

Prevalence of malnutrition in the hospital

*Implications of malnutrition and how to
manage the problem*

Objectives of the presentation

- *To define malnutrition*
- *To present the problem of malnutrition in the hospital*
- *To present the consequences of malnutrition in patient care and impact of nutrition care*
- *To present the nutrition support process*

What is malnutrition?

- *Deficiency or excess in nutrition reserves of the body which would affect:*
 - *Body composition*
 - *Functions of daily living*
- *Nutrition components affected are:*
 - *Macronutrients (Protein, fat, carbohydrates)*
 - *Micronutrients (Electrolytes, vitamins, trace elements)*
- *Manifestations:*
 - *Undernutrition*
 - *Overnutrition*

Malnutrition exists in every hospital: international

<i>Year</i>	<i>Author</i>	<i>Location</i>	<i>Prevalence</i>
1974	<i>Bistran</i>	<i>US</i>	<i>50%</i>
1977	<i>Hill</i>	<i>England</i>	<i>44%</i>
1979	<i>Weinsier</i>	<i>US</i>	<i>48%</i>
1984	<i>Agradi</i>	<i>Italy</i>	<i>34%</i>
1993	<i>Larsson</i>	<i>Sweden</i>	<i>27%</i>
1994	<i>McWhirter</i>	<i>Scotland</i>	<i>40%</i>
1995	<i>Fernando</i>	<i>Philippines</i>	<i>48%</i>
1997	<i>Waitzberg</i>	<i>Brazil</i>	<i>47%</i>

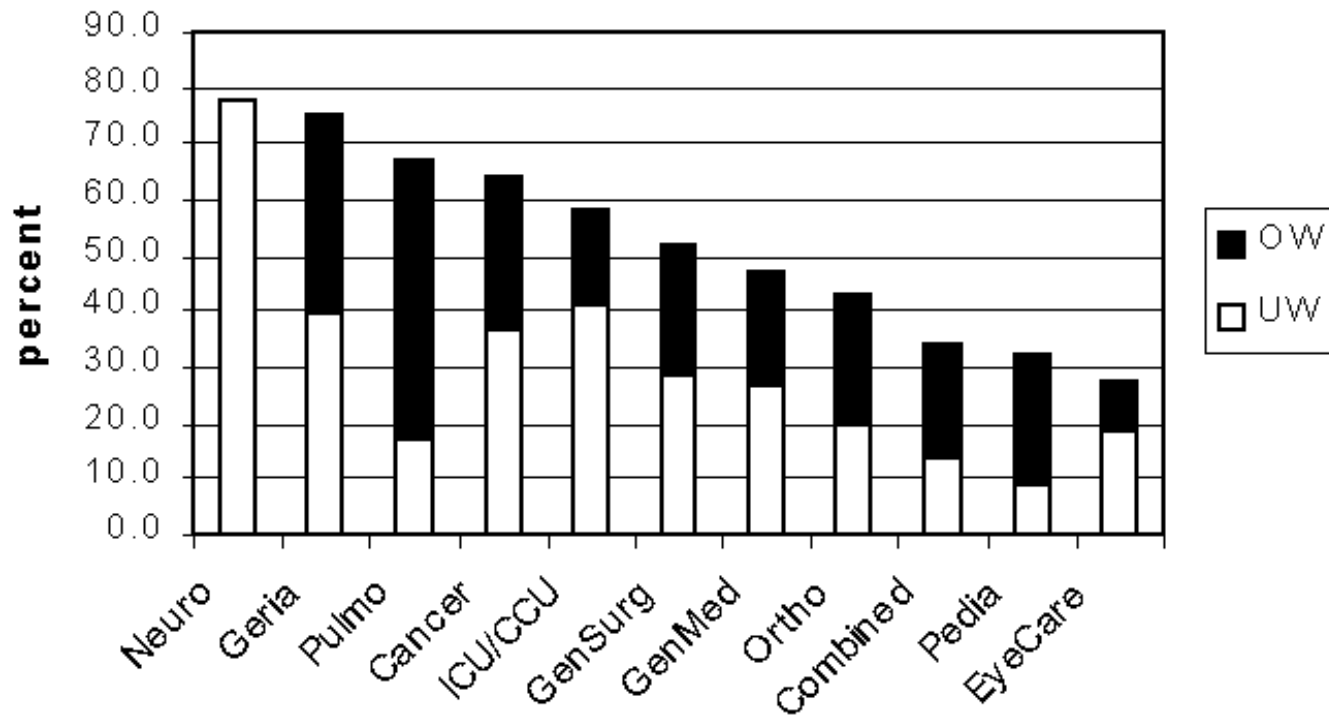
Malnutrition exists in every hospital: local (Philippines)

