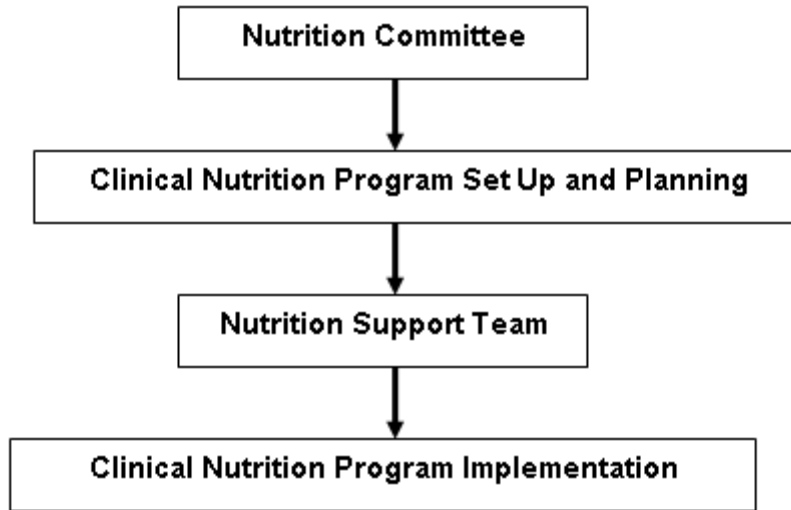


CLINICAL NUTRITION PROGRAM SET UP



Policy on the Nutrition Committee:

1. General policy: The Nutrition Committee shall be created to develop programs and formulate policies on all aspects of hospital based nutrition care delivery for the purpose of providing optimum nutrition care to each patient. It shall also collect data, aggregate, analyze and make recommendations towards further improvement in the total care of patients. The medical director shall appoint its members with concurrence of the board of trustees.
2. Specific Policies
 1. Composition:
 - i. Chairman – directly appointed by the medical director
 - ii. Medical Staff Members - representatives from the different departments and institutes of the institution chosen by the chairman of the nutrition committee and approved by the medical director with concurrence of the board of trustees.
 - iii. Administrative Staff Members - chosen by the involved administrative sections of the hospital as follows:
 1. Dietitian
 2. Pharmacist
 3. Nurse
 4. Medical Records representative
 5. Social Services department
 2. Major functions:
 - i. Maintenance of committee structure
 - ii. Development of protocols, policies, and procedures
 - iii. Development of forms and systems of management
 - iv. Continuing nutrition management education
 - v. Quality assurance
3. Details of functions:
 1. Maintenance of committee structure:

- i. To meet at least once a year to update the membership and to address policy changes or additions.
 - ii. Any changes in member composition or delineation of work assignments shall be approved by the Medical Director before they are to take effect.
 - 2. Development of protocols, policies, procedures:
 - i. Shall formulate policies and guidelines on hospital diets:
 - 1. General diets – contents, preparation, and delivery to the patient
 - 2. Special or disease specific diets – review and update of current hospital and clinical practices regarding diets of patients with special condition or disease states.
 - 3. Publish a DIET MANUAL and keep it updated on a regular time frame (i.e. every two years).
 - ii. To recommend methods of updating and upgrading diet preparations and nutrition management systems for the benefit of the hospital staff and patients.
 - iii. To recommend improvements to the nutrition service in terms of procedure, personnel, facilities, and approach to clinical nutrition management.
 - 3. Development of forms and systems of management:
 - i. Shall develop new approaches to nutrition management as needed or as required by new developments in the field of nutrition.
 - 4. Continuing nutrition management education:
 - i. Shall maintain continuing nutrition-related education for all members of the hospital, medical or non-medical through:
 - 1. Hospital based nutrition support protocols and management orientation to incoming interns, residents, and fellows.
 - 2. Post-graduate courses and seminars
 - ii. Researches on food preparation methods, compounding, clinical application of such manipulations as well as innovations on service or nutrition delivery (e.g. enteral and parenteral nutrition).
 - iii. Workshops on nutrition care delivery
 - iv. Periodically publish papers or handouts for patients, doctors, and the general public regarding experiences in nutrition management from diet preparation and delivery to nutrition care management (e.g. malnutrition surveillance)
 - 5. Quality Assurance
 - i. To review its policies and procedures and revise these when needed to assure optimal standards of care. Meetings shall be held every six months or annually as needed.
 - ii. To review performance of nutrition care, patient outcome data, cost of services, and report its findings and recommendations. The review also assesses the appropriateness and effectiveness of the administration of specialized nutrition support for individual patients.
 - iii. To meet regularly (monthly, quarterly, or annually) for summary of activities and special case reports.
- 4. Implementation:
 - 1. The implementing arm of the Nutrition Committee for its nutrition support services programs shall be the Nutrition Support Team.
 - 2. All memos and guidelines shall be submitted and approved by the medical director and if deemed necessary by the medical director, by the president and CEO for final approval and implementation.

Policy on the Nutrition Support Team:

1. General Policy: The Nutrition Committee shall organize a Nutrition Support Team, which shall be the overall implementing arm of the clinical nutrition program. Nutrition support programs shall be formulated for all hospital admitted patients identified to be at risk of developing malnutrition and for those patients needing full nutrition support including enteral and parenteral nutrition. The Nutrition Committee shall identify the persons, departments, institutes, and centers, which shall be involved in the programs.
2. Specific Policies:
 - a. The Nutrition Support Team shall be multidisciplinary in nature, composed of representatives from the different departments, institutes, and centers of the hospital.
 - b. The head of the Nutrition Support Team shall come from any of its members, as appointed by the head of the Nutrition Committee or as selected by the Nutrition Support Team members. He or she may not be the head of the Nutrition Committee.
 - c. The members of the Nutrition Support Team will be as follows:
 - i. Physicians – specialists in clinical nutrition or has the minimum credentials for practicing clinical nutrition
 - ii. Dietitian – clinical dietitians
 - iii. Nurses – with training or exposure in clinical nutrition practice
 - iv. Pharmacists – with training or exposure in clinical nutrition
 - d. The functions and responsibilities of the Nutrition Support Team shall be as follows:
 - i. To implement the general policies on nutrition care outlined by the Nutrition Committee.
 - ii. To act as the main body that shall facilitate the formulation of specific policies and procedures for total nutrition care, including the provision of parenteral and enteral nutrition support and other methods to improve the nutrition support delivery process.
 - iii. To review policies and procedures annually or as needed and revise these in consultation with the Nutrition Committee.
 - iv. To review performance of nutrition care, patient outcome data, cost of services and report the findings. The review of performance shall assess the appropriateness and effectiveness of the administration of specialized nutrition support for individual patients as follows:
 - v. Performance of the nutrition care process:
 1. Nutrition screening and assessment
 2. Nutrition care plan development
 3. Implementation of the nutrition care plan
 4. Safety and efficacy of enteral and parenteral nutrition
 5. Monitoring patient outcome data:
 - a. Nutrient intake monitoring
 - b. Goals achieved or failures
 - c. Quality of life
 - d. Morbidity and mortality
 - e. Cost effectiveness
 6. Decisions on termination of therapy
 - e. The Nutrition Support Team shall meet regularly for the nutrition rounds and patient follow up at least twice a week. Monthly, quarterly, and annual meetings shall also be done for update of activities and special case reports.
 - f. The specific responsibilities of the different member departments in the implementation of the Nutrition Support Services programs shall be as follows:
 - a. Dietitian or the head of the clinical nutrition section will be in charge of:

- i. Implementing and overseeing the nutrition screening and alerting process.
 - ii. Performing the formal nutrition assessment, nutrition care plan formulation, monitoring the nutrition care plan implementation, reassessment of the nutrition care plan, and termination of therapy.
 - iii. Providing daily census and listings of patients who are:
 - 1. Underweight, overweight, and obese
 - 2. Under critical care and are malnourished with albumin below 3 gm/dL
 - 3. Under enteral or parenteral nutrition
 - 4. Formally referred for nutrition support
- b. The nursing unit will be responsible for the following:
 - i. Ensuring that all patients' height and weigh data are taken and encoded in their charts and the hospital computer database for the nutrition screening and assessment processes.
 - ii. Undertaking regular checks on the stadiometers and weighing scales of the different units. To provide for special weighing and measuring instruments for special cases (e.g. portable bed scales).
 - iii. Ensuring availability of the following documentation forms:
 - 1. Nutrition screening and assessment forms
 - 2. Nutrition care plan forms
 - 3. Nutrient intake monitoring forms
 - 4. Assigning nurses to be involved in the clinical nutrition program as in:
 - a. Delivery and monitoring of enteral and parenteral nutrition
 - b. Monitoring of fluid and nutrition delivery
 - c. Reassessing of patient's response to nutrition management
 - d. Participating on decisions regarding types of monitoring and termination of nutrition therapy.
- c. The pharmacy department will be in charge of:
 - i. Assigning a clinical pharmacist to be involved in the clinical nutrition program
 - ii. Formulating policies on parenteral nutrition preparation, delivery, and monitoring.
 - iii. Participating in decisions on types of monitoring and termination of parenteral nutrition therapy
 - iv. Reporting on the utilization and problems related to parenteral nutrition.
- d. The different medical departments, institutes, and centers shall be in charge of the following:
 - i. Awareness of the nutrition screening process.
 - ii. Nutritional assessment
 - iii. Nutrition care plan development through the resident, fellow, attending physicians or assigned consultant
 - iv. Monitoring, reassessment of the nutrition care plan and termination of therapy documentation in the nutrition support progress notes.
- e. The Medical Records department together with the Nutrition Committee and Nutrition Support Team shall determine the proper location of the above forms in the patient's chart. It is recommended that these be part of the "active chart contents" in order to have a faster way of following up the patient's status and care giving process.

CLINICAL NUTRITION PROGRAM

Main Goal: delivering the nutrition care of the hospitalized patient through the multidisciplinary nutrition support team approach where the patient receives the following services:

1. Nutrition screening and assessment on admission
2. Full nutrition assessment and development of individualized nutrition care plans for the identified “high risk for malnutrition” patient. These are the intensive care, stroke, geriatric, and surgical patients with post-operative complications. Adult, pediatric, as well as high risk obstetric patients are covered.
3. Delivery of adequate nutrition to each patient through specialized techniques like enteral and parenteral nutrition and performing regular calorie and fluid balances to ensure adequate intake while in the hospital.
4. Documenting the outcome of the nutrition support process and instituting changes which can further improve the health care delivery process.

