standardized terminology
- Diagnosis—critical link between assessment and intervention
 - Include this step in your forms
 - Await research findings to identify frequently used terms

Applying NCP Model To Support CfC Compliance

- Intervention
 - NCP's "care plan" is the same as CfC's POC
 - Intervention terms are "services", as CfCs mandate
- Monitoring & evaluation—
 - CfCs require clearly identified outcomes
 - SL for assessment/monitoring and evaluation describes outcomes
 - SL enhances validity and reliability
 - SL supports outcomes reporting
 - SL supports research with a larger "n"
 - SL is outcome-oriented, as required in CfCs

Looking Ahead

- ADA encourages RDs to "customize" NCP to their practice
 - Identify your "10 most frequent" diagnoses, eg
- ADA is receptive to suggestions for change and for new terms
 - Must be backed by data
 - Some member suggestions will appear in 2010 update of the IDNT Reference Manual