<i>Hospital</i>	<i>BMI < 18.5</i>	<i>BMI > 30</i>	<i>SGA "C"</i>
<i>Marikina, Rizal</i>	<i>38%</i>	<i>15%</i>	<i>-</i>
<i>Lipa City, Batangas</i>	<i>48%</i>		<i>-</i>
<i>Quezon City</i>	<i>22%</i>	<i>20%</i>	<i>-</i>
<i>Manila</i>	<i>-</i>	<i>-</i>	<i>42%</i>

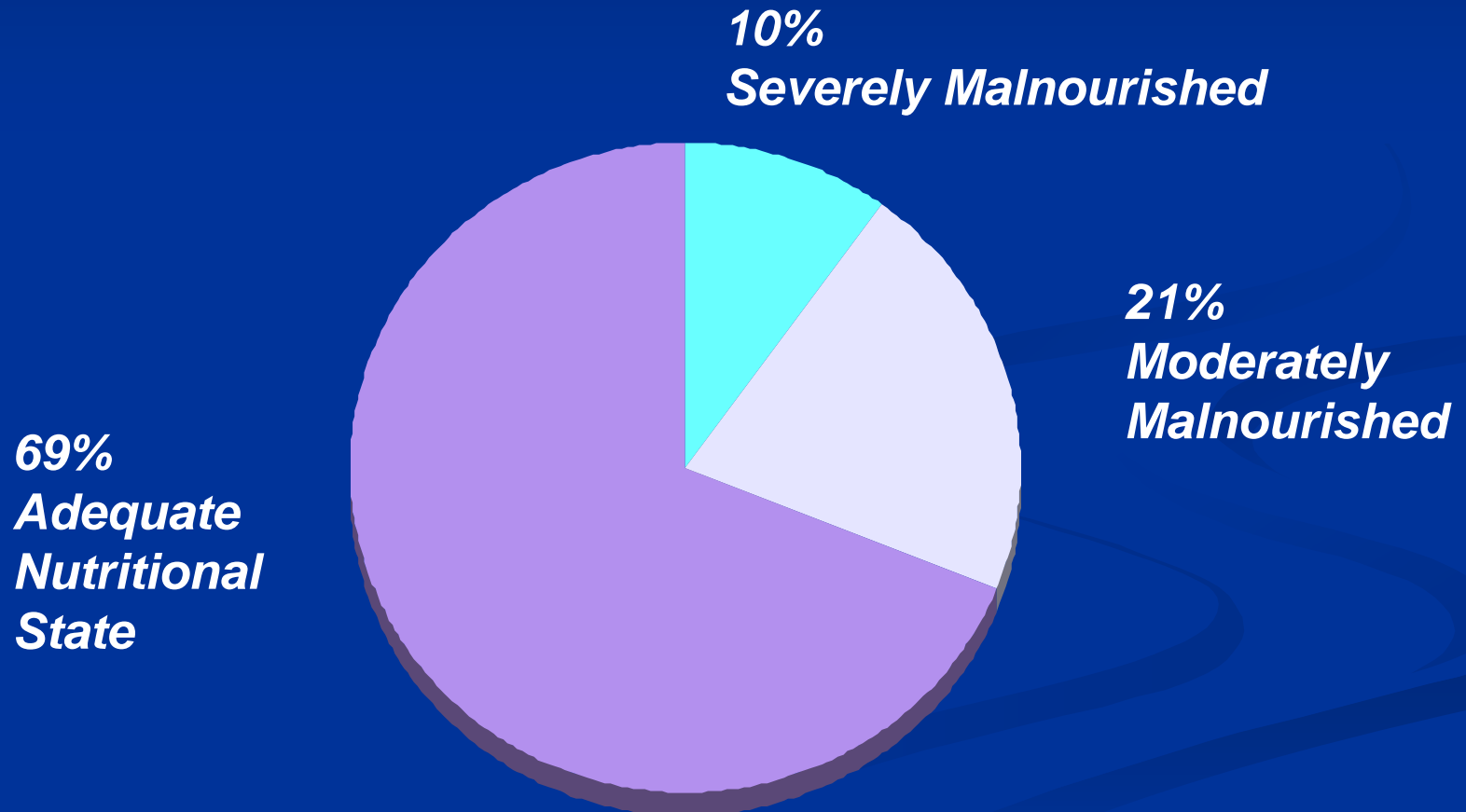
- *Amang Rodriguez Medical Center (n = 61)*
- *Mary Mediatrix Medical Center (n = 2,345)*
- *St. Luke's Medical Center (n = 41,676)*
- *Philippine General Hospital (n = 151)*

