

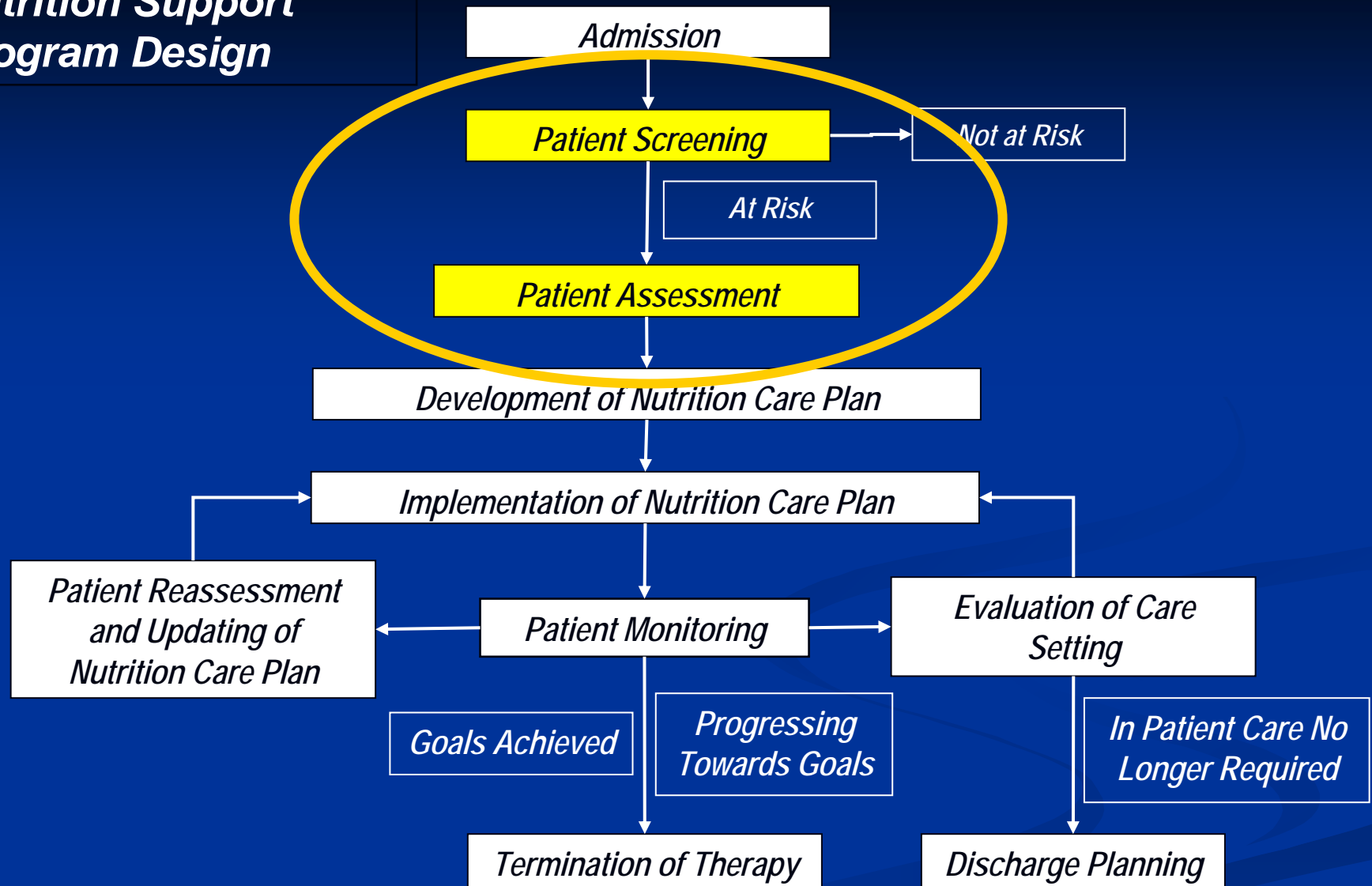
# ***Nutrition screening and assessment***

