



Welcome to Today's Expert Webinar for the 2019  
MQii Learning Collaborative:  
***Optimization of the Electronic Health Record  
(EHR) for Nutrition Care***

Wednesday, August 7, 2019

We will get started promptly at  
3:00PM ET

(2:00PM CT; 1:00PM MT; 12:00PM PT)

*All phone lines have been muted*

# Before We Get Started...

The screenshot shows the Cisco WebEx Meeting Center interface. At the top, the title bar reads "Cisco WebEx Meeting Center". Below it is a menu bar with "File", "Edit", "Share", "View", "Audio", "Participant", and "Meeting Help". The main toolbar includes "Quick Start", "Meeting Info", a tab for "20170322 - M...", and "New Whiteboard". On the right side of the toolbar, the "Chat" button is highlighted with a red box, and a red arrow points to it from the "Participants" list below. The "Participants" list shows "Laura Fincher (Host, me)" and "Eleanor Fitall".

The central slide features the MQii logo and the text: "MALNUTRITION QUALITY IMPROVEMENT INITIATIVE".

Below the slide, the text reads: "Welcome to Today's Expert Webinar for the 2019 MQii Learning Collaborative: Optimization of the Electronic Health Record (EHR) for Nutrition Care". The date is "August 7, 2019". The start time is "We will get started promptly at 3:00PM ET (2:00PM CT; 1:00PM MT; 12:00PM PT)". A note in red text states: "All phone lines have been muted".

At the bottom, there is a blue banner with text: "The Malnutrition Quality Improvement Initiative (MQii) is a project of the Academy of Nutrition and Dietetics, Avalere Health, and other stakeholders who provided guidance and expertise through a collaborative partnership. Support provided by Abbott." The Cisco logo is in the bottom left corner. In the bottom right, there is a "Recorder" panel with a "Select button to record on server" and a "Connected" status indicator.

# Today's Agenda

Agenda Item	Presenter(s)
Welcome and introduction to the webinar	Kelsey Jones
One hospital's experience with electronic Clinical Quality Measures (eCQMs) capture: a description of structured data options in the nutrition care pathway	Cassandra Kight, PhD, RDN, CNSC, <i>Clinical Nutrition Specialist at University of Wisconsin Hospital &amp; Clinics</i>
The role of nutrition documentation in the EHR at a large health system: improving EHR nutrition documentation and data use	Curt Calder, MBA, RDN, <i>Clinical Informatics Analyst at Intermountain Healthcare</i>
Questions – 15 mins	



MALNUTRITION QUALITY  
IMPROVEMENT INITIATIVE



Cassandra Kight, PhD, RDN, CNSC  
Clinical Nutrition Specialist  
University of Wisconsin Hospital & Clinics

- Structured data to capture MQii data elements
- Data selected to map to electronic Clinical Quality Measures needs to be specific to the initial assessment in response to patient screening at risk
- Leaping to create “new” buttons can negatively impact current RDN workflows

# UW Health – University Hospital

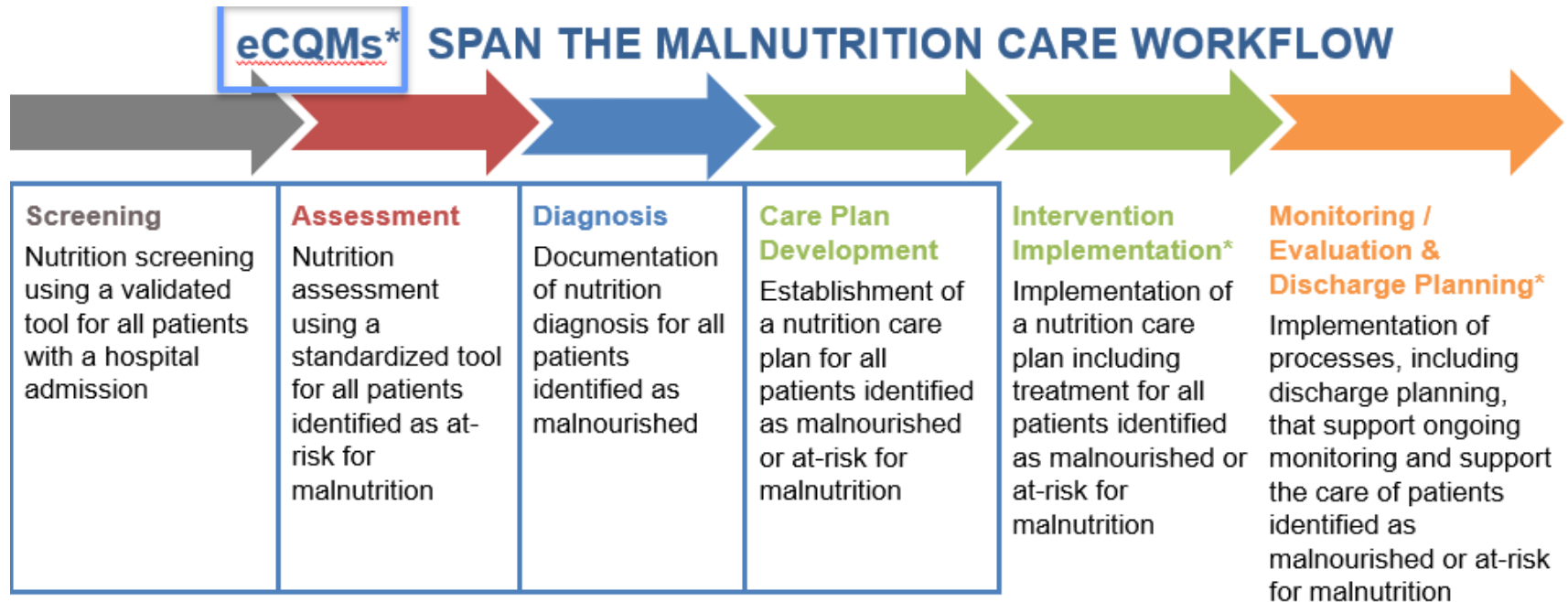
- Integrated health system of the University of Wisconsin-Madison serving more than 600,000 patients each year in the Upper Midwest and beyond
- UW Health includes University Hospital, a 505-bed regional referral center with a Level One trauma center, Burn Unit, one of the nation's largest organ transplant programs, certified comprehensive stroke center, and the UW Carbone Cancer Center



# Learning Objectives

- Describe structured data options for capture of steps in the nutrition care pathway
- Apply options for structured documentation to capture MQii electronic Clinical Quality Measures (eCQM)
- Describe factors to consider prior to selecting data elements for MQii

# Malnutrition Care Continuum



\*\*Electronic Clinical Quality Measure

# Electronic Health Records & Nutrition Care


- Everyone in health care uses an EHR to provide and document patient care
- *Nutrition clinicians* are health care disciplines who provide direct patient care that influences nutrition care
  - Physicians & Advanced Practice Providers
  - Pharmacists
  - Nurses
  - Dietitians
- Nutrition clinicians provide care in the inpatient, ambulatory and/or long-term health care setting