Malnutrition exists in every hospital: one center – all units

**Malnutrition in the units - St. Luke's Medical Center
1995**



Types of malnutrition in hospitalized patients



Detsky AS et al. JPEN J Parenter Enteral Nutr 1987; 440-446.

Is it easy to perform a prevalence of malnutrition study?



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How the first prevalence of malnutrition was done (St. Luke's)

- *Project involved 25 people*
 - *6 dietitians (hospital staff)*
 - *10 volunteer dietitians (from a school of nutrition)*
 - *5 physicians*
 - *4 nurses*
- *Tools used*
 - *Body mass index*
 - *Serum albumin*
 - *Clinical examination – “eyeballing” the patient*
- *Project completed in three (3) weeks*

Hospital malnutrition: St. Luke's data

1995

48%

- Neuro 78%
- Geriatric 75%
- Pulmonary 67%
- Cancer 64%
- ICU 58%
- Surgical 52%
- Medical 47%
- Orthopedic 43%
- Pediatric 32%

1998

34%

- Cancer 53%
- Pulmonary 52%
- Orthopedic 48%
- Pediatric 38%
- Medical 36%
- Neuro 30%
- ICU 27%
- Surgical 25%
- Geriatric 21%

BMI, clinical exam, albumin (25 people: 5 phys, 6 ClinDn, 10 volDn, 4 nurses; 3 weeks)