*Description and presentation of tools  
used*

# Objectives

- *To describe the purpose of doing nutrition screening and assessment*
- *To differentiate between nutrition screening and assessment*
- *To show the different tools of nutrition screening and assessment*

# Nutrition Support Program Design



# *Standard of care*

- *Criteria shall be established for identification of patients who are nutritionally-at-risk by an initial screening mechanism.*
- *This will determine the need for assessment of the patient's nutrition status.*
- *All patients admitted to the hospital for a specified length of stay shall undergo a nutrition screening process using subjective and/or objective criteria.*
- *Reference:*
  - *JCAHO Board of Directors, 1995 Comprehensive Accreditation Manual for Hospitals. JCAHO, Oakbrook, IL 1994.*

# ***Nutrition screening***

- *Identify patients who are at risk of:*
  - *Developing nutrition related complications*
  - *Getting more malnourished during hospital stay*
- *Characteristics:*
  - *Simple*
  - *Rapidly done*
  - *Covers the whole patient population*
- *Ultimate goal: nutrition management prioritization of patients*

# ***Nutritional Assessment***

- *Usually done on patients identified to be nutritionally at risk by the screening process*
- *More in-depth nutritional evaluation of the patient nutritional status*
  - *Collect and evaluate clinical conditions, diet, body composition and biochemical data, among others*
  - *Classify patients by nutritional state: well-nourished or malnourished*
- *Determines the severity of malnutrition*

# *Difference between Nutrition Screening and Assessment*

## ■ *Screening*

- *Immediate*
- *Minimum measurements*
- *Least expense*
- *Information: concise*

## ■ *Assessment*

- *Longer time*
- *More measurements done*
- *A bit more expensive*
- *Information: more in-depth*

# *Different tools for nutrition screening and assessment*

- *Nutrition screening*
  - *Nutrition Risk Screening 2002 (NRS 2002)\**
  - *Mini Nutritional Assessment (MNA)\**
- *Nutritional assessment*
  - *Subjective Global Assessment*
  - *Physical Examination*
  - *Laboratory Examination*

*\* Kondrup J, Allison SP, Elia M, Plauth M. ESPEN guidelines for nutrition screening 2002. Clin Nutr 2003; 22(4): 415-21.*



# How to detect malnutrition



Height and weight taken from regularly calibrated instruments

- **Body Mass Index**
  - $<18.5$       *underweight*
  - $18.5 - 24.9$       *normal*
  - $25 - 29.9$       *overweight*
  - $30+$       *obese*
- **Severe weight loss**
  - $>5\%$       *in 1 month*
  - $>7.5\%$       *in 3 months*
  - $>10\%$       *in 6 months*
- **Mid Arm Circumference**
  - *Male:*       $<17.6$  cm
  - *Female:*       $<17.1$  cm

# ***Nutrition screening tool: NRS 2002***

<b>STEP 1 - Initial Screening</b>		
<b>Questions</b>	<b>Yes</b>	<b>No</b>
<ul style="list-style-type: none"><li>• <b>Is BMI &lt; 20.5?</b></li></ul>		
<ul style="list-style-type: none"><li>• <b>Has the patient lost weight within the last three (3) months?</b></li></ul>		
<ul style="list-style-type: none"><li>• <b>Did the patient have a reduced dietary intake in the last week?</b></li></ul>		
<ul style="list-style-type: none"><li>• <b>Is the patient severely ill (e.g. in intensive therapy)?</b></li></ul>		
<input type="checkbox"/> <b>Current Status: No nutritional risk</b>		
<input type="checkbox"/> <b>If YES to any question go to STEP 2</b>		