# Implementing MQii: Know Your Data

- MQii project team should understand the data structure of their software to optimally engage with teams who will extract the data to send to Avalere
- What data is stored in a way that can be retrieved into a data pull?
  - Date of birth: Yes
  - Diet history *typed* into a progress note: No

# Definition: Structured Data

- Resides in a fixed field and the response is stored in a database
- Can be easily retrieved into reports, flowsheets, graphs, and for data analysis
- Structured data is unambiguous, specific, defined, usually within allowed parameters
- Options for entering data include checkboxes, dropdown lists, buttons, and calculator fields
- Diagnoses, procedures, allergies, medications, etc. are selected from those available in a database
  - Other 

# Our MQii Project Path

- *Started* with data mapping
- Our Information Systems and Nursing Informatics team members had limited availability due to another major project in the organization
- Department management agreed to proceed knowing our new data build would be minimal

# eCQM1: Nutrition Screening

- Standardized and validated nutrition screening tools generate a score
- Screen score is structured data visible in flowsheet rows or Nutrition Navigator
- Nutrition screen score can trigger automatic notification or consults, be included in daily reports and patient lists, and be tracked for quality improvement and regulatory requirements

# eCQM2: Nutrition Assessment

- Nutrition assessment data includes medical/surgical/social history, procedures, imaging results, biochemical data, medications, food/nutrient intake, anthropometrics, & physical exam findings
- Incorporate structured nutrition assessment data into charting templates, where appropriate
- If data is captured in a structured format, it can be incorporated into clinical notes regardless of who entered the data

# Structured Nutrition Assessment Data: Examples

- Nutrition-focused Physical Exam: @NFPE@
- Nutrition Orders: @NUTPRINTGROUP@
- Lab data: {IPNUTRLABS:41795}
- Medications: {CLINICAL NUTRITION MEDICATIONS:3100015}
- Body Composition/Weight History:
  - @FLOWREFRESH(11:FIRST:):@
  - @FLOWREFRESH(312845:FIRST:):@
  - Admission @FLOWREFRESH(14:FIRST:):@ (\*\*\*)
  - @FLOWREFRESH(2000001:FIRST:):@
- Nutrition Goals: {CLINICAL NUTRITION GOAL(S):3100006}
- Severe Protein-Calorie Malnutrition (@FLOWREFRESH(385019::1):@)  
diagnosed based upon the following criteria:
- @FLOWREFRESH(385025,385028,385029,385032,385033::1):@

# eCQM2: Nutrition Assessment

- For MQii, which structured data element is unique whose response will capture the RDN completed an assessment in response to a positive nutrition risk screen?
- Diagnosis of malnutrition  $\neq$  Assessment performed
- Options include:
  - New button/flowsheet row for Nutrition Assessment
    - Need to think of impact on staff for change in workflow
  - Nutrition focused physical exam documentation
  - Structured data field specific to completion of an assessment we selected: eNCP Nutrition Diagnosis
    - **Nutrition Diagnosis:** @TD@: {NUTRITION DX:33276}
- Asking data analysts to look for a progress or consult note around the screen date would be arduous and non-specific

# Malnutrition Diagnosis

## Diagnosis of malnutrition has clinical and billing implications

- Nutrition care providers, the Nutrition Committee, clinical documentation specialists, and coders need to agree on the malnutrition criteria that all clinicians use
- Structured documentation of malnutrition can be shared among clinicians and incorporated into charting templates
- Structured malnutrition diagnosis allows it to be monitored over time, across health care settings. Malnutrition is rarely resolved within one encounter.



# Communication of the Malnutrition Diagnosis

- Between RDNs who diagnose malnutrition and medical providers responsible for documentation of the diagnosis
  - EHR alert using decision support tools (e.g. Best Practice Alert)
  - Attestation workflow
  - Creation of system-wide link to malnutrition diagnosis for charting
  - Document malnutrition plan of care
- Add malnutrition to the Problem List
  - Hospital may allow non-provider clinicians to document diagnoses that require interdisciplinary plan of care. Start a conversation if yours does not currently allow. Problem list diagnoses are not used for coding.
  - Allows the diagnosis to travel with the patient across health care settings

# eCQM3: Malnutrition Diagnosis Options

- eNCP Nutrition Diagnosis by RDN if facility captures
- Malnutrition diagnosis on the Problem List entered by providers or RDN
  - Problem list is not encounter specific
  - We have been adding malnutrition to the Problem List almost 4 years
- *Structured data entry of malnutrition diagnosis by RDN, separate from eNCP diagnosis*

# Communication of Diagnosis to Patient: Malnutrition Smart Phrase

**Severe Protein-Calorie Malnutrition (Chronic Illness)**  
diagnosed based upon the following criteria:

- Body Fat: Severe Depletion
- Muscle Mass: Severe Depletion
- Weight loss > 10% in 6 months

The diagnosis of malnutrition has been discussed with patient and \*\*\*. They verbalized understanding of the diagnosis and participated in development of the nutrition care plan. The interventions to address malnutrition are listed below.

# eCQM4: Care Plan Development

- Nutrition care plan includes structured interventions designed to help resolve the nutrition diagnosis
  - *Diet orders*\* entered and integrated with food and nutrition service management software
  - *Oral nutrition supplements*\*
  - *Enteral nutrition orders*\*\*
  - *Parenteral nutrition orders*\*\*\*
  - Medications (recommend only)
  - *Vitamin and mineral supplements*\*
  - Education
  - Coordination of nutrition care

\*All patients, delegation protocol

\*\*EN delegation protocol

\*\*\*PN delegation protocol, for Nutrition Support Service RDNs

# Challenges to Use of Structured Nutrition Interventions

- If I build it, they will come.... Maybe not...
- Many RDNs already used formatted Smart Phrases for their patient population's interventions
- Selection of structured Nutrition Interventions in the Nutrition Navigator was an extra step
- Compromise was to select Interventions in the Nutrition Navigator *for patients diagnosed with malnutrition, during MQii*