Mission:

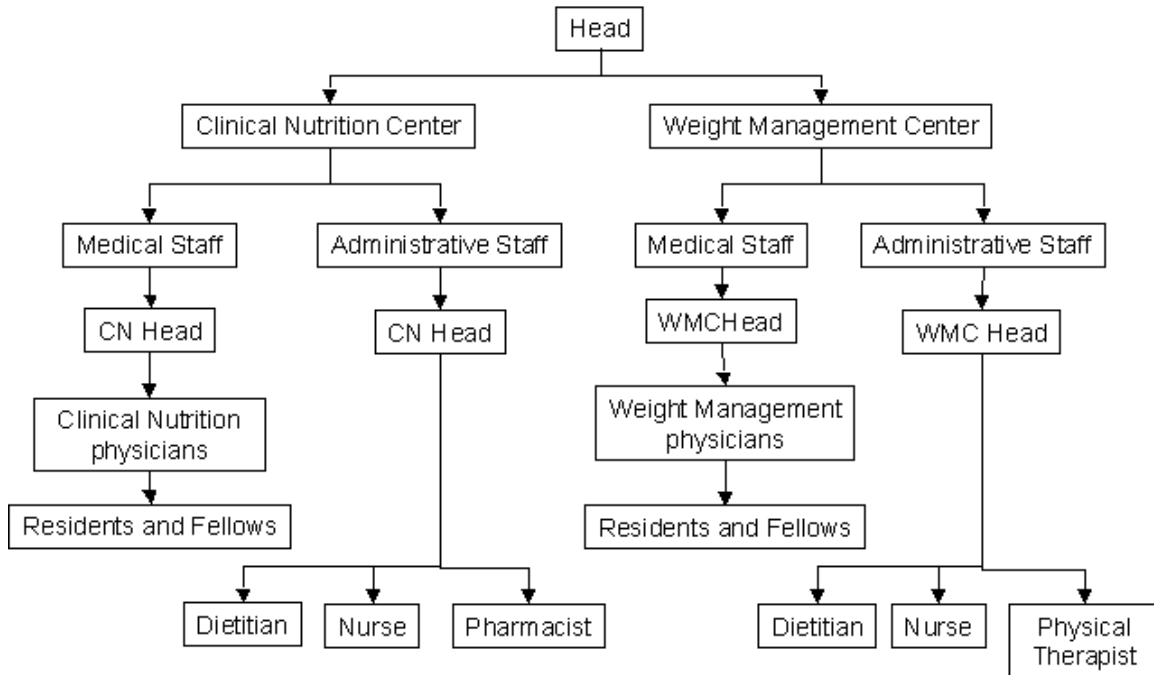
1. To implement in the institution a comprehensive clinical nutrition program, which covers all in and out-patients.
2. To implement a hospital based clinical nutrition training program which aims to produce specialists in clinical nutrition in the following disciplines: physicians, dietitians, nurses, pharmacists, and allied professionals involved in nutrition either community or hospital with the ultimate goal of providing the needed personnel who will practice and implement clinical nutrition in all health institutions whether in the hospital, managed care, or home set up
3. To contribute in raising the standards of clinical nutrition practice through research, either animal or human, and studies based on data collected from clinical practice, all geared to improve nutrition support delivery from screening, assessment, formulation, delivery, and monitoring and to publish these data in local and international publications.

Vision:

1. To help the institution provide the highest standards of nutrition care to in and out-patients through a structured system, which continuously raises the level of service based on goals and outcome collected from basic research and clinical practice and sharing this with the local and international community through collaboration projects, data publication, and advocacy activities.
2. To be a prime advocate of clinical nutrition research and practice in the international setting (national, Asia Pacific, and international scene) starting from the hospital, flowing through the community, and ultimately ending up in the patient’s home primarily through the process of education (e.g. clinical nutrition training program) and institution collaboration (e.g private and government institutions like multinational medical nutrition companies and Department of Health).

ORGANIZATIONAL SET UP (proposed)

Clinical Nutrition and Weight Management Center



THE COMPOSITION OF THE MULTIDISCIPLINARY CLINICAL NUTRITION TEAM

1. Medical staff – clinical nutrition specialist(s)
2. Administrative staff
 - a. Senior clinical dietitian
 - b. Junior clinical dietitian
 - c. Nutrition support data encoder
 - d. Clinical nutrition - nurse
 - e. Clinical nutrition - pharmacist
 - f. Clinical Nutrition Specialist - Physicians (Nutrition Support Physician)
 - g. Clinical Nutrition Fellows (Nutrition Support Fellows)

ROLES AND RESPONSIBILITIES: CLINICAL NUTRITION STAFF

1. Attend to all hospitalized patients identified to be covered by the clinical nutrition section:
 - a. Identified to be nutritionally at risk by the nutrition screening process:
 - i. Underweight (BMI < 18.5)
 - ii. Obese (BMI > 30)
 - iii. All patients with low albumin and in the ICU, geriatric, stroke, and surgical units
 - iv. Patients with weight loss >10% of previous weight
 - b. Critically ill patients
 - i. Medical and surgical ICU

- ii. CCU with following criteria
 - 1. BMI < 18.5
 - 2. Weight loss > 10%
 - 3. Geriatric post surgical with and without intra- or post op complications
 - 4. Obese
- iii. Geriatric patients with priority of the following:
 - 1. BMI < 18.5
 - 2. Weight loss > 10%
 - 3. Post surgical with and without intra- or post op complications
 - 4. Obese
- iv. Surgical with post-operative complications
- v. Acute and chronic stroke patients who are:
 - 1. Tube fed
 - 2. Parenteral nutrition
- c. Enteral and parenteral nutrition patients
- d. Attend to patients categorized in the following areas:
 - i. ICU
 - ii. CCU and Neuro-intensive care unit
 - iii. Geriatric patients
 - iv. Cancer patients
 - v. Referrals
 - vi. Surgical patients (pre- and post-operative)
 - vii. Renal patients and
 - viii. Transplant patients (bone marrow, solid organ)
- 2. Daily responsibilities:
 - a. Morning:
 - i. From 8 to 9 AM to get list of all patients to be followed up from the Nutrition support encoder
 - ii. Together with the clinical nutrition fellow or specialist prioritize patients for follow up after identifying the priority patients to be seen for that day
 - iii. Calorie count and other monitoring procedures
 - iv. Nutritional management
 - 1. Diet modification suggestions and carrying out of orders
 - 2. Referral of problems to the nutrition support team
 - b. Afternoon:
 - i. Complete all assigned work
 - ii. After accomplishing the primary work will encode all data into the nutrition support database.
 - iii. Discuss with the nutrition support team problems encountered
 - iv. Discussion of assigned topics with the clinical nutrition specialist

Schedule of work design:

- 1. May take on the 8-5 AM schedule
- 2. May be on shifts like:
 - a. AM group (8-5 shift)
 - b. PM group (5-19 shift including Saturdays and Sundays)
- 3. Whatever is decided by the group as long as it fulfills the following:
 - a. Required number of workload per week
 - b. Able to make and submit reports on time

Responsibilities:

1. Nutrition screening with identification of the “high risk of developing malnutrition” patient.
 - a. Teaches the correct way of getting the above information to the personnel concerned (nurses and unit secretaries)
2. Assess nutritional/metabolic status using appropriate age and population-specific screening and assessment tools after discussion with the NST-physician and attending MD.
3. Determine nutritional/metabolic requirements based on findings of subjective and objective nutrition assessment. The methods below are required knowledge and competency:
 - a. Short method
 - b. Harris-Benedict
 - c. Indirect calorimeter
4. Establishes interdisciplinary nutrition care plan:
 - a. Nutrient requirements
 - b. Formulation(s)
 - c. Access and delivery methods
 - d. Helps develop protocols on special procedures like:
 - i. Renal transplant
 - ii. Cardiac surgery
 - iii. Bone marrow transplant
 - iv. Liver transplant
 - e. Discharge plan
 - i. Patient education on problem on hand
 1. Pathophysiology of the disease and relation to the nutrition
 2. What to expect re: outcome or complications
 - ii. Home training re: special diet like dysphagia diets, tube feeding, parenteral nutrition
5. Nutrition delivery:
 - a. Formulates the necessary diet as required for the patients:
 - i. Standard diets
 - ii. Disease specific diets
 - b. Acting on diet preference
 - c. Techniques on improving taste and patient compliance
 - d. Participates in decisions regarding:
 - i. Selecting the appropriate formula/formulation of specialized nutrition support based on patient s disease process and compatibility with route of access
 - ii. Route for administration of specialized nutrition support
6. Quantifies actual nutrient intake.
 - a. Calorie count and energy balance
 - b. Nitrogen balance
7. Participates in the management of complications related to nutrition support therapy.
 - a. Enteral nutrition
 - b. Parenteral nutrition
8. Interprets laboratory data in conjunction with ongoing monitoring of clinical status; and recommends/prescribes appropriate management/treatment for abnormalities. Make report on the following:
 - a. Prevalence of malnutrition
 - b. Performance indicator accomplishments
 - i. Percent patient seen based on required patients/day (formal referrals of any kind by the attending physician)
 - ii. Percent “needed to be seen” patients

9. Identifies nutrient-nutrient, drug-nutrient interactions.
10. Designs/recommends patient-specific feeding formulation/prescription
 - a. Preparation for discharge:
 - i. Discharge planning
 - ii. Diet instruction

ROLES AND RESPONSIBILITIES: MEDICAL STAFF

Medical Staff - Nutrition support physician or clinical nutrition specialist

1. Consultant in nutrition support activities which are:
 - a. Nutritional management of critically ill patients in the following areas:
 - i. Nutritionally at risk patients after nutrition screening
 - ii. Critically ill patients
 1. Medical and surgical ICU
 2. CCU
 - iii. Geriatric patients needing feeding support or closer follow up
 - iv. Surgical with post-operative complications
 - v. Acute and chronic stroke patients who are:
 1. Tube fed
 2. Parenteral nutrition
 - vi. Other enteral and parenteral nutrition patients
2. Instructor in the clinical nutrition fellowship training program and actively involved in research or preparation and publication of articles in nutrition support
3. Makes decisions and actively involved in nutrition support/management policies and procedures development, modifications, and implementation
4. Be involved in work on developing and maintenance of the Philippine Society of Parenteral and Enteral Nutrition (PHILSPEN)
5. Schedule:
 - a. Consultant for the week/month for generally referred patients, who are designated as “referred to the NST” or “referred for nutrition support”.
 - b. Consultant of private patients referred to him/her for nutrition management or patients decked for management (considered now as private patient of the decked consultant)
 - c. Works with the nutrition support team
 - i. Makes rounds with NST and fellows
 - ii. Involved in the regular meetings for:
 1. Outcome data
 2. Case studies
 3. Problems in management of administration of nutrition support activities