# ***Nutrition screening tool: NRS 2002***

<b>STEP 2 – Final Screening</b>		
<b>Nutritional Status indicators (choose one only)</b>	<b>Score</b>	<b>Place score if YES</b>
<ul style="list-style-type: none"> <li>• <b>Normal nutritional status</b></li> </ul>	<b>0</b>	
<ul style="list-style-type: none"> <li>• <b>Weight loss &gt; 5% in 3 months / or food intake below 50-75% of normal requirement in preceding week</b></li> </ul>	<b>1</b>	
<ul style="list-style-type: none"> <li>• <b>Weight loss &gt; 5% in 2 months / or BMI 18.5-20.5 + impaired general condition / or food intake 25-60% or normal requirement in preceding week</b></li> </ul>	<b>2</b>	
<ul style="list-style-type: none"> <li>• <b>Weight loss &gt; 5% in one month ( or &gt; 15% in 3 months) / or BMI &lt; 18.5 + impaired general condition / or food intake 0-25% of normal requirement in preceding week</b></li> </ul>	<b>3</b>	
<b>Clinical condition (may choose more than one)</b>		
<ul style="list-style-type: none"> <li>• <b>Hip fracture chronic patients, in particular with acute complications; cirrhosis, COPD, chronic hemodialysis, diabetes, oncology</b></li> </ul>	<b>1</b>	
<ul style="list-style-type: none"> <li>• <b>Major abdominal surgery, stroke, severe pneumonia, hematologic malignancy</b></li> </ul>	<b>2</b>	
<ul style="list-style-type: none"> <li>• <b>Head injury, bone marrow transplantation, intensive care patients (APACHE &gt; 10)</b></li> </ul>	<b>3</b>	
<b>Total Score</b>		

# ***Nutrition screening tool: NRS 2002***

## **ACTION TO BE TAKEN**

- Total score  $\geq 3$ : The patient is nutritionally at risk and a nutritional care plan is initiated**
- Total score  $< 3$ : Weekly rescreening of the patient / If the patient is scheduled for a major operation a preventive nutrition care plan is considered to avoid associated risk status**



St. Luke's  
Medical Center

# NUTRISTAT - ADULTS

Room No:   
 File No:   
 Date:

Attending MD:

Patient Name:

Age:   
 Sex: Male   
 Female

**NUTRITIONAL STATUS**

NORMAL

OBESE

OVERWEIGHT

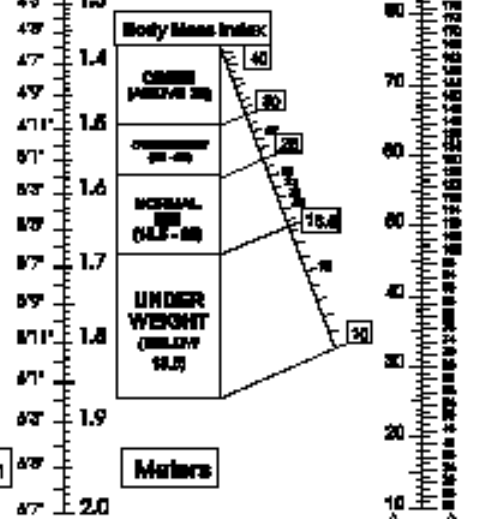
UNDERWEIGHT

Weight Can't be taken - Please Refer to the Nutrition Support Team

Based on the  
Recommendations  
of FIPA, NDAF, &  
NACO

**IDEAL BMI**  
 Males = 22  
 Females = 21

Weight   
 Height   
 BMI



FLIn      Meters

HEIGHT

Kg.      Lbs.

WEIGHT

**BMI - Nomogram**  
**BODY MASS INDEX FOR FILIPINOS**

© UNO

To get the BMI plot the HEIGHT and the WEIGHT and connect them with a straight line using a ruler. The point where they intersect in the reference line (center) is the BMI value of the patient.