# MQii Data Mapping

## MQii Data Template

## Mapping for data analyst

<b>Readmission Index Admission During Implementation Period</b>	Record if the index admission is during the implementation period	Record yes if the index admission admit date and time for the readmission are within during the implementation period to be determined by the organization.	Numeric	CRDS
<b>Malnutrition Screening</b>	Document completed malnutrition screening using a screening tool	Record the presence of a completed screening	Numeric	Row ID 311622. Use Row ID 299002 if 311622 is blank.
<b>Malnutrition Screening Result</b>	Document result of the first of any malnutrition screening using a screening tool	Record risk screening result of the first of any malnutrition screening tools administered (At Risk=0; Not At Risk, Average Risk, or No Risk=1)	Numeric	Score 0-1 or Low Risk = No Risk (=1); Score 2 and higher or At Risk (=0)
<b>Time from Admission to Malnutrition Screening</b>	Calculate the time in hours between the date and time of admission to the inpatient unit and the date and time of the first of any malnutrition screening	Time in hours= Date/time of malnutrition screening- Date/time of inpatient admission; Example: Patient length of stay of 20 hours and 24 minutes would translate to 20.40	Numeric (Decimal format)	CRDS
<b>Nutrition Assessment</b>	Document completed nutrition assessment by registered dietitian	Record the presence of a completed nutrition assessment, completed by a registered dietitian	Numeric	Row ID 386342 or Row ID 386346 or Row ID 386350 or Row ID 386353
<b>Nutrition Assessment Results</b>	Document findings of malnutrition resulting from nutrition assessment	Record if the malnutrition assessment findings indicate malnutrition (Severely Malnourished, Moderately Malnourished, Not Malnourished)	Numeric	Row ID 385011 = Moderate malnutrition or Row ID 385007 = Severe Malnutrition. Blank entry for 385011 or 385007 = No Malnutrition
<b>Medical Diagnosis of Malnutrition</b>	Document malnutrition diagnosis in the patient medical record		Numeric	Problem List; Diagnoses E.44.0 or E43 or E46
<b>Intervention [+Intvxn Template Only]</b>	Document nutrition intervention prescribed to patient by registered dietitian	Record the type of nutrition intervention recommended to the patient by a registered dietitian resulting from a nutrition assessment (Meals and Snacks=0, Enteral Nutrition =1, Parenteral Nutrition=2, Oral Supplements=3, Feed Assistance=4, Food/Nutrition Related Med Mgt=5, Nutrition Education=6, Counseling=7, Care Coordination=8)	Numeric	Meals and snacks = Row ID 266831; Enteral Nutrition = 386364; Parenteral Nutrition = 386368; Oral supplements = 386363; Feed Assistance = 386362; Med mgnt = 386369 (Vits & Min) and 386370 (meds); Nutrition Education = 386372 & then 386378; Care Coordination = 386373.

# Monitoring & Evaluation

- Nutrition clinician assembles links to structured data to evaluate adequacy of nutrient intake, anthropometrics, physical exam findings, functional status, and biochemical data
- Re-assessment includes evaluation of prior nutrition diagnosis and revision of the nutrition care plan
- Malnutrition will likely not be resolved however the etiology of malnutrition may be improving. Incorporation of structured data such as nutrient intake, calorie counts, will allow this to be monitored going forward.

# Discharge Plan

- Transmission of nutrition diagnosis, anthropometrics, interventions and orders to the next setting
  - Typically by fax and/or printing of chart documentation
  - Create Nutrition Discharge summary template
- After Visit/Hospital Summaries – compilation of structured data
  - Nutrition Care Plan recommendations on these reports?
  - Nutrition Care Plan recommendations in discharge summary?
- Communication of malnutrition diagnosis to primary care provider by EHR In Basket messaging, fax, or letters



# Concluding Remarks

- It's never too early to start data mapping
- You are the expert who can translate required MQii data elements to data you capture in the nutrition care pathway
- Knowledge of the data elements needed for MQii will facilitate completion of the IRB application
- Creation of new data fields in EHR involves new steps in the RDN workflow. Are they on board? Perhaps they have better ideas? *Engage them in the conversation.*
- MQii implementation and data collection is a team effort



MALNUTRITION QUALITY  
IMPROVEMENT INITIATIVE



Curt Calder, MBA, RDN  
***Clinical Informatics Analyst***  
***Intermountain Healthcare***

- Intermountain EHR history and nutrition
- Key components of NCP in the EHR
- Nutrition documentation benefits/barriers in the EHR
- Opportunities to improve EHR nutrition documentation and data use

# Intermountain Healthcare

- Integrated health system
- 38,000 employees, 600 informatics staff, 2400 employed providers
- 23 hospitals, 185 clinics and urgent care facilities, 2900 licensed beds
- 137,000 acute admissions, 502,000 ER visits
- “Helping people live the healthiest lives possible”



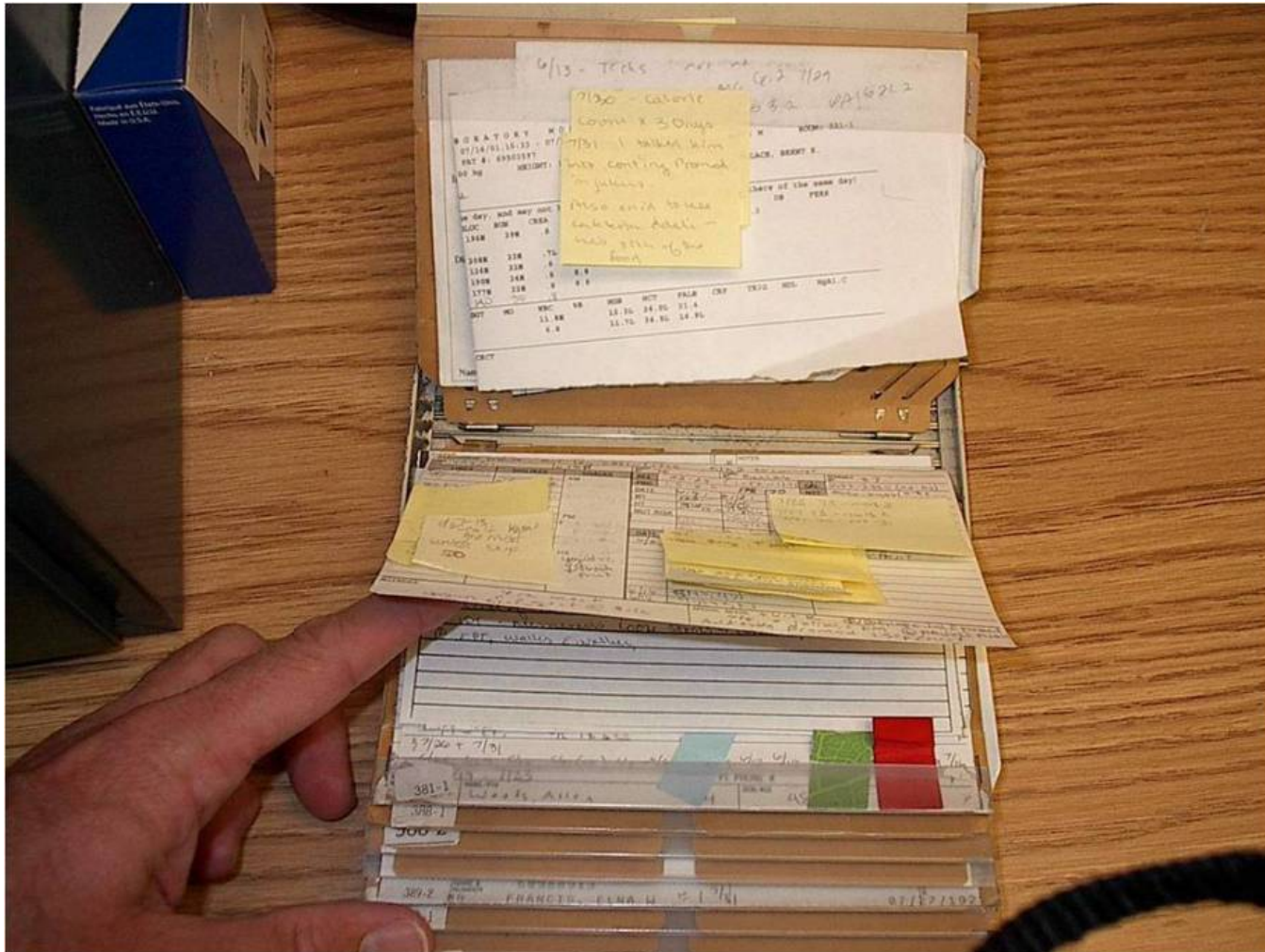
# Intermountain Healthcare – Systems Background

- Health Evaluation through Logical Processing (HELP) system
- Legacy EHR used from 1967 – 2017 (50 years)



# Intermountain Healthcare – Systems Background

- Legacy nutrition care record (paper cardex)



# Intermountain Healthcare – Systems Background

- NuCard – nutrition EMR interfaced with Intermountain data repository.

Welcome **Curt Calder** Normal Mode Logout Feedback



Nutrition Cardex Time Tracking Administration

Nutrition Cardex

\*\*\*\*\* Demo Mode \*\*\*\*\*

EMPI:

Account #:

Unit: MED

Room: 5102

Sex: M

Age: 53Y

Nutrition Cardex

- Main
- Multi-Entry
- Care Plan ▶
- Tasks
- Documentation ▶
- Screenings
- Calorie Counts
- Estimated Needs
- Preferences
- History
- Other Charting
- Reports ▶

Admit Diagnosis ABDOMINAL PAIN/ILEUS

Admit Date 09/29/2010 Discharge Date Privacy Status

Birth Date \*\*\*\*\* Language English Religion

Admitting Provider \*\*\*\*\* Demo Mode \*\*\*\*\*

Weight(Kg / lb) 63.78 / 140.61 Height(cm / in) 170.2 / 67.01 BMI 22.02 IBW 67.2 IBW% 95

Risk Level 09/29/2010, 3

Food Allergies None

Current Diet Clear Liquid

Supplements

Significant Labs

History	»
Additional Data - Assessment	»
Estimated Needs	»
Current Medical Problems	»
Assessment	»
Diagnosis	»
Goals	»
Interventions	»
Monitoring and Evaluation	»
Nutrition Recommendations	»
Caregiver Notes	»

# Intermountain Healthcare – Systems Background



Malnutrition Cardex   Time Tracking   Administration
Nutrition Cardex

\*\*\*\*\* Demo Mode \*\*\*\*\*   EMPI:   Account #:   Unit: MONC   Room: W301A   Sex: M   Age: 73Y

**Main**

**Multi-Entry**

Care Plan ▶

**Tasks**

Documentation ▶

Screenings

Calorie Counts

Estimated Needs

Preferences

History

Other Charting

Reports ▶

Other Encounters

**Admit Diagnosis** SEPSIS UTI HYPERKALCEMIA

**Admit Date** 10/18/2010   **Discharge Date**   **Privacy Status**  
**Birth Date** \*\*\*\*\*   **Language** English   **Religion**  
**Admitting Provider** \*\*\*\*\* Demo Mode \*\*\*\*\*

**Weight(Kg / lb)** 86.4 / 190.48   **Height(cm / in)** 170.2 / 67.01   **BMI** 29.83   **IBW** 67.2   **IBW%** 129  
**Risk Level** 10/21/2010, 3  
**Food Allergies** None  
**Current Diet** Dysphagia Advanced (chopped),Low Sodium 2g; Tube Feedings,Nepro,Full Strength,Rate:20  
**Supplements**  
**Significant Labs**

<b>Alb 2.2 L</b> (10/28/2010 04:00) <input type="checkbox"/>	<b>BUN 37.0 H</b> (10/28/2010 04:00) <input type="checkbox"/>	<b>Creat 1.21 H</b> (10/28/2010 04:00) <input type="checkbox"/>
<b>Glu 195.0 H</b> (10/28/2010 04:00) <input type="checkbox"/>	<b>Glu 209.0 H</b> (10/27/2010 03:49) <input type="checkbox"/>	<b>Glu 240.0 H</b> (10/26/2010 06:00) <input type="checkbox"/>
<b>Glu 262.0 H</b> (10/25/2010 05:15) <input type="checkbox"/>	<b>Glu 344.0 H</b> (10/24/2010 05:46) <input type="checkbox"/>	<b>Palb 13.3 L</b> (10/24/2010 05:46) <input type="checkbox"/>
<b>Glu 329.0 H</b> (10/23/2010 03:30) <input type="checkbox"/>	<b>K 3.4 L</b> (10/23/2010 03:30) <input type="checkbox"/>	<b>HgbA1C 9.8 H</b> (10/18/2010 23:40) <input type="checkbox"/>

**History (2 items)** «

Type	Description
Medical	diabetes (insulin), HTN, neurological, snoring, stomach, bowel, foot ulcers, MRSA, hx of tobacco (10-21-10)
Nutrition	Diabetic (10-21-10)

**Additional Data - Assessment** »

**Estimated Needs (1 item)** «

Type	Calories		Protein		Fluid		Based On	User	When
	Kcals	Kcals/kg	gm	gm/kg	ml	ml/kg			
Enteral	1700-2125	20-25	67-80	1.0-1.2			ABW-85kg kcals IBW-67kg protein		10/21/2010 11:34

**Current Medical Problems** »

**Assessment (3 items)** «

Date	Description	Entered By
10/28/2010	Patient remains at an increased nutritional risk with wound healing needs, elevated glucose and variable po intake since tube feeding was d/c'd on 10/25. Decreased prealbumin suggests inadequate visceral protein stores. HgbA1C indicates inadequate glucose control. Patient willing to accept Boost Diabetic bid. He feels current diet is too high in sodium and the texture is too finely ground, but his appetite is improving. Noted increase in Lantus. Tighter glucose control required to promote wound healing.	