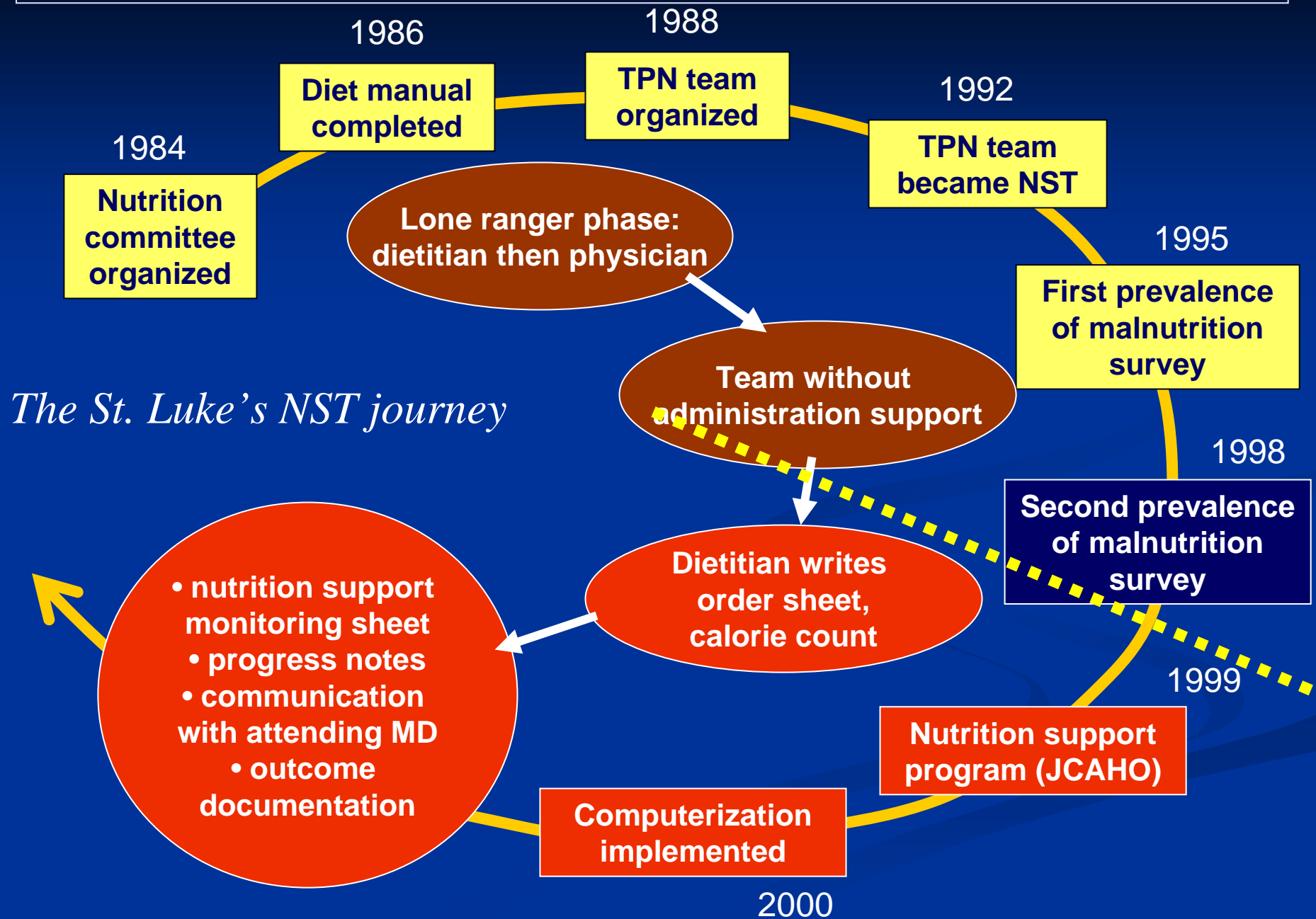
BMI (15 people, 3 days)

Malnutrition = UW, OW w/ BMI >27, OB

Conclusion and realization

- *Performing a prevalence of malnutrition is not easy using the usual tools*
- *Prevalence determination has to be completed within the expected time frame – 24 hours*
- *Approaches:*
 - *Computerize the process*
 - *Perform in small groups one at a time, then combine the data expressed in percentages*
 - *Use sampling from all representative areas*

Prevalence of malnutrition influences NST development



The tools for prevalence determination



- *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*



St. Luke's
Medical Center

NUTRISTAT - ADULTS

Room No:

File No:

Date:

Attending MD:

Patient Name:

Age:

Sex: Male

Female

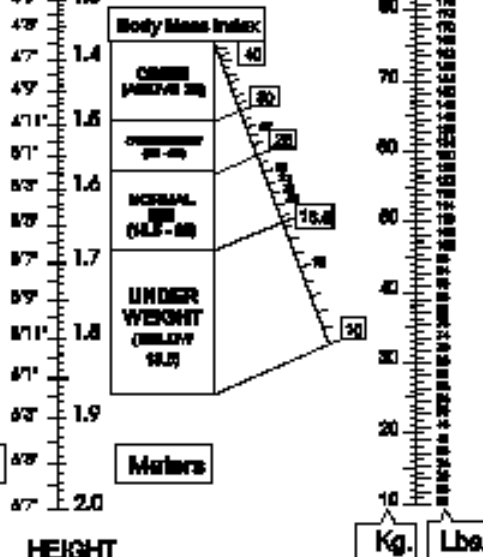
NUTRITIONAL STATUS

- NORMAL
- OBESE
- OVERWEIGHT
- UNDERWEIGHT
- Weight Can't be taken - Please Refer to the Nutrition Support Team

Based on the
Recommendations
of WHO, NDAF, &
FAO

IDEAL BMI
Males = 22
Females = 21

Weight
Height
BMI



BMI - Nomogram
BODY MASS INDEX FOR FILIPINOS

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:

Nutrition screening tool: NRS 2002

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

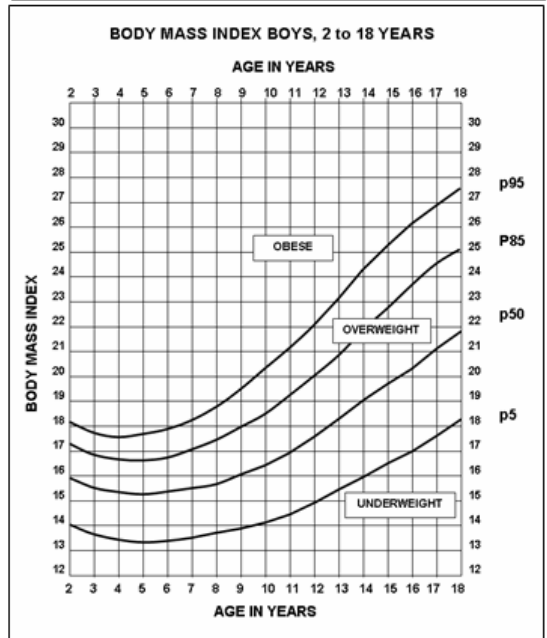
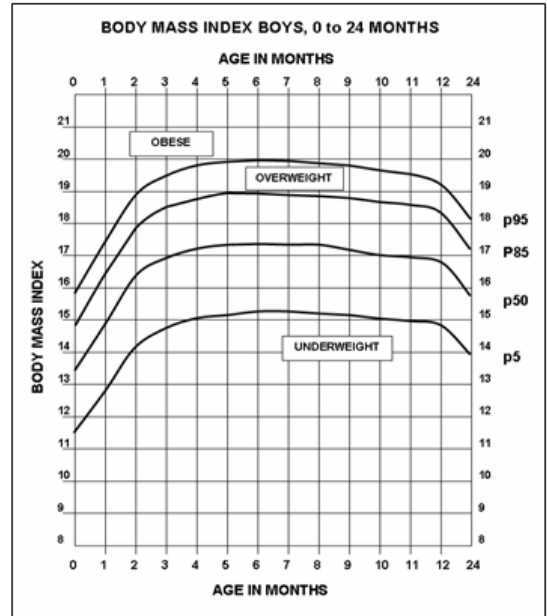
Pediatric nutrition screening forms

Body Mass Index based Nutrition Screening Pediatric Patients (Boys)

File Number	
PIN	
Room Number	
Family Name	
First Name	
Middle Name	
Age	
Sex	
Attending MD	
Date of Admission	

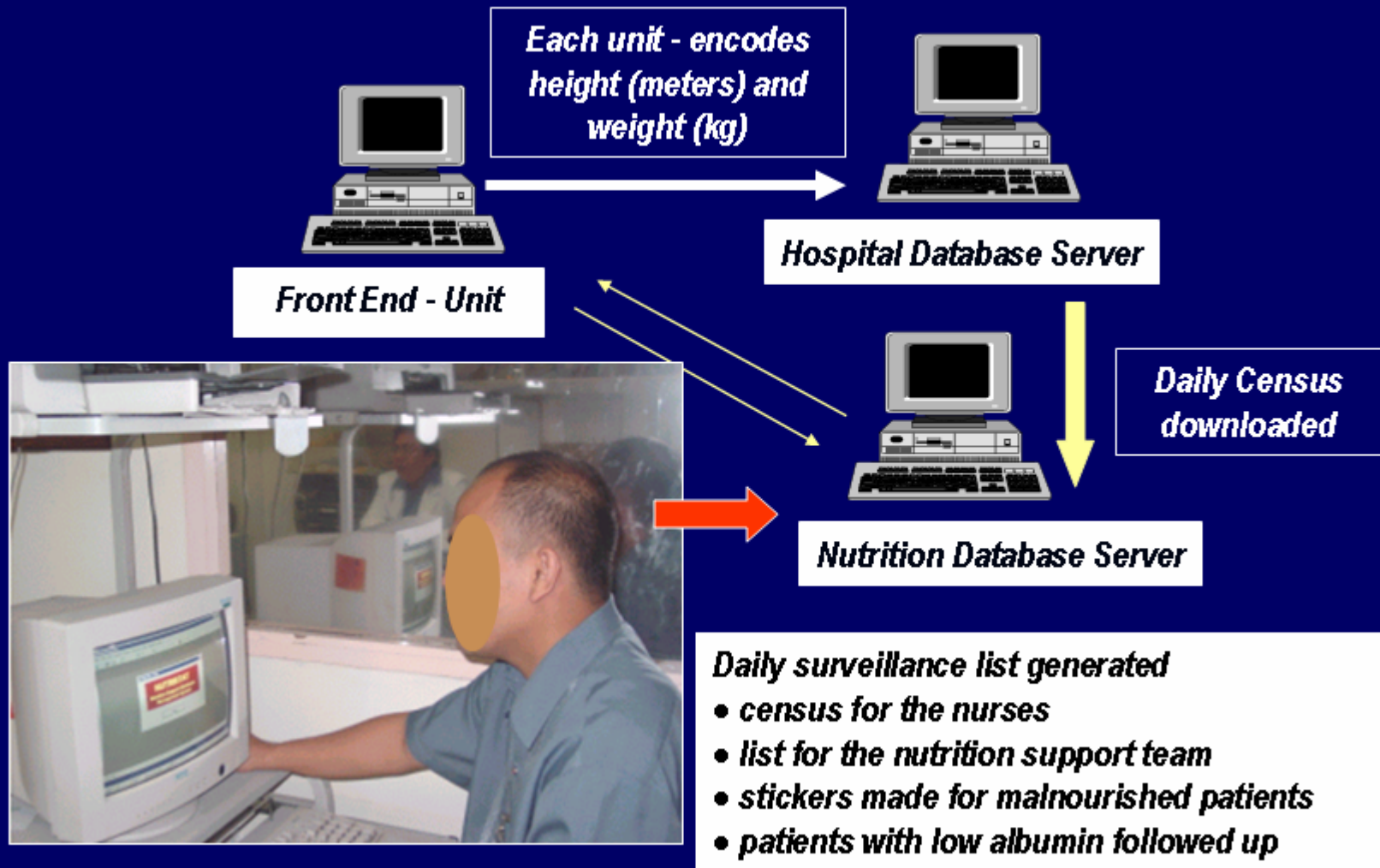
HEIGHT (meters)	
WEIGHT (kg)	
BMI (Body Mass Index)	

NUTRITIONAL STATUS (Please Check)	
UNDERWEIGHT	
NORMAL	
OVERWEIGHT	
OBESE	
COMMENTS:	
Done By:	



Reference: WHO Child Growth Standards; Interpretation: Underweight: < P5 / Overweight: between P85 and P95 / Obese: > P95 (http://www.who.int/childgrowth/standards/bmi_for_age/en/index.html) accessed 9/9/07

Computerization



Is prevalence of malnutrition doable?

Nutrition Surveillance for the Day

Survey Date:

Unit	Census	NCR (normal)	LW (underwgt)	OW (overwgt)	OB (obese)	No Wt or Ht	Wrong Entry
Acute Stroke Unit	2				1	1	
Annex 2 First	32	6	1	8	6	8	
Annex 2 Third	32	7		6	6	12	1
Orthopedic Unit	19	6	1	3	2	6	
Annex 2 Fourth	18	6	2	4	1	4	1
CVU 2	26	11	1	6	2	4	
Medical	22	8	3	2	3	6	
ICU	8	5	1	1		1	
CVU 3	15	4	1	6		5	
Neuroscience In critical	18	9		2	1	1	
Pediatrics	24	9	4	3	7	1	
Second Floor	15	5		3	1	3	
Telemetry	11	8		2		1	
Eye Care Unit	20	6	2	6	3		
Pulmonary Care Unit	19	9		6		6	
Maternity Unit	27	12		4	1	2	
Cancer Extension	29	12		3	6	7	
Geriatric Centre	18	11	2	2	1	2	
Cancer Centre	17	7		4	2	1	
Surgical Unit	29	13	2	7	3	4	
CCU	8	4	1	2		1	
CVU 1	19	9		6	3	1	
BMT	1	1					
TOTAL	424	168	21	82	47	75	2
	Percent of Total	40	5	19	11	18	0

Conclusion

- *Malnutrition exists in all institutions*
- *Prevalence of malnutrition determination is not easy – you need to be innovative*