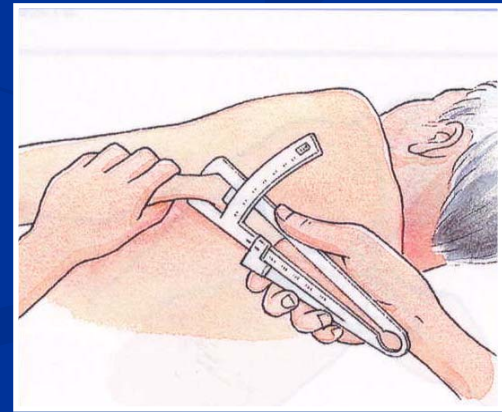
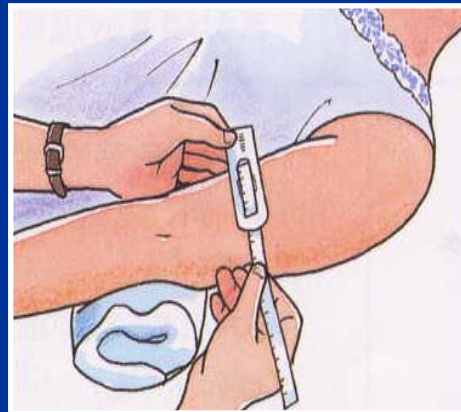
For Malnourished Patients Only:  
 Dear Doctor,

Your patient is initially found to be malnourished. Would you like to have him/her further evaluated by the Nutrition Support Team?

YES     NO    Performed By:     Sign:

# *Nutritional Assessment: Body composition data*

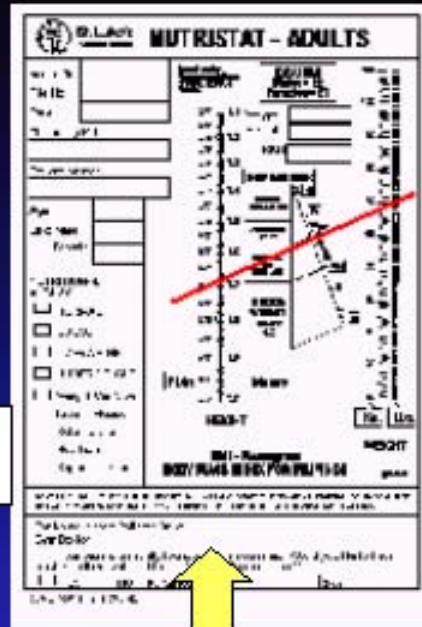
- *Weight and height*
  - *BMI = weight / height<sup>2</sup>*
- *Triceps or subscapular thickness of skin fold*
- *Mid-arm muscle circumference and mid-arm muscle area*



# Nutrition management process

## 1. Nutrition screening

Goes to the BMI nomogram in the patient's chart



- Height (meters)
- Weight (kg)



Unit secretary encodes the data

Encoded data goes to the Nutrition database system – BMI is generated



### Body Mass Index (BMI)

- <18.5 underweight
- 18.5 – 24.9 normal
- 25 – 29.9 overweight
- 30 – 34.9 obese 1
- 35 – 39.9 obese 2
- 40+ obese 3

# *Nutritional assessment: laboratory data*

<i>Test</i>	<i>At Risk Level</i>
■ <i>Serum albumin</i>	<i>&lt; 3 gm%</i>
■ <i>Total Lymphocyte Count</i>	<i>&lt;1500</i>
■ <i>Serum cholesterol</i>	<i>&lt; 150 mg/dL</i>
■ <i>Serum transferrin</i>	<i>&lt;140 mg/dL</i>
■ <i>Serum pre-albumin</i>	<i>&lt; 17 mg/dL</i>
■ <i>Total iron-binding capacity</i>	<i>&lt; 250 mcg/dL</i>



# ***Nutritional assessment: clinical Subjective Global Assessment***

- 1. Weight changes*
- 2. Changes in dietary intake*
- 3. Gastrointestinal symptoms*
- 4. Functional capacity*
- 5. Link between disease and nutritional requirements*
- 6. Physical exam focused on nutritional aspects*

# *Subjective Global Assessment: Diagnosis*

- *A: Well-nourished*
- *B: Moderately malnourished or suspected malnutrition*
- *C: Severely malnourished*

# Nutritional Assessment Form

LAST NAME		ROOM	
FIRST NAME		DATE ADMITTED	
MIDDLE NAME		AGE	
ATTENDING MD		SEX	
HEIGHT_MTR	<input type="text"/>	WEIGHT_KG	<input type="text"/>
		BMI	<input type="text"/> OB <input type="checkbox"/> LW <input type="checkbox"/>
DIAGNOSIS	<input type="text"/>		

CRITERIA	NORMAL / MILD	MODERATE	SEVERE
Weight Loss	none <input type="radio"/>	< 10% of usual wt. <input type="radio"/>	>10% of usual weight <input type="radio"/>
Food Intake (last 1-2 months)	no change <input type="radio"/>	suboptimal <input type="radio"/>	starvation <input type="radio"/>
Gastro symptoms > 2 weeks	none <input type="radio"/>	nausea, vomiting <input type="radio"/>	anorexia diarrhea, severe <input type="radio"/>
Functional capacity	no change <input type="radio"/>	• dysfunction < 3 wks • suboptimal work • bedridden < 2 wks <input type="radio"/>	bedridden > 2 wks <input type="radio"/>
Disease and relation to nutritional requirements	no or low stress <input type="radio"/>	moderate stress <input type="radio"/>	severe stress <input type="radio"/>
Physical examination	0 subcutaneous fat and/or muscle loss <input type="radio"/>	+1 to +2 subcutaneous fat and/or muscle loss <input type="radio"/>	+3 subcutaneous fat and/or muscle loss <input type="radio"/>
Edema / ascites	none <input type="radio"/>	none <input type="radio"/>	+1 or +2 <input type="radio"/>
SGA Grade <input type="radio"/>	A 0 <input type="checkbox"/>	B 1 <input type="checkbox"/>	C 3 <input type="checkbox"/>
BMI	18.5 - 25 0 <input type="checkbox"/>	25.1 - 30 1 <input type="checkbox"/>	<18.5 or >30 2 <input type="checkbox"/>
Albumin g/dL	>3.4 0 <input type="checkbox"/>	2.5 - 3.4 1 <input type="checkbox"/>	<2.5 2 <input type="checkbox"/>
TLC	≥ 1500 0 <input type="checkbox"/>	900 <1500 1 <input type="checkbox"/>	<900 2 <input type="checkbox"/>
TOTAL SCORE <input type="text"/>	NUTRITION RISK LEVEL	0 <input type="checkbox"/> 1-2 <input type="checkbox"/>	LOW RISK (Level 1) ≥3 <input type="checkbox"/> HIGH RISK (Level 3) <input type="checkbox"/> MODERATE RISK (Level 2) <input type="checkbox"/>

NUTRITIONAL STATUS:  NORMAL  MODERATE MALNUTRITION  SEVERE MALNUTRITION

RISK LEVEL 1 or 2, WOULD YOU LIKE TO REFER YOUR PATIENT TO THE NUTRITION SUPPORT TEAM FOR FOLLOW UP?  YES  NO

Name and Signature of ATTENDING MD

Date Signed

RISK LEVEL 3: REQUIRED TO BE FOLLOWED UP BY THE NUTRITION SUPPORT TEAM

Assessment performed by (Name/Signature):

# *Who is severely malnourished?*

- *Weight loss > 10%*
- *Poor intake for 2 weeks or more*
- *BMI <18.5*
- *Mid-Arm Circumference:*
  - *Male < 17.6 cm, Female < 17.1 cm*
- *Subjective Global Assessment: SGA “C”*
- *Mini-Nutritional Assessment score: <25*
- *Albumin on entry < 3 gm%*
- *Total lymphocyte count < 1500*