# Intermountain Healthcare – Systems Background

10/23/2010	Pt. continues on Nepro @ 40ml/hr via DHT @ goal of 40ml/hr to provide 960ml, 1728 kcals, 77gm protein, and 696ml/H2O. This is meeting pt. estimated needs currently but will have a prealbumin drawn to assess needs further. Pt. is waking up and is pulling @ this tube. Speech tx is to be coming to evaluate later.
10/19/2010	Pt. is admitted with sepsis, possible shock, and hyperosmolar coma. Pt. is not responding @ this time so a feeding tube currently being placed. Suggest Nepro @ 40ml/hr via DHT @ goal of 40ml/hr to provide 960ml, 1728 kcals, 77gm protein, and 696ml/H2O. Pt. LFT's and renal status hsa improved some per MD notes.

## Diagnosis (2 items) «

Diagnosis	Entered	Entered By
Inadequate protein-energy intake related to physiological causes increasing nutrient needs due to disease/condition (wound healing) as evidenced by low prealbumin, variable po intake	10/28/2010	
Altered nutrition-related laboratory values related to diabetes and ARF as evidenced by elevated glucose, A1C, BUN/Creat.	10/19/2010	

## Goals (1 item) «

Date	Status	Description	Entered By
10/19/2010	Active	Improve labs Tolerate TF Return to oral diet.	

## Interventions (2 items) «

Status	Description	Entered	Entered By
Active	Diabetic Chocolate Boost bid at 2pm, 7pm	10/28/2010	
Active	Reduced sodium, NDD3 diet texture per patient request	10/28/2010	

## Monitoring and Evaluation (3 items) «

Date	Description	Entered By
10/28/2010	Monitor glucose/renal labs/prealbumin Encourage/monitor % po intake Follow up chart q 5 days	
10/23/2010	Glutamine 1 packet per day Omega 3 Arginine 4 packet per day renal MVI	
10/19/2010	F/U 5-7 days or PRN Enteral nutrition protocol	



# Intermountain Healthcare – Systems Background

## Monitoring and Evaluation (3 items) «

Date	Description	Entered By
10/28/2010	Monitor glucose/renal labs/prealbumin Encourage/monitor % po intake Follow up chart q 5 days	
10/23/2010	Glutamine 1 packet per day Omega 3 Arginine 4 packet per day renal MVI	
10/19/2010	F/U 5-7 days or PRN Enteral nutrition protocol	

## Nutrition Recommendations (2 items) «

Status	Description	Entered	Entered By
Active	Suggest diabetic education consult (Tight glucose control for wound healing) Change diet to Reduced sodium, NDD3 per patient request	10/28/2010 09:34	
Active	Nepro @ 40ml/hr via DHT @ goal of 40ml/hr to provide 960ml, 1728 kcals, 77gm protein, and 696ml/H2O. Start @ 20 ml/hr and advance every 6hrs by 10ml/hr.	10/19/2010 16:21	

## Caregiver Notes (5 items) «

Date	Description	Entered By
10/28/2010	TF d/c'd on 10/25. ~ 50% oral intake since then. Per speech note pt did not eat much at lunch yesterday due to consistency (she suggested change to NDD3), but he did better at dinner. Visited with patient, wants a "less salt, more palatable/chopped meat ok" menu. Asked HUC to change to NDD3, 2 gm Na. Willing to accept diabetic Boost bid between meals. cht'd L3/fu	
10/26/2010	Per TF report, pt on Nepro @ 20 ml/hr; also on NDD2 diet. ja	
10/23/2010	Cht-L3-DH	
10/21/2010	Pt. was started on TF of Nepro and is now @ goal with good tolerance. Pt. has omega 3, nephronex MVI, glutamine 1 packet per day, Arginine 4 packets per day. -dH	
10/19/2010	Cht-cp/L3-DH	

# Intermountain Healthcare – Systems Background



Nutrition Cardex Time Tracking Administration

## Manage Terminology

### Diagnosis

#### Domains

Behavioral - Environmental  
Clinical  
Intake →

Add Domain

#### Classes

Bioactive Substance  
Energy Balance  
Fluid Intake  
Nutrient →  
Oral or Nutrition Support Intake

Add Class

#### Terms

Decreased nutrient needs  
Imbalance of nutrients  
Inadequate protein-energy intake  
Increased nutrient needs  
Malnutrition

Add Term

#### SubClasses

Carbohydrate and Fiber  
Fat and Cholesterol  
Mineral →  
Multi-nutrient  
Protein  
Vitamin

Add SubClass

#### Terms

Excessive Calcium intake  
Excessive Chloride intake  
Excessive Iron intake  
Excessive Magnesium intake  
Excessive Phosphorus intake  
Excessive Potassium intake  
Excessive Sodium intake  
Excessive Zinc intake  
Excessive mineral intake - other  
Inadequate Calcium intake  
Inadequate Chloride intake  
Inadequate Iron intake  
Inadequate Magnesium intake  
Inadequate Phosphorus intake  
Inadequate Potassium intake  
Inadequate Sodium intake  
Inadequate Zinc intake  
Inadequate mineral intake - other

Add Term

#### SubClasses

Add SubClass

# Intermountain Healthcare – Systems Background

**Add PES**

Search for Problem:    
Search for Etiology:

**Problem**  
Inadequate vitamin intake - other  
Inadequate protein-energy intake  
Inadequate mineral intake - other  
Inadequate fluid intake  
Inadequate fiber intake  
Inadequate fat intake  
Inadequate enteral nutrition infusion  
Inadequate energy intake  
Inadequate carbohydrate intake  
Inadequate bioactive substance intake

**Etiology**  
None Selected

**Signs and Symptoms**  
None Selected

**Add PES**

Search for Problem:    
Search for Etiology:

**Problem**  
Excessive bioactive substance intake

View Option:

**Etiology**  
alteration in GI function  
food and nutrition knowledge deficit  
frequent intake of foods containing bioa  
lack of, or limited access to safe and/or

**Signs and Symptoms**

# Intermountain Healthcare – Systems Background

- NuCard – nutrition EMR interfaced with Intermountain data repository.
- Implemented 2001 with clinical and productivity functions.
- Used in 22 hospitals and in ambulatory setting.
- Productivity function still used.
- Clinical function replaced in 2017 by new EHR (iCentra).

# Intermountain Healthcare – Today

ONE INTEGRATED SYSTEM. ONE NAME.

## iCentra

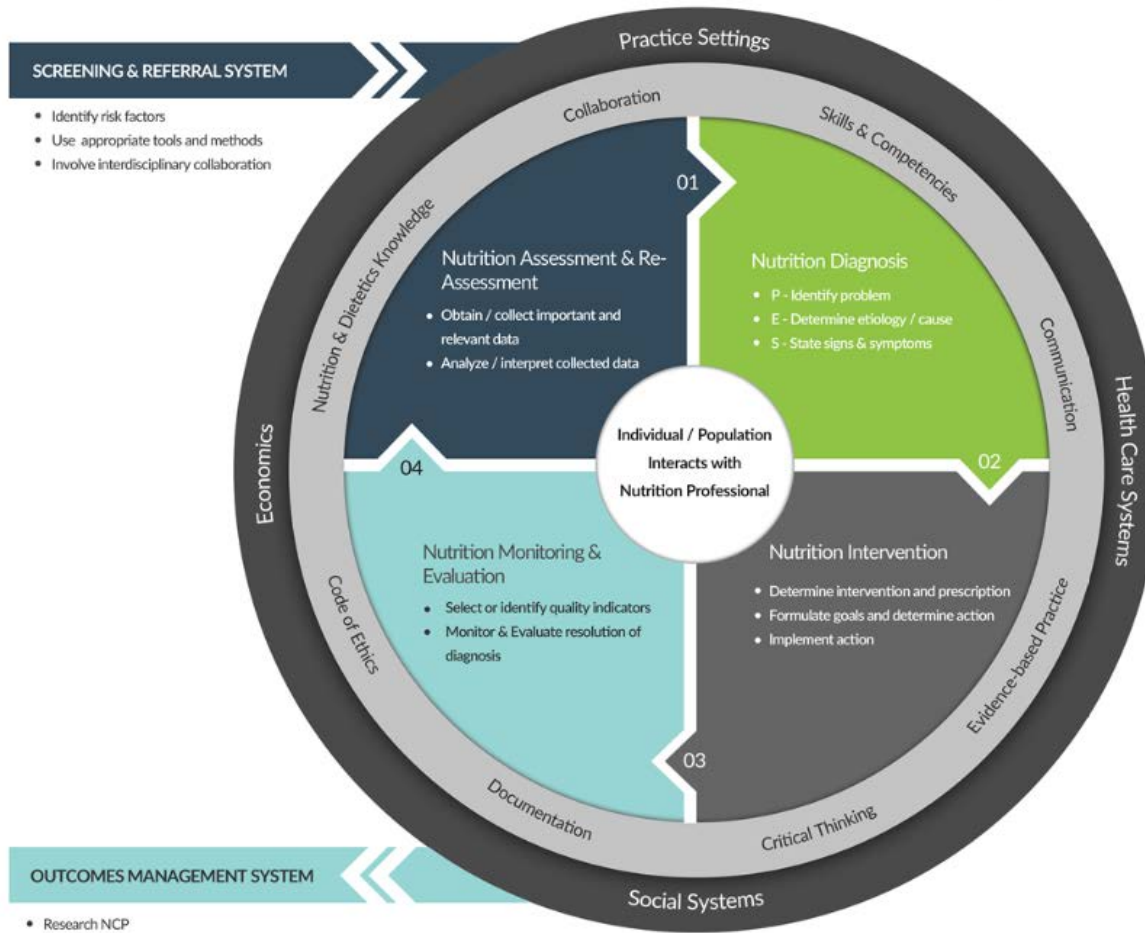
The “i” represents the intelligent system our teams are configuring to help caregivers and business teams continuously improve how we care for patients. The “i” is also the role we all play in this important work.

Centra – or center – signifies the patient, who is at the center of everything we do. By having one integrated system, we are better able to influence best practices and remove unnecessary variations in care.



# Evolution of Nutrition Care

## THE NUTRITION CARE PROCESS MODEL



# Evolution of Nutrition Care

- 1970-1986 – early Nutrition Care Models
- 2003 – Nutrition Care Model (NCM) and Process (NCP)
- 2007 – International Dietetics and Nutrition Terminology (IDNT)
- 2014 – Nutrition Care Process Terminology (NCPT)
- 2015 – NCM updated

## Key Components of NCP in the EHR (ADIME)

**A**ssessment

**D**iagnosis

**I**ntervention

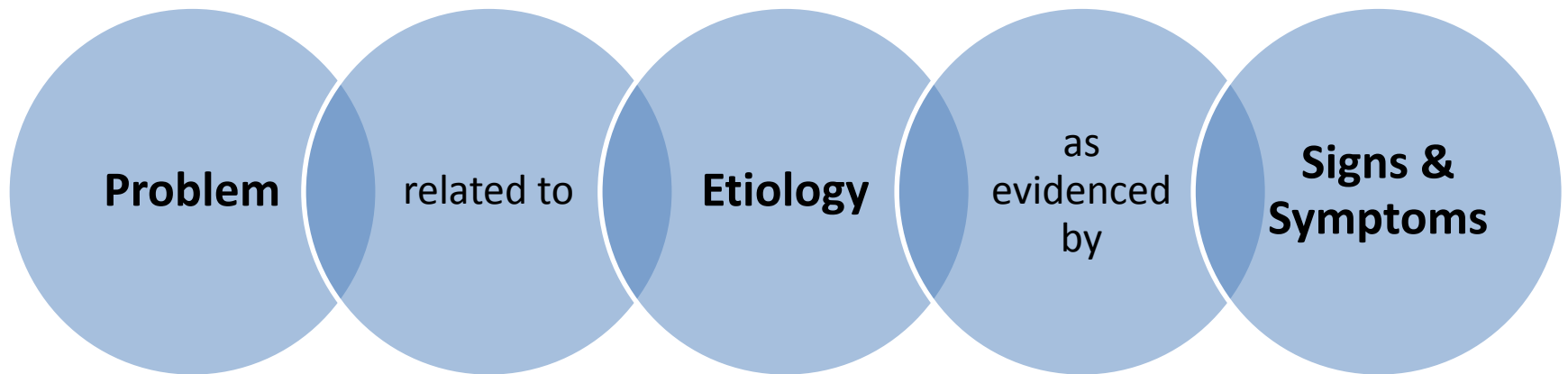
**M**onitoring &  
**E**valuation



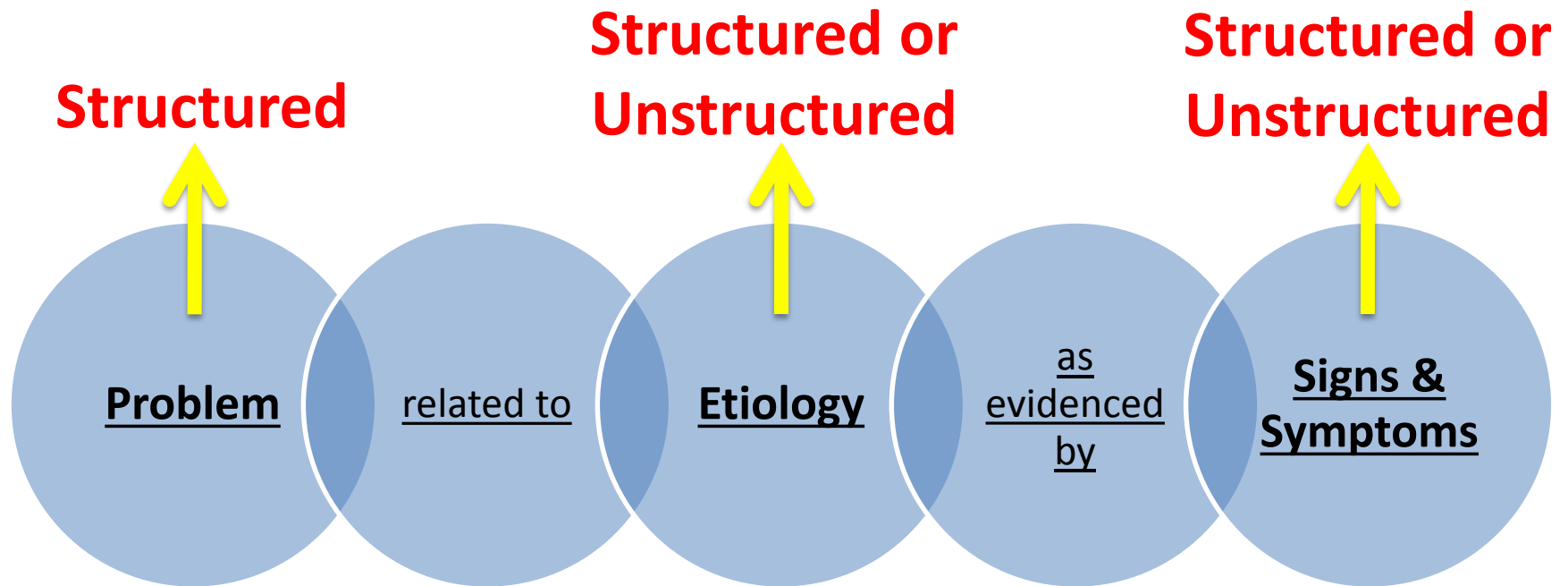
# Key Components of NCP in the EHR - Assessment

- Based on training, experience, practice guidelines, protocols, etc.
- Systematic review of patient data:
  - Histories and medical problems
  - Nutrition and GI history
  - Labs
  - Vitals
  - Anthropometrics
  - Medications
  - Age and cultural factors
  - Other
- Nutrition-Focused Physical Exam

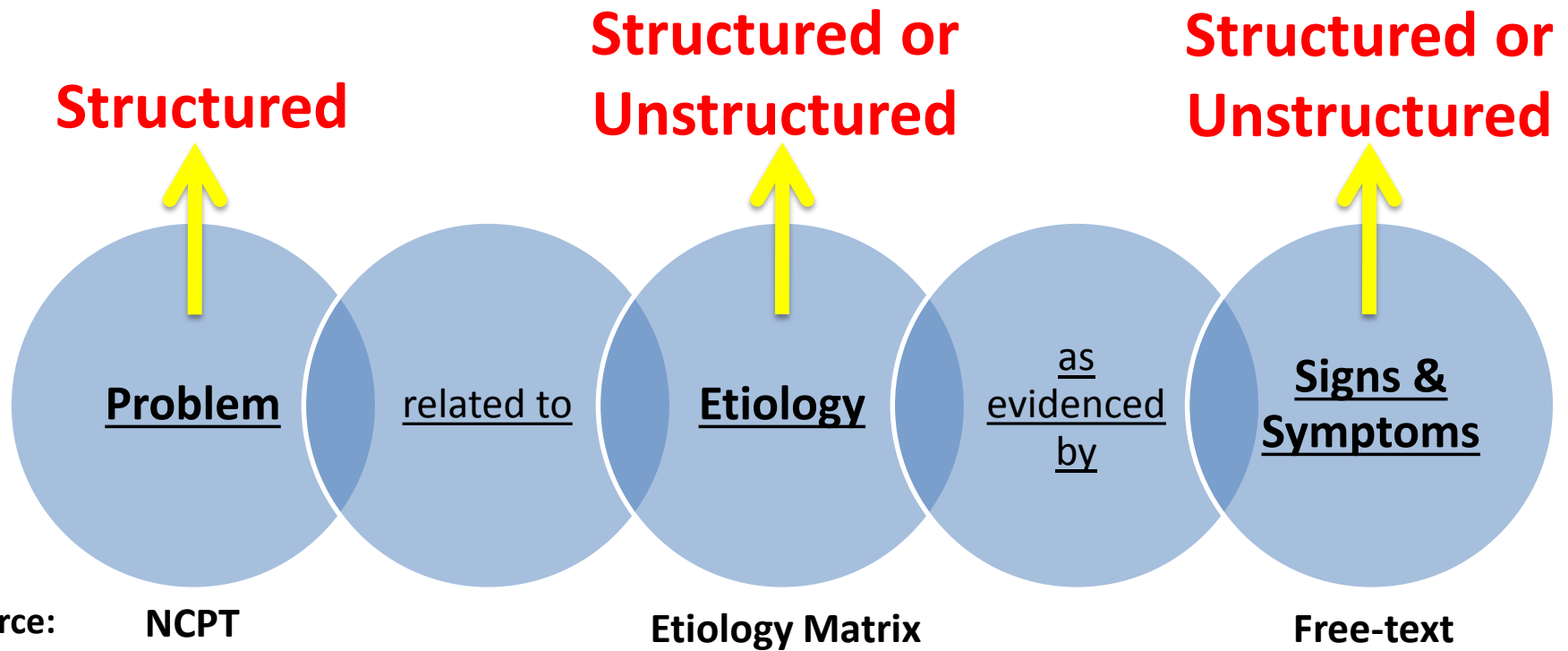
# Key Components of NCP in the EHR - Diagnosis



# Key Components of NCP in the EHR - Diagnosis



# Key Components of NCP in the EHR - Diagnosis



# EHR Nutrition Documentation Benefits

- Shared information between all disciplines
- Decision support efficiencies
- Templated quick notes
- Customization/enhancement (TF, TPN)
- **OUTCOMES TRACKING**

# EHR Nutrition Documentation Barriers

- EHR may have more of a physician, nursing or other focus.
- Is all nutrition assessment data available to the dietitian?
- Flowsheets vs. forms
- Can you customize/enhance the system for nutrition?
- How does the system handle nutrition support orders, management and documentation?

# The Good, The Bad and the Ugly



# The Good, ~~The Bad~~ and the Ugly

- Dietitians “playing in the same sandbox” with all other disciplines.
- NCPT integrated into the EHR.
- Documentation template that pulls in appropriate charted data.
- Nutrition problem automatically populates the patient problem list.
- Configurable workflow page/view that walks dietitian through their work.
- Results and most data quickly available.
- Intermountain developers team that works with Cerner to create specialized functionality specific to Intermountain needs (e.g. nutrition support nutrient calculator pending).



# The Good, ~~The Bad~~ and the Ugly

Diagnosis

- + Energy Balance
- Oral or Nutrition Support Intake
  - Inadequate oral intake
  - Excessive oral intake
  - Inadequate enteral nutrition infusion
  - Excessive enteral nutrition infusion
  - Enteral nutrition composition inconsistent with needs
  - Enteral nutrition administration inconsistent with needs
  - Inadequate parenteral nutrition infusion
  - Excessive parenteral nutrition infusion
  - Parenteral nutrition composition inconsistent with needs
  - Parenteral nutrition administration inconsistent with needs
  - Limited food acceptance
- + Fluid Intake
- + Bioactive Substances, Inadequate Intake
- + Bioactive Substances, Excessive Intake
- + Nutrient
- + Fat and Cholesterol
- + Protein

Inadequate Oral Intake

- Cultural/religious practices that affect ability to get food
- Decreased ability to consume sufficient energy, nutrients
- Food/nutrition knowledge deficit about food variety
- Increased nutrient needs due to catabolic illness
- Lack of, or limited access to food or artificial nutrition
- Limited food acceptance
- Psychological causes, depression
- Psychological causes, disordered eating
- Unsupported beliefs/attitudes about food/nutrition
- Other

△ PES

- △ <Problem #1>
- ◇ Diagnosis
- ◇ Inadequate Oral Intake
- ◇ As Evidenced by

daughter report of patient intake PTA

# The Good, ~~The Bad~~ and the Ugly

The screenshot shows a software window titled 'Intervention' with a list of categories. The 'Commercial beverage' option is checked and highlighted in blue. Other categories include Meals and Snacks, Enteral Nutrition, Parenteral Nutrition/IV Fluids, Medical Food Supplement Therapy, Vitamin and Mineral Supplement Therapy, Bioactive Substance Management, Feeding Assistance, Manage Feeding Environment, Nutrition-Related Medication Management, Nutrition Education - Content, Nutrition Education - Application, Theoretical Basis/Approach, Strategies, and Collaboration and Referral of Nutrition Care.

Interventions	
Intervention	
Intervention	Commercial beverage
Status	Complete
Comment	Oral supplement (Boost Plus) with meals

## ~~The Good, The Bad and the Ugly~~

- Current EHR a step back from earlier system.
- System slows based on very complex platform.
- As with most clients, inability to “turn the ship” very quickly if at all.
- Frequent changes to the system based on Cerner global strategies and changing technology.
- Nutrition outcomes not tied to interventions and goals.

# ~~The Good, The Bad and~~ **the Ugly**

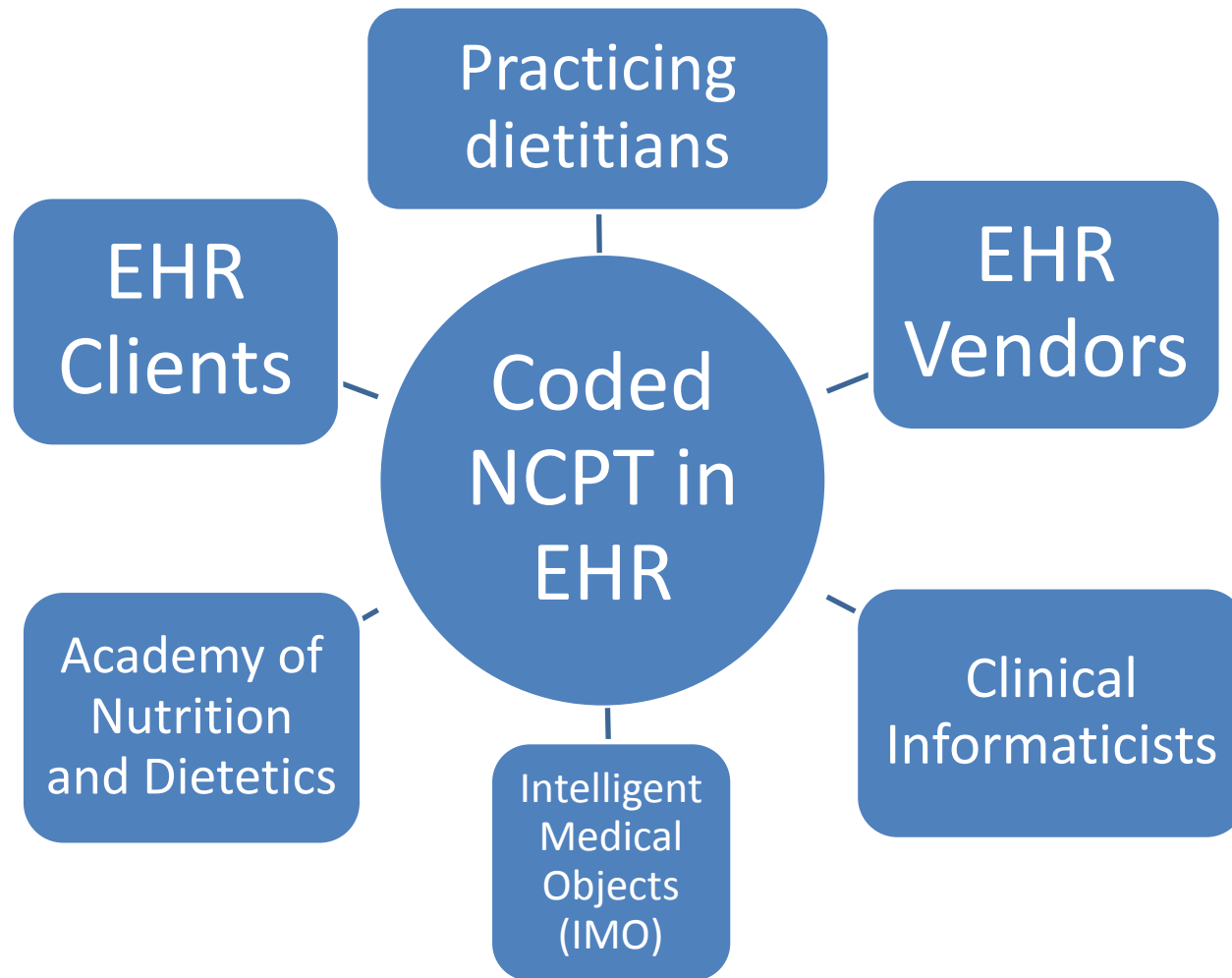
- True interoperability does not exist despite significant efforts over a long period.
  - 2004: Office of the National Coordinator (ONC)
  - 2009: Health Information Technology for Economic and Clinical Health (HITECH) Act and American Recovery and Reinvestment Act (ARRA).
  - 2015: Medicare Access and CHIP Reauthorization Act (MACRA)
  - 2016: 21<sup>st</sup> Century Cures Act
  - 2019: Health and Human Services (HHS), Centers for Medicare and Medicaid Services (CMS) and ONC renew interoperability efforts.
  - 2019: Ban on national patient identifier reversed by House of Representatives.
  
- Nutrition data not coded in most EHRs.

~~The Good, The Bad and~~ **the Ugly**

Coding of NCPT in SNOMED  
and LOINC is a great  
accomplishment, but:

coding  $\neq$  coded EHR NCPT

# EHR Nutrition Documentation Opportunity - Collaboration



# Questions?



15 mins