DIFFERENTIATION AND DISTRIBUTION ON OF ROLES/RESPONSIBILITIES

| Table 1: Differentiation of roles of the nutrition support team: | | | | |
|---|-----------|-----------|-------|------------|
| Activity | Physician | Dietitian | Nurse | Pharmacist |
| Pathophysiology of disease process | Yes | - | - | - |
| Diagnosis | Yes | - | - | - |
| Correlation of disease process with nutrition needs or management | Yes | - | - | - |
| Nutrition screening | Yes | Yes | Yes | Yes |
| Nutrition assessment | Yes | Yes | - | - |
| Nutrition care plan | Yes | Yes | - | - |
| o Nutrition requirement | Yes | Yes | - | Yes |
| o Formulation content, type based on disease process | Yes | Yes | - | - |
| o Access decision / suggestion | Yes | - | - | - |
| o Delivery decision | Yes | Yes | - | - |
| Formulation | - | Yes | - | Yes |
| Enteral nutrition | Yes | Yes | Yes | - |
| o Content | Yes | Yes | - | - |
| o Formulation | - | Yes | - | - |
| o Delivery rate | Yes | Yes | - | - |
| o Delivery supervision / management | Yes | Yes | Yes | - |
| Parenteral nutrition | Yes | Yes | Yes | Yes |
| o Content | Yes | Yes | - | Yes |
| o Formulation | - | - | - | Yes |
| o Delivery supervision | Yes | Yes | Yes | Yes |
| Monitoring | Yes | Yes | Yes | Yes |
| o Calorie count | Yes | Yes | - | - |
| o Variable choice for monitoring | Yes | Yes | - | Yes |
| o Quality of delivery process | Yes | Yes | Yes | Yes |
| Reassessment of delivery process | Yes | Yes | - | Yes |
| Termination of therapy choice/decision | Yes | Yes | - | Yes |
| Recommendations | Yes | Yes | Yes | Yes |

DIFFERENTIATION OF ROLES/RESPONSIBILITIES AMONG DIETITIANS

| Dietitians' Roles | | | |
|--|---|---|---|
| Procedure | Therapeutic Dietitian | Clinical Dietitian | Specialty Dietitian |
| Nutrition screening | Not responsibility | Responsibility | Option |
| Nutrition assessment | Not responsibility | Responsibility | Option – selected patients |
| Nutrition care plan <ul style="list-style-type: none"> ○ Nutrition requirement ○ Formulation decision ○ Access suggestion ○ Monitoring | Not responsibility | Responsibility | Option – selected patients |
| Nutrition formulation | Regular diet <ul style="list-style-type: none"> ○ Oral supplements | Special diet (all patients) <ul style="list-style-type: none"> ○ Oral supplements ○ Enteral nutrition ○ Parenteral nutrition | Option – selected patient <ul style="list-style-type: none"> ○ Enteral nutrition ○ Parenteral nutrition |
| Nutrition delivery | Regular diet | Supervises special diet <ul style="list-style-type: none"> ○ enteral pump ○ manner of delivery Regular diet <ul style="list-style-type: none"> ○ Quality control assessment ○ Diet modification | Supervises special diet – selected patient |
| Monitoring | Not responsibility | <ul style="list-style-type: none"> ○ Calorie count ○ Other variable | Selected patient <ul style="list-style-type: none"> ○ Calorie count ○ Other variable |
| Discharge / Reassessment | <ul style="list-style-type: none"> ○ Discharge planning ○ Diet instruction ○ Diet preference | <ul style="list-style-type: none"> ○ Reassessment ○ Diet modification ○ Special diet instruction (oral, enteral and/or parenteral nutrition) | <ul style="list-style-type: none"> ○ Selected patient special diet |

COMPETENCIES REQUIRED OF THE STAFF OF CLINICAL NUTRITION SECTION:

Individual competencies:

1. Fluid, Energy Nutrient Requirement determination
 - a. Measures of Energy Intake
 - b. Metabolism/Absorption/Utilization of proteins
 - c. Metabolism/Absorption/Utilization of carbohydrates
 - d. Requirements for Macro/Micronutrients
 - e. Nutritional requirements in early life (counsel regarding infant and child feeding)
 - a. Nutritional recommendations for adolescents
 - b. Nutritional status and requirements in pregnancy and lactation
 - c. Identification of nutrient deficiencies and toxicities
 - d. Criteria of Adequate Diet including RDA
 - e. Major Minerals: chemical properties; absorption, transport, metabolism, functions (food sources and requirements)
 - f. Dietary sources of macro and micronutrients
 - g. Vitamins – chemical properties; absorption, transport, metabolism, functions (food sources and requirements)
 - h. Identification of nutrient deficiencies and toxicities (diagnosis of vitamin deficiencies and excesses)
 - i. Trace elements: chemical properties; absorption, transport, metabolism and functions (diagnosis of mineral and trace element deficiencies and excesses)
 - j. Food sources and requirements
2. Factors Affecting Body Weight/ Composition/Energy Balance
 - a. Physical Examination and Anthropometry
 - b. Laboratory Data
 - i. Biochemical Data
 - ii. Nitrogen balance
 - iii. Calorimetry
 - c. GI Physiology
 - i. Physiology of hunger, satiety, and eating behavior
 - ii. Gastrointestinal disorders
 - iii. Malabsorption/Inflammatory/Gastrointestinal Processes
 - d. Metabolism, absorption, and utilization of fiber
 - e. Nutrition and Aging interactions
 - f. Growth and development
3. Lipid Absorption and Transport
 - a. Factors affecting circulating lipid concentrations
 - b. Lipid classification and properties
4. Hormonal Control of Nutrient Metabolism
5. Indications for Special Substrates
6. Diagnosis of Protein Energy Malnutrition
 - a. Medical History
 - b. Diet History
7. Enteral Nutrition – Indications and Contraindications
 - a. Calculation of Nutrient Composition of Formulas
 - b. Physiologic Complications
 - c. Metabolic Complications
 - d. Mechanical Complications
8. Parenteral Nutrition – Indications and Contraindications

- a. Calculation of Nutrient Composition of Formulas
 - b. Metabolic Complications
 - c. Septic Complications
 - d. Mechanical complications
 - e. Home parenteral nutrition – initiation, management, discontinuance
9. Comparison between parenteral and enteral nutrition
 10. Critical Illness
 11. Wasting Diseases
 12. Endocrine Conditions
 13. Cardiopulmonary Illnesses
 14. Renal Insufficiency and Failure
 15. Initiation and withdrawal of nutrition support
 16. Informed consent regarding nutritional support
 17. Obesity
 18. Eating Disorders
 19. Drug nutrient interaction
 20. Alternative Nutrition Therapies and Supplements
 21. Transplantation
 22. Cultural and ethnic influences on nutrition

(Reference: Interdisciplinary nutrition support core competencies. A.S.P.E.N. Board of Directors NCP 1999; 14: 331-3)

Interdisciplinary nutrition support team or group competencies:

1. Assesses nutritional/metabolic status using appropriate age and population-specific screening and assessment tools.
2. Determines nutritional/metabolic requirements based on findings of subjective and objective nutrition assessment.
3. Establishes interdisciplinary nutrition care plan including goals of therapy, metabolic needs, route of nutrition support, discharge plan, patient education and/or home training.
4. Selects the appropriate formula/formulation and route for administration of specialized nutrition support based on patient's disease process and compatibility with route of access.
5. Participates in the management of complications related to nutrition support therapy.
6. Interprets laboratory data in conjunction with ongoing monitoring of clinical status; and recommends/prescribes appropriate management/treatment for abnormalities.
7. Identifies nutrient-nutrient, drug-nutrient interactions.
8. Designs/recommends patient-specific feeding formulation/prescription
9. Quantifies actual nutrient intake.
10. Disseminates accurate nutrition information to colleagues and patients and serves as preceptor for nutrition training.
11. Performs Quality Improvement activities using an evidence-based decision making process.
12. Provides leadership in promoting quality nutrition support practice.
13. Engages in self-assessment and continuing professional education.
14. Critically evaluates the design of research studies and uses research findings in practice.
15. Designs and/or conducts basic science or clinical research as appropriate to the practice setting and position.
16. Generates and analyzes data related to cost when evaluating nutrition support products, equipment, supplies, techniques, and services.
17. Participates in and supports decisions related to termination of therapy.

18. Undertakes decisions and actions in an ethical manner.
19. Evaluates outcomes of nutrition intervention.
20. Teaches/educates patients and caregivers on modality of nutrition support, delivery systems, care of catheter and access site, and other content appropriate to the nutrition care plan and the patient's learning needs.

(Reference: Interdisciplinary nutrition support core competencies. A.S.P.E.N. Board of Directors NCP 1999; 14: 331-3)

Practice-Based Competencies:

1. Physician and Nurse - Demonstrates proficiency in the establishment of venous access.
2. Physician, Nurse, and Dietitian - Demonstrates proficiency with feeding tube insertion.
3. Physician, Nurse, Dietitian, Pharmacist - Obtains/writes prescriptions for nutrition support therapies.
4. Physician, Nurse, Dietitian, and Pharmacist - Monitors drug-drug, drug-disease interactions and related pharmacokinetic parameters.
5. Physician, Nurse, Dietitian, Pharmacist - Prepares or supervises preparation of enteral feeding formulations.
6. Pharmacist - Demonstrates proficiency in compounding parenteral nutrition formulations.
7. Physician, Nurse, Dietitian, Pharmacist - Manages enteral and parenteral feeding access devices and related delivery systems.
8. Physician, Nurse, Dietitian - Demonstrates proficiency in care of access site.

(Reference: Interdisciplinary nutrition support core competencies. A.S.P.E.N. Board of Directors NCP 1999; 14: 331-3)

PRIVILEGING OF CLINICAL NUTRITION SECTION STAFF:

Individual and interdisciplinary nutrition support team privileging:

1. Assess nutritional/metabolic status using appropriate age and population-specific screening and assessment tools.
2. Determine nutritional/metabolic requirements based on findings of subjective and objective nutrition assessment.
3. Establish interdisciplinary nutrition care plan including goals of therapy, metabolic needs, route of nutrition support, discharge plan, patient education and/or home training.
4. Select the appropriate formula/formulation and route for administration of specialized nutrition support based on patient's disease process and compatibility with route of access.
5. Participate in the management of complications related to nutrition support therapy.
6. Interpret laboratory data in conjunction with ongoing monitoring of clinical status; and recommends/prescribes appropriate management/treatment for abnormalities.
7. Identify nutrient-nutrient, drug-nutrient interactions.
8. Design/recommend patient-specific feeding formulation/prescription
9. Quantify actual nutrient intake.
10. Disseminate accurate nutrition information to colleagues and patients and serves as preceptor for nutrition training.
11. Perform Quality Improvement activities using an evidence-based decision making process.
12. Provide leadership in promoting quality nutrition support practice.

13. Engage in self-assessment and continuing professional education.
14. Critically evaluate the design of research studies and uses research findings in practice.
15. Design and/or conduct basic science or clinical research as appropriate to the practice setting and position.
16. Generate and analyze data related to cost when evaluating nutrition support products, equipment, supplies, techniques, and services.
17. Participate in and supports decisions related to termination of therapy.
18. Undertake decisions and actions in an ethical manner.
19. Evaluate outcomes of nutrition intervention.
20. Teach/educate patients and caregivers on modality of nutrition support, delivery systems, care of catheter and access site, and other content appropriate to the nutrition care plan and the patient s learning needs.

Practice-Based Privileging:

1. Physician and Nurse - establishment of venous access.
2. Physician, Nurse, and Dietitian - feeding tube insertion.
3. Physician, Nurse, Dietitian, Pharmacist - Obtain/write prescriptions for nutrition support therapies.
4. Physician, Nurse, Dietitian, and Pharmacist - Monitor drug-drug, drug-disease interactions and related pharmacokinetic parameters.
5. Physician, Nurse, Dietitian, Pharmacist - Prepare or supervise preparation of enteral feeding formulations.
6. Pharmacist - compounding parenteral nutrition formulations.
7. Physician, Nurse, Dietitian, Pharmacist - Manage enteral and parenteral feeding, access devices, and related delivery systems.
8. Physician, Nurse, Dietitian - care of access site.

(Reference: Interdisciplinary nutrition support core competencies. A.S.P.E.N. Board of Directors NCP 1999; 14: 331-3)

CLINICAL NUTRITION PROGRAM PROCEDURES

1. NUTRITION SCREENING

- a. All heights and weights of admitted patients are taken on admission in the different units (c/o Nutrition Service).
 - i. How to get correct weight and height on the patients (c/o Nursing Service)
 - ii. Instruments for getting the weight and height are calibrated on a regular basis (c/o Nursing Service)
 - iii. The unit secretary encodes the height and weight taken in the unit computer (c/o Nursing Service)
- b. The height and weight data are downloaded into the nutrition support computer database from which the following data are taken (c/o Clinical Nutrition Section)
 - i. Body mass index and corresponding nutritional status of the patient based on the BMI.
 - ii. **Nutrition surveillance report** for the day which shows the following:
 1. Units with the corresponding number of patients with normal, underweight, overweight, and obese BMI.
 2. Units with corresponding number of patients with no heights or weights taken.
 3. Units with corresponding number of patients with wrong entries.
- c. Identification of patients who are at risk of developing malnutrition who are the following (c/o Clinical Nutrition Section):
 - i. BMI < 18.5 (the underweight) or >30 (the obese) – these patients are provided **with stickers** in their charts which notify the attending physician of their status and the recommended total calorie and protein requirement for the day (c/o Clinical Nutrition Section).
 - ii. “Needed to be seen patients” (c/o Clinical Nutrition Section – clinical dietitian under supervision by the clinical nutrition physician):
 1. Critical care patients
 2. Parenteral nutrition patients
 3. Tube fed patients
 4. Stroke patients
 5. Geriatric patients
 6. Transplant patients
 7. Post-surgical patients with complications, and with low albumin
 8. Endocrine related problems / complications
- d. The intern, resident, or fellow completes the **NUTRISTAT form for adult or pediatric patients**, which is the nutrition screening information of the patient. This form will be included in the patient’s medical record.

NUTRITION SCREENING FORM

NUTRISTAT - ADULTS

FAMILY NAME

FIRST NAME

MIDDLE NAME

PIN No.

AGE

SEX

ROOM

DATE ADMISSION

ATTENDING MD

NUTRITIONAL STATUS

NORMAL

UNDERWEIGHT

OVERWEIGHT

OBESE

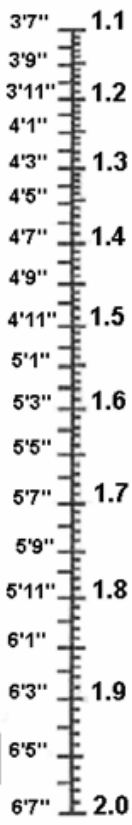
Weight can not be taken

WEIGHT LOSS > 10% usual weight

NUTRITIONALLY AT RISK

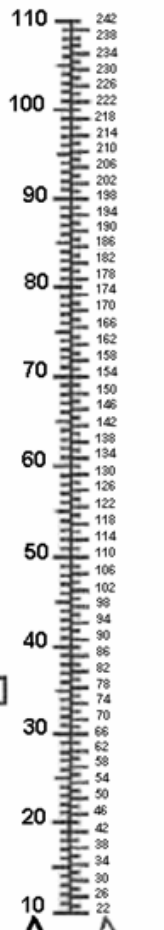
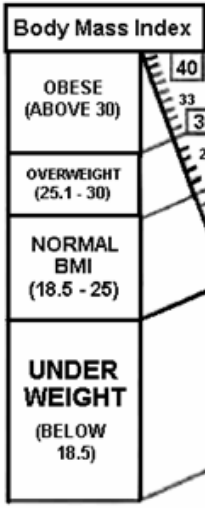
Based on WHO criteria*

IDEAL BMI
Males = 22
Females = 21



HEIGHT

WEIGHT



Ft/In

Meters

HEIGHT

Kg. Lbs.

WEIGHT

BODY MASS INDEX (BMI) NOMOGRAM

* Jelliffe DB: The assessment of the nutritional status of the community. WHO Monograph Series 53, Geneva, 1966. © LL100

Accomplished by:

Date accomplished:

NUTRITION RISK SCREENING 2002 (NRS 2002)

(Reference: Kondrup J, Allison SP, Elia M, Plauth M. ESPEN Guidelines for Nutrition Screening 2002. Clin Nutr 2003; 22(4): 415-21)

| | | | |
|---------------------|--|------------------------|--|
| Patient Data | | | |
| Last Name | | Height (meters) | |
| First Name | | Weight (kg) | |
| Room Number | | BMI | |
| Attending MD | | | |
| Clinical Impression | | | |

| STEP 1 - Initial Screening | | | |
|---|------------|-----------|--|
| Questions | Yes | No | |
| • Is BMI < 20.5? | | | |
| • Has the patient lost weight within the last three (3) months? | | | |
| • Did the patient have a reduced dietary intake in the last week? | | | |
| • 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 | | | |

| STEP 2 – Final Screening | | | |
|---|--------------|---------------------------|--|
| Nutritional Status indicators (choose one only) | Score | Place score if YES | |
| • Normal nutritional status | 0 | | |
| • Weight loss > 5% in 3 months / or food intake below 50-75% of normal requirement in preceding week | 1 | | |
| • Weight loss > 5% in 2 months / or BMI 18.5-20.5 + impaired general condition / or food intake 25-60% or normal requirement in preceding week | 2 | | |
| • Weight loss > 5% in one month (or > 15% in 3 months) / or BMI < 18.5 + impaired general condition / or food intake 0-25% of normal requirement in preceding week | 3 | | |
| Clinical condition (may choose more than one) | | | |
| • Hip fracture chronic patients, in particular with acute complications; cirrhosis, COPD, chronic hemodialysis, diabetes, oncology | 1 | | |
| • Major abdominal surgery, stroke, severe pneumonia, hematologic malignancy | 2 | | |
| • Head injury, bone marrow transplantation, intensive care patients (APACHE > 10) | 3 | | |
| Total Score | | | |
| ACTION TO BE TAKEN | | | |
| <input type="checkbox"/> Total score ? 3: The patient is nutritionally at risk and a nutritional care plan is initiated | | | |
| <input type="checkbox"/> Total score < 3: Weekly re-screening of the patient / If the patient is scheduled for a major operation a preventive nutrition care plan is considered to avoid associated risk status | | | |
| Performed By: | | Date: | |

2. NUTRITIONAL ASSESSMENT (Procedures)

- a. A list of priority patients for formal nutritional assessment is prepared at the clinical nutrition section by the nutrition support encoder. The selection of patients who are tagged as “NEEDED TO BE SEEN” is performed by either the senior nutrition support fellow or the senior clinical dietitian for the day
- b. All patients formally referred by the attending physician for any form of nutritional management will be for nutritional assessment also.
- c. The nutritional assessment form is made up of the following items:
 - i. BMI nomogram for rapid determination of BMI based nutritional status
 - ii. Subjective Global Assessment simplified to a checklist format
 - iii. Nutrition related data like: Albumin and Total Lymphocyte Count.
 - iv. Risk level determination
- d. There is a nutritional assessment and risk level indicator for both adult and pediatric patients.
- e. These data are encoded into the nutrition support database for the following purposes:
 - i. Validation of the forms (inter-rater and intra-rater)
 - ii. Validation in the risk level determination

NUTRITION ASSESSMENT FORM

| | | | |
|--------------|--|---------------|---|
| LAST NAME | <input style="width: 95%;" type="text"/> | ROOM | <input style="width: 95%;" type="text"/> |
| FIRST NAME | <input style="width: 95%;" type="text"/> | DATE ADMITTED | <input style="width: 95%;" type="text"/> |
| MIDDLE NAME | <input style="width: 95%;" type="text"/> | AGE | <input style="width: 95%;" type="text"/> |
| ATTENDING MD | <input style="width: 95%;" type="text"/> | SEX | <input style="width: 95%;" type="text"/> |
| HEIGHT_MTR | <input style="width: 40%;" type="text"/> | WEIGHT_KG | <input style="width: 40%;" type="text"/> |
| | | BMI | <input style="width: 40%;" type="text"/> |
| | | | OB <input type="checkbox"/> UW <input type="checkbox"/> |
| | | | IBW <input style="width: 40%;" type="text"/> |
| DIAGNOSIS | <input style="width: 95%;" 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 <input type="radio"/> • bedridden < 2 wks | 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 style="width: 40px;" type="text"/> | NUTRITION RISK LEVEL | 0 <input type="checkbox"/> LOW RISK (Level 1) 1-2 <input type="checkbox"/> MODERATE RISK (Level 2) | ≥3 <input type="checkbox"/> HIGH RISK (Level 3) ≥4 <input type="checkbox"/> SURGERY |

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):

3. **NUTRITION CARE PLAN DEVELOPMENT** (c/o clinical dietitian with supervision with or by nutrition support physician)
 - a. The form for nutrition care plan is filled up by either the nutrition support physician, fellow, or clinical dietitian.
 - b. The contents of the form for the nutrition care plan are as follows:
 - i. Nutritional requirements:
 1. Total calorie requirement
 2. Total protein requirements
 3. Electrolyte requirements
 4. Vitamin requirements
 5. Trace element requirements
 - ii. Goals either to build up or lose weight are placed in the form.
 - iii. Formulation of nutrient to be delivered either by:
 1. Enteral nutrition
 2. Parenteral nutrition
 - c. The other areas where these data are placed are:
 - i. Consultation record in the medical record of the patient
 - ii. Left column of the patient's order sheet.

NUTRITION CARE PLAN FORM

| | | | |
|----------------------------------|--|---|---|
| LAST NAME | | PIN | |
| FIRST NAME | | ROOM | |
| MIDDLE NAME | | AGE | |
| DATE ADMITTED | | SEX | |
| ATTENDING MD | | WEIGHT (KG) | |
| | | | |
| TOTAL CALORIE REQUIREMENT | Wt(kg) _____ x _____ = <input style="width: 50px;" type="text"/> calorie factor kcal/day | | |
| TOTAL PROTEIN REQUIREMENT | Wt(kg) _____ x _____ = <input style="width: 50px;" type="text"/> calorie factor TCR | | |
| ELECTROLYTES | <input type="checkbox"/> Standard Dose <input type="checkbox"/> Specific → | <input style="width: 100%; height: 20px;" type="text"/> | |
| VITAMINS | <input type="checkbox"/> Standard Dose <input type="checkbox"/> Specific → | <input style="width: 100%; height: 20px;" type="text"/> | |
| TRACE ELEMENTS | <input type="checkbox"/> Standard Dose <input type="checkbox"/> Specific → | <input style="width: 100%; height: 20px;" type="text"/> | |
| NUTRACEUTICALS | <input type="checkbox"/> Glutamine <input type="checkbox"/> Omega-3-Fatty Acid <input type="checkbox"/> Antioxidants | <input type="checkbox"/> Standard Dose <input type="checkbox"/> Specific → | <input style="width: 100%; height: 20px;" type="text"/> |
| FORMULATION | <input type="checkbox"/> Standard Diet <input type="checkbox"/> Special Diet → <input type="checkbox"/> Oral supplement → <input type="checkbox"/> Enteral nutrition → <input type="checkbox"/> Parenteral nutrition → | Specifics <input style="width: 100%; height: 50px;" type="text"/> | |
| ACCESS / ROUTE | <input type="checkbox"/> Oral <input type="checkbox"/> NGT <input type="checkbox"/> PEG <input type="checkbox"/> Peripheral parenteral | <input type="checkbox"/> Surgical Gastrostomy <input type="checkbox"/> Jejunostomy (surgical) <input type="checkbox"/> PEG - J <input type="checkbox"/> Central parenteral | |
| DELIVERY METHOD | Standard Diet Specifics | <input style="width: 100%; height: 20px;" type="text"/> | |
| | Enteral <input type="checkbox"/> Bolus → <input type="checkbox"/> Gravity → <input type="checkbox"/> Enteral pump → Parenteral nutrition → | Volume and rate <input style="width: 100%; height: 30px;" type="text"/> | |
| MONITORING | <input type="checkbox"/> Calorie count <input type="checkbox"/> Weight <input type="checkbox"/> Serum Albumin <input type="checkbox"/> Others | Frequency _____ _____ _____ | |
| Performed By (Name/Sign) | | | Date |

- 4. NUTRITION CARE PLAN IMPLEMENTATION (Procedures)** (c/o clinical nutrition, nursing service, pharmacy)
- a. Computations of the enteral or parenteral nutrition are done through the computer database software which generates its own order sheet.
 - b. Orders for the implementation of the nutrition care plan are placed in the Doctor's Order Sheet (pink form) of the medical record after due notation is placed in the left column for any pertinent data related to the order.
 - c. Orders can also be placed in the Consultation Form (green form) of the medical record of the patient.
 - d. The orders should contain the following:
 - i. Nutritional requirement data:
 1. Total calorie requirement (required)
 2. Total protein requirements (required)
 3. Electrolyte requirements
 4. Vitamin requirements
 5. Trace element requirements
 - ii. Goals either to build up or lose weight..
 - iii. Type feeding:
 1. Oral
 2. Enteral nutrition
 3. Parenteral nutrition
 - iv. Manner of feeding delivery:
 1. Bolus feeding
 2. Enteral pump
 3. Infusion pump
 - e. **REGULAR DIETS:**
 - i. **Taken care of by the Therapeutic Department or by the Third Party Concessionaire**
 - ii. **Quality control to be supervised by the clinical nutrition department**
 - iii. **Calorie counts by the clinical nutrition department**

5. NUTRITION MANAGEMENT MONITORING (Procedures)

- a. The patients are prioritized for follow up by the nutrition support team who are essentially the nutrition support fellow, clinical dietitian, clinical pharmacist, and nurse.
- b. Fellows and dietitians will team up and go on rounds together in the morning.
- c. Each team will rotate in 1 ICU setting and outside ICU settings.
- d. Consultation with consultant:
 - i. Go to consultant assigned or attending to specific patient.
 - ii. If no specific consultant assigned (routine assessment and monitoring, especially in the ICUs), refer to consultant per unit:
 - iii. If consultant of unit not available or patient is not applicable to the units as stated, refer to consultant-in-charge for the month.
- e. Teams
 - i. Each team will consist of 1 fellow and 1 clinical dietitian.
 - ii. Both groups will rotate in opposite direction so that each will be able to rotate with other people.
 - iii. Both members of the team must coordinate and go on rounds together.
 - iv. Shifting of partners is every 2 months.
- f. Division of Roles
 - i. Fellow/NST
 1. All NST referrals
 2. Patients on EN and PN
 3. Critical care patients
 4. Give home prescriptions for all NST referred patients (including ffup skeds c/o consultant)
 - ii. Clinical dietitian
 1. Diet instructions
 2. Calorie counting (EN and/or PN and/or Oral)
 3. Oral, non-critical patients
 4. Food preferences (in coordination with dietitians in therapeutics)
- g. Monitoring of the following data are done:
 - i. Fluid balance
 - ii. Calorie balance
 - iii. Protein balance
 - iv. Laboratory data
 - v. Weight
 - vi. Progress on the patient's status

NUTRITION MANAGEMENT MONITORING FORMS

Nutrition and Fluid Balance Sheet

Patient Name _____ Patient ID _____
 Age _____ Sex _____ Attending MD _____
 Height (meter) _____ Weight (kg) _____ Previous Weight (kg) _____
 Impression _____

Fluid Intake Record

| Date | Unit | Oral | Enteral | Tube Flush | Parenteral | IVDex | IVF2 | Others | Total Intake |
|------|------|------|---------|------------|------------|-------|------|--------|--------------|
| | | | | | | | | | |
| | | | | | | | | | |
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| | | | | | | | | | |

Fluid Output Record

| Date | Unit | Urine | Drain1 | Drain2 | Stool | Insensible | Total Output | Fluid Balance |
|------|------|-------|--------|--------|-------|------------|--------------|---------------|
| | | | | | | | | |
| | | | | | | | | |
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Calorie Intake Record

| Date | Unit | Oral Calorie | Enteral Calorie | Parenteral Calorie | IVDex Calorie | Others | Total Calories | TCR | Calorie Balance |
|------|------|--------------|-----------------|--------------------|---------------|--------|----------------|-----|-----------------|
| | | | | | | | | | |
| | | | | | | | | | |
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| | | | | | | | | | |

Protein Intake Record

| Date | Unit | Oral Protein | Enteral Protein | Parenteral Protein | Others | Total Protein | TPR | Protein Balance |
|------|------|--------------|-----------------|--------------------|--------|---------------|-----|-----------------|
| | | | | | | | | |
| | | | | | | | | |
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NUTRIENT MONITORING FORM

| | |
|---------------------|----------|
| Patient Name | |
| Age | Sex: |
| Hospital No. | Room No. |
| Attending Physician | |

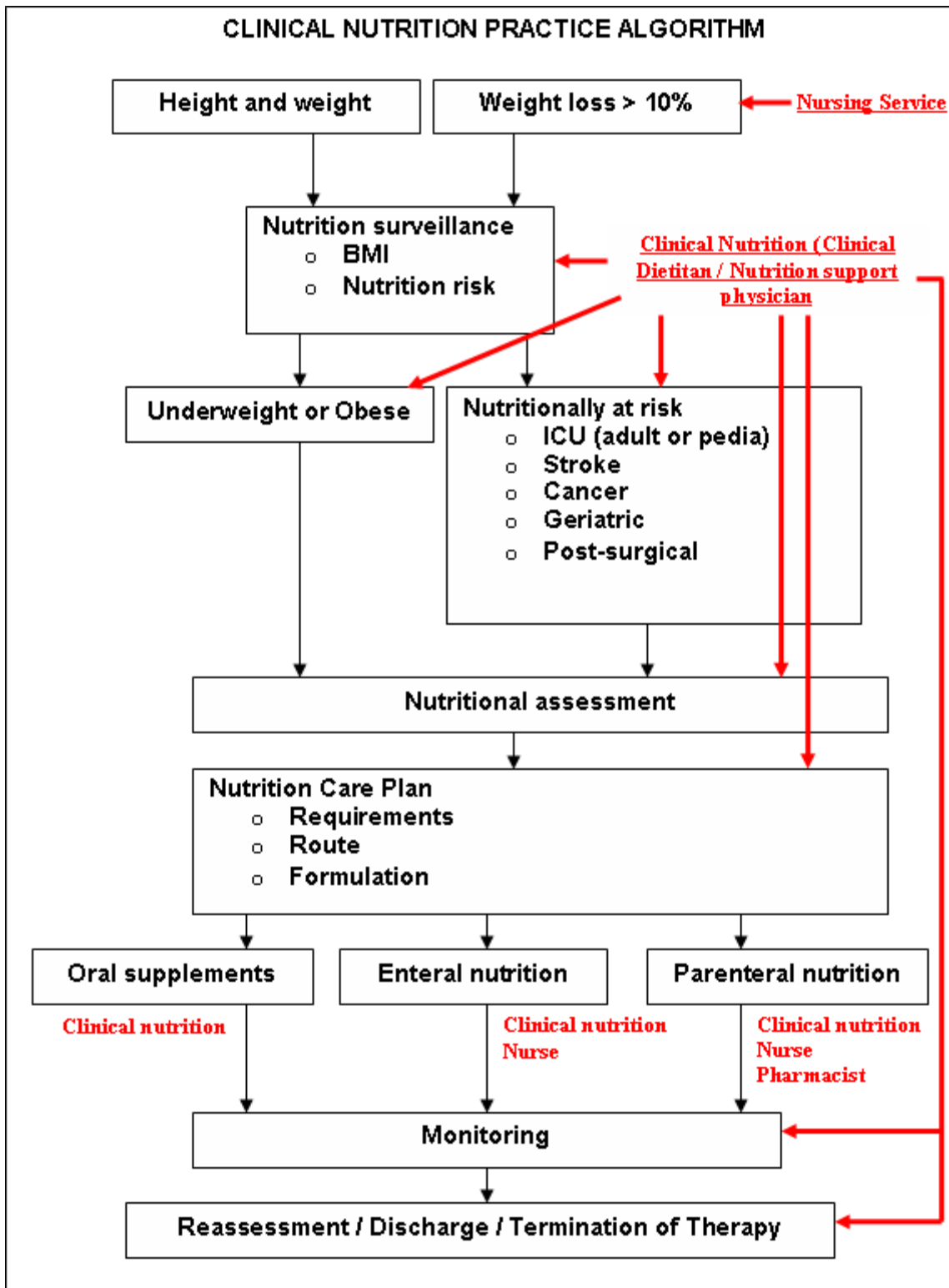
| Date | Nutrient Source | Calorie Intake | TCR | % Calorie Intake | Protein Intake | TPR | % Protein Intake | Total Fluid Intake |
|------|-----------------|----------------|-----|------------------|----------------|-----|------------------|--------------------|
| | Oral | | | | | | | |
| | Tube Feed | | | | | | | |
| | IV Dextrose | | | | | | | |
| | Parenteral | | | | | | | |
| | TOTAL | | | | | | | |
| | Oral | | | | | | | |
| | Tube Feed | | | | | | | |
| | IV Dextrose | | | | | | | |
| | Parenteral | | | | | | | |
| | TOTAL | | | | | | | |
| | Oral | | | | | | | |
| | Tube Feed | | | | | | | |
| | IV Dextrose | | | | | | | |
| | Parenteral | | | | | | | |
| | TOTAL | | | | | | | |
| | Oral | | | | | | | |
| | Tube Feed | | | | | | | |
| | IV Dextrose | | | | | | | |
| | Parenteral | | | | | | | |
| | TOTAL | | | | | | | |
| | Oral | | | | | | | |
| | Tube Feed | | | | | | | |
| | IV Dextrose | | | | | | | |
| | Parenteral | | | | | | | |
| | TOTAL | | | | | | | |
| | Oral | | | | | | | |
| | Tube Feed | | | | | | | |
| | IV Dextrose | | | | | | | |
| | Parenteral | | | | | | | |
| | TOTAL | | | | | | | |
| | Oral | | | | | | | |
| | Tube Feed | | | | | | | |
| | IV Dextrose | | | | | | | |
| | Parenteral | | | | | | | |
| | TOTAL | | | | | | | |

6. NUTRITION CARE PLAN REASSESSMENT (Procedures)

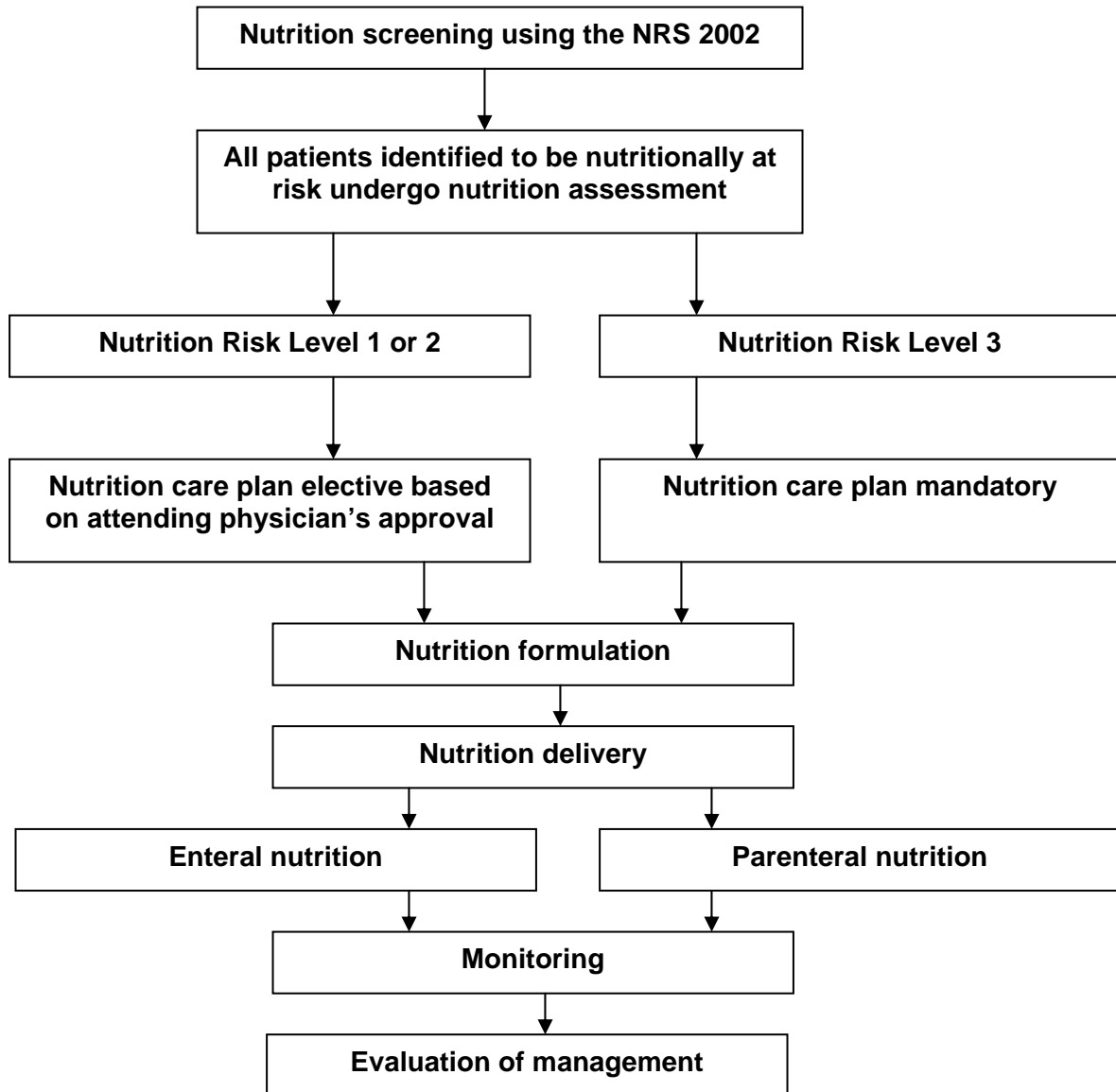
- a. A system of prioritization and follow up of patients is undertaken to ensure patients who are critically ill and at risk will be given the necessary management changes once the initial approach is ineffective, slow in response, or fails.
- b. The system is basically composed of the following data:
 - i. Fluid balance
 - ii. Calorie balance
 - iii. Laboratory and ancillary exam data
 - iv. Progress notes
- c. Regular consultations will be done by the nutrition support team and the attending physician and/or team of specialists

7. TERMINATION OF THERAPY (Guidelines/Procedures)

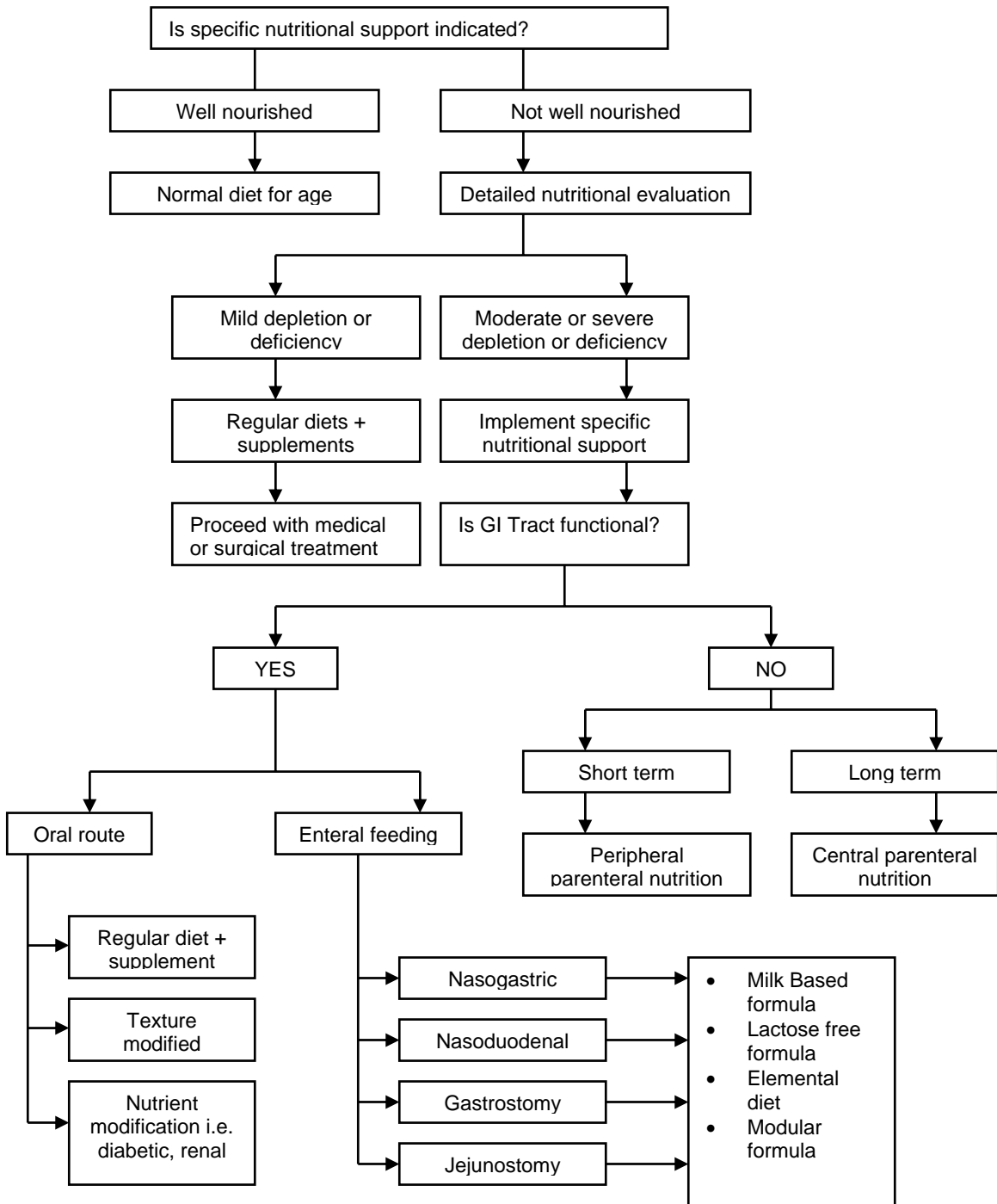
- a. The patient should demonstrate the ability to tolerate and utilize enterally administered nutrients or to ingest and utilize adequate oral nutrients prior to the termination of parenteral nutrition support.
- b. Adequate oral intake should be demonstrated prior to termination of specialized nutrition support.
 - i. When appropriate, specialized nutrition support should be gradually decreased as oral intake increases so that overall adequate nutrient intake is sustained (**e.g. $\geq 75\%$ of calculated nutrient needs.**
 - ii. If daytime oral nutrient intake is suboptimal it may be supplemented by nocturnal administration of specialized nutrition support.
 - iii. Adequate oral nutrient intake should be documented.
- c. Specialized nutrition support should be modified or discontinued when indicated by the severity or magnitude of associated complications.
- d. Specialized nutrition support should be terminated when the patient no longer benefits from therapy.
- e. Protocols shall provide latitude of clinical judgement in permitting the discontinuation of specialized nutrition support in accordance with local practice standards and current local, state and federal law.



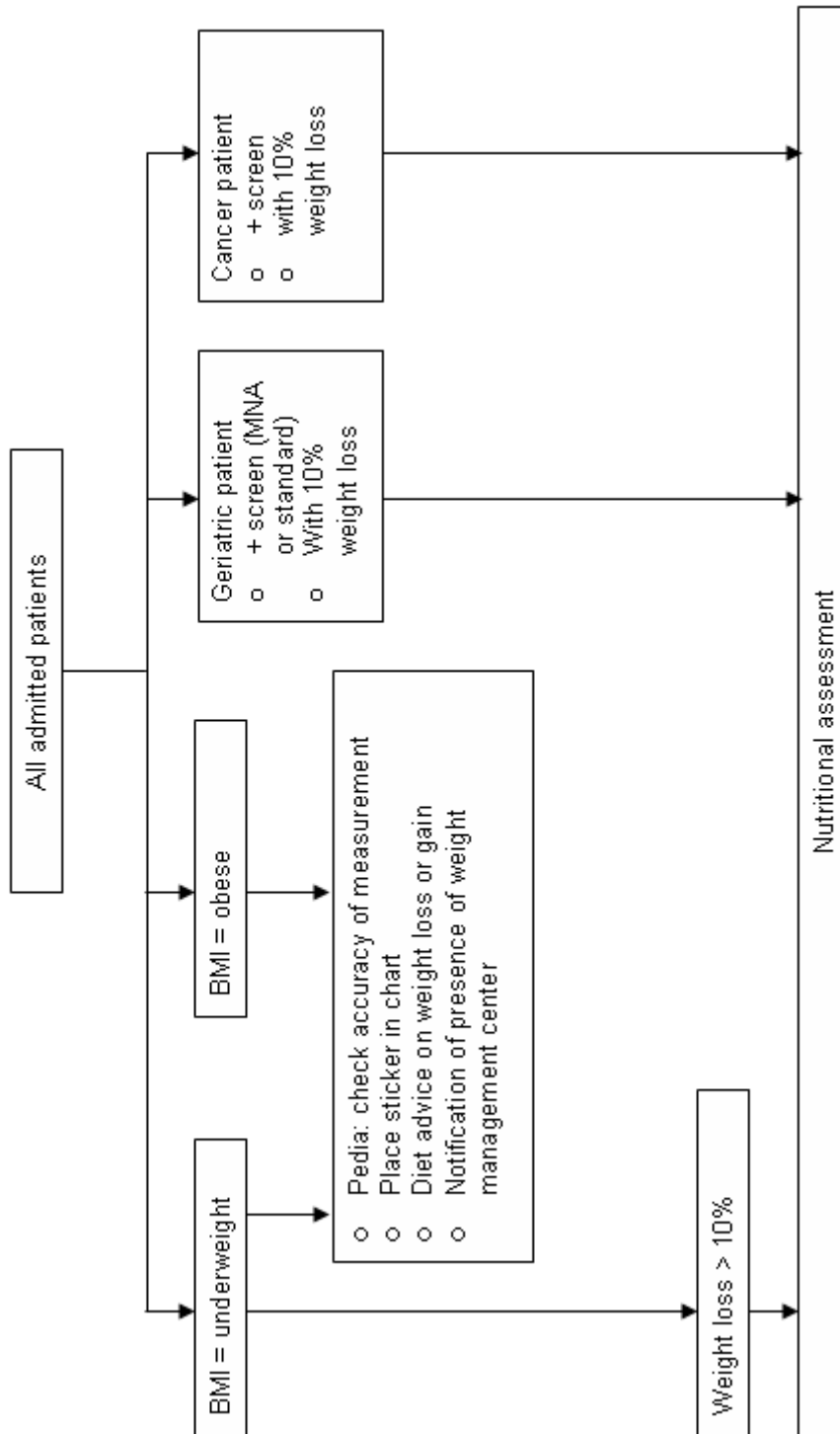
FLOW OF THE CLINICAL NUTRITION PROCESS (ADULT AND GERIATRIC):

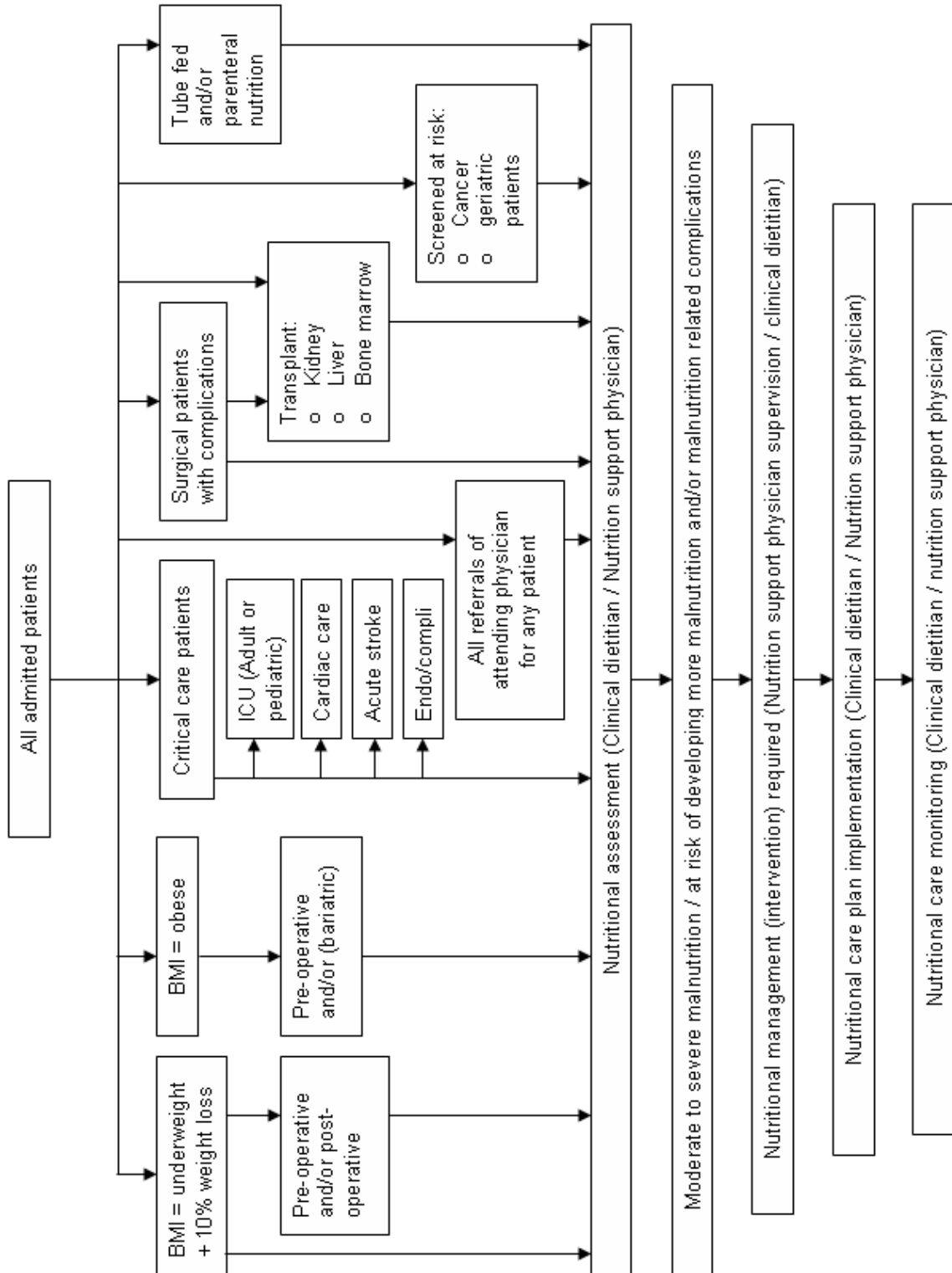


FLOW OF THE CLINICAL NUTRITION PROCESS (PEDIATRICS):



CLINICAL PATHWAYS FOR THE NUTRITION CARE PROCESS





DEFINITION OF TERMS

1. Policy – a definite course of action adopted for the sake of expediency, facility, etc.; a course of action adopted and pursued by a government, ruler, political party, etc. (as in “Honesty is the best policy”) (1).
2. Protocol - the customs and regulations dealing with the ceremonies and etiquette of the diplomatic corps, others at a court or capital, the military, etc (1).

SUGGESTED PRINCIPLES AND POLICIES IN CLINICAL NUTRITION:

1. Principles in standards of care in nutrition support:
 - a. All admitted patients should receive adequate and appropriate nutrition.
 - b. A Nutrition Committee should be organized in order to develop policies, protocols, and guidelines for the delivery of adequate nutrition to all admitted patients.
 - c. Regular evaluation of standards of care should be done to continuously improve the delivery of adequate nutrition to all admitted patients.
2. Policies in nutrition support:
 - a. Nutrition committee should be organized.
 - b. Standards of care based on high quality practice should be adopted and implemented.
 - c. A nutrition support team is able to provide the best standard of care to admitted patients identified to need more intensive nutrition support care (2).
 - d. Nutrition screening should be done on all admitted patients
 - e. Nutrition assessment should be done on all identified malnourished or nutritionally at risk patients as revealed in the nutrition screening process.
 - f. Nutrition care plan should be made for all patients identified to need closer nutrition support supervision. These patients are:
 - i. Critical care patients
 - ii. Enteral nutrition patients
 - iii. Parenteral nutrition patients
 - iv. Transplant patients
 - g. Nutrition care plan implementation should follow the following steps:
 - i. Nutritional status documentation
 - ii. Nutrition requirement determination
 - iii. Nutrient formulation and access
 - iv. Monitoring schedule
 - h. Enteral nutrition needs protocols and guidelines in preparation, delivery, and monitoring based on highest standards.
 - i. Parenteral nutrition needs protocols and guidelines in preparation, delivery, and monitoring based on highest standards.
 - j. Monitoring should include variables that indicate patient status or progress in the following areas: nutritional status, adequacy of intake, body response to both nutrition support and over-all management
 - k. Ethical issues on nutrition support on terminal illness or inability to go back to basic life function mainstream.

Reference:

1. Webster’s Encyclopedic Unabridged Dictionary of the English Language, Portland House, New York, 1989.
2. Merritt R. Integration of nutrition support into patient care, Introduction. Merritt R (editor in chief). The A.S.P.E.N. Nutrition Support Practice Manual, 2005: xviii.

Policies on the Clinical Nutrition Program Processes

1. Policy on the Organization of the Clinical Nutrition Program

General Policy: The Nutrition Support Services will be organized by the Nutrition Committee whose members are appointed by the Medical Director with concurrence by the Board of Trustees which shall function to determine all patients admitted to the hospital to be nutritionally high risk for developing malnutrition and its complications and shall establish written policies and procedures for total nutrition care which includes methods to improve nutrition support and the provision of parenteral and enteral nutrition to these identified patients.

Specific Policies:

1. The implementing arm of the Nutrition Support Services will be the Nutrition Support Team whose members are chosen by the Nutrition Committee. The Nutrition Support Team is composed of the following:
 - Head of the Nutrition Support Team – who may or may not be the Head of the Nutrition Committee
 - Members:
 1. Physicians – clinical nutrition specialists or if none, the committed physician on the practice of clinical nutrition
 2. Clinical Dietitians – or if none, assigned by the administration
 3. Nurses – assigned by the administration
 4. Pharmacists – assigned by the administration
2. These are the main functions of the Nutrition Support Services:
 - To establish written policies and procedures for nutrition care including the provision of parenteral and enteral nutrition. These policies should be published with the input and review of all members of the Nutrition Support Team and Nutrition Committee. Specific areas are:
 1. All nutrition support management procedures
 2. How to prepare and deliver enteral and parenteral nutrition
 - The policies and procedures shall be reviewed periodically and revised as appropriate to ensure optimal standards of care.
 - To regularly review performance of nutrition care, patient outcome data, cost of services, and appropriately report the findings. The review of performance should assess the appropriateness and effectiveness of the administration of specialized nutrition support for individual patients.
 1. Performance of nutrition care process:
 - Nutrition screen and assessment results
 - Safety and efficacy of enteral and parenteral nutrition
 2. Patient outcome data
 - Monitoring data
 - Goals achieved or failures
 3. Quality of life
 - Morbidity and mortality
 4. Cost of services
 - Cost effectiveness
 - The nutrition support service shall incorporate performance improvement mechanisms to initiate policy, procedure, and protocol changes, that enhance the safety and efficacy of parenteral and enteral nutrition with the goal of improving organizational performance.

3. To implement the JCIA based Nutrition Support Management Program.

- As an integral part of the Nutrition Support Process in the documentation phase, the Nursing Service Office shall see to it that the following forms are available all in the units of the hospital:
 - a. Nutrition screening forms
 - b. Nutrition assessment forms
 - c. Nutrition care plan forms
 - d. Nutrient intake monitoring forms
- The Medical Records Department together with the Nutrition Support Services department will determine the proper location of the above forms in the patient's chart. It is recommended that these should be part of the "active chart" in order to have a faster way of following up the patient's status and care giving process.

2. Policy on Nutrition Screening

General Policy: All patients admitted to the hospital for a specified length of stay shall undergo a nutrition screening process using subjective and/or objective criteria

Specific Policies:

1. Initial screening mechanism will utilize the following criteria:
 - Body Mass Index
 - Weight loss of 10% or more or severe weight loss. Severe weight loss is indicated by the following:
 1. >2% weight loss in one week
 2. >5% weight loss in one month
 3. >7.5% weight loss in three months
 4. >10% weight loss in six months
2. These are the procedures to be done in obtaining the data for the screening process:
 - All patients admitted in the hospital will have their heights in meters and weights in kilograms taken at the specific units where they are admitted using standardized stadiometers and regularly calibrated weighing scales which is to be regularly done at three month intervals.
 - The Nutrition Support Computerized Database Program will generate a list of all patients with Body Mass Index values indicating underweight (BMI below 18.5), overweight (BMI of 25.5 – 30) and obese (BMI of 30 and above) nutritional status and provide the patient records with Nutrition Stickers indicating their current body mass index value, nutritional status, ideal body weight, suggested calorie and protein requirements.
 - History of 10% weight loss or severe weight loss will be determined by the intern, resident, and fellow in charge and this data will be encoded either in the patient record or in the Nutrition Support Database.
3. The results of the screening mechanism will be made available on a daily basis in the form of the following:
 - Nutrition Surveillance report which should be available and given to the Nursing Office and Nutrition Support Team.
 - Nutristat screening data in the patient's chart should be accomplished within 24 hours by the nurse, clerk, or intern in charge.

3. Policy on Nutritional Assessment

General Policy: All patients identified as nutritionally at risk by the patient screening mechanism

shall undergo a formal nutrition assessment. It shall be documented and be available to all patient care providers.

Specific Policies:

1. Nutritional Assessment form: this simplified but comprehensive form will be the formal assessment document of the patient. This will be performed on all nutritionally at risk patients identified by the nutrition screening process of the Clinical Nutrition Program. This should be accomplished within 24 hours by the members of the Nutrition Support Team.
2. These are the elements of the Nutrition Assessment form:
 - Subjective Data: a series of check lists based from data components of the Subjective Global Assessment assessment form.
 - Objective Data:
 1. Height, weight and Body Mass Index
 2. Weight loss
 3. Total Lymphocyte Count (TLC)
 4. Albumin

4. Policy on Nutrition Care Plan Development

General Policy: The nutrition care plan shall be developed with an interdisciplinary approach involving the nutrition support team, the patient's physician, and other health care personnel. The patient and/or family should be included in the development of the nutrition care plan

Specific Policies:

1. The objective(s) of nutrition care shall be determined and documented. This should include: immediate and long term goals of nutrition therapy, anticipated duration of therapy, and discharge planning and/or home training
2. The nutrition care plan should address patient/family education about nutrition support therapy and involvement in decisions regarding goals of nutrition management.
3. The Nutrition Care Plan form incorporates the clinical nutrition pathway in the nutrition management of the patient which contains the following:
 - a) Nutritional requirement data: mainly the computed calorie and protein requirements for the day; the ratios of the non-protein calorie may also be addressed in this part of the form.
 - b) Nutrition formulation data: all issues on the feeding to be given.
 - The selected feeding formulation shall be appropriate for the patient's disease process and compatible with the route of access.
 - The feeding formulation shall be adjusted as appropriate in patients with organ dysfunction
 - The prescription shall be appropriate for the route of access
 - When similarly effective formulations are available the least costly should be selected
 - Need for modification of electrolytes, vitamin, trace element contents
 - Need to add nutraceuticals like: glutamine, omega-3-fatty acids, arginine, and newer combinations
 - Essentially the formulation choices are the following:
 - Oral diet
 - Oral supplements
 - Tube feeding (enteral nutrition)
 - Intravenous feeding (parenteral nutrition)
 - c) The route selected to provide nutrition support shall be appropriate to the patient's

medical problems. These are:

- Oral
 - Tube feeding:
 - a. Nasogastric tube
 - b. PEG tube
 - c. Jejunostomy
 - Intravenous feeding
 - a. Peripheral route
 - b. Central route
 - These are the principles to be applied in the access/delivery route
 - When both functional and available, the GIT is the preferred route for nutrition support and should be used for administering nutrition support.
 - Patients requiring nutrient needs greater than those which can be met through the GIT should receive parenteral supplementation
 - Parenteral nutrition support should be provided when the GIT either is non-functional or can not be accessed
 - The mode of nutrition support shall be periodically reassessed for adequacy, appropriateness and efficacy
- d) Delivery – a decision has to be made on the aspects of enteral and parenteral nutrition whether to use bolus or pump driven; continuous or cyclic or intermittent.
- e) Monitoring to be done which are the following:
- Calorie counting, including the frequency of reporting
 - Weight monitoring
 - Fluid balances
 - Laboratory parameters

5. Policy on the Nutrition Care Plan Implementation

General Policy: Implementation of the nutrition care plan should commence following nutritional assessment and plan development.

Specific Policies:

1. Nutrition care plan shall have a defined ordering process which shall be as follows:
 - a. Verbal prescription/orders for food or nutrition products shall be accepted only by personnel designated by institutional policy and authenticated by the prescribing/ordering practitioner within a defined period of time
 - b. Prescription orders for food or nutrition products should be in the patient's medical record before any food or nutrition product is administered
2. Access for specialized nutrition support shall be achieved and maintained in a manner that minimizes risk to the patient
 - a. Access devices shall be placed by or under the supervision of a physician, nurse, or specially trained health care professional who is proficient in placement
 - b. Standard techniques and protocols shall be established and followed for access procedures
 - c. Proper placement of both venous catheters and enteral access devices shall be appropriately confirmed before being used
 - d. Complications related to access by venous or enteral route shall be clearly documented in the medical record. Outcome of actions shall be documented.
 - e. Protocols shall be established for the routine care of access devices

3. Parenteral and enteral feeding formulations shall be prepared accurately and safely as prescribed
 - a. Parenteral and feeding formulations shall be prepared using current and periodically updated policies and procedures regarding manufacturing, compatibility, and stability and be supervised by a responsible health care professional
 - b. Personnel using automated equipment for the preparation of parenteral nutrition admixtures shall be trained. Training should include: education on daily operation, appropriate sequencing of additives, periodic calibration, and maintenance of the machine.
 - Adequate training of personnel regarding software should occur to assist with daily use and trouble-shooting
 - Any output generated by a compounder regarding prepared admixtures shall be checked against the programmed admixture and weight of components
 - The operator of the equipment shall continuously monitor it during the preparation process to assure the proper operation of all aspects of the machine
 - c. Parenteral nutrition admixtures shall be sterile
 - Parenteral nutrition admixtures shall be prepared in a laminar or vertical air flow hood by an individual accomplished in aseptic technique and under the direction of the pharmacist
 - The preparation area should be a controlled room with limited access to decrease potential contamination
 - Aseptic technique shall be taught, used, and evaluated on a periodic basis
 - d. The final formulation shall be checked visually by a pharmacist to assure appropriate volume, lack of particulate matter (cores, etc) and precipitation
 - e. All parenteral nutrition admixtures shall be prepared in compatible containers and should be administered with a filter
 - f. Policies and procedures shall be established regarding subsequent, postpreparation, additions to the parenteral feeding formulation to assure sterility and compatibility
 - g. Enteral formulations shall be prepared to prevent contamination and promote safety and accuracy
 - i. Each enteral feeding formulation shall be prepared by trained personnel under professional supervision, in a clean environment, using, as minimum requirements, those standards established for kitchen personnel in handling food
 - ii. Infant formula preparation shall comply with published standards
 - iii. Preparation equipment shall be sanitized regularly
 - h. Policies and procedures shall be established regarding subsequent additions to enteral feeding formulation made after the initial preparation including dilution of formula and addition of medications
4. Parenteral feeding formulations shall be appropriately packaged and labeled
 - a. Parenteral nutrition formulations shall be packaged in containers that can assure maintenance of sterility and allow visual inspection during the preparation, storage, and administration
 - b. The formulations shall be visually inspected during preparation, prior to hanging, and during administration to identify potential incompatibilities of the formulation (i.e. calcium/phosphorus precipitation)
 - c. The formulation shall be labeled with the patient's name, additives, rate of

- administration, expiration date and time, composition
- d. The formulation should be stored at 4°C.
- 5. Enteral feeding formulations shall be packaged in containers that assure cleanliness and accuracy of delivery
 - a. Enteral feeding formulations shall be labeled with the patient's name, the product name, strength, additives, volume, and expiration date
 - b. Prepared enteral feeding formulations should be stored at 4°C in tamper proof containers
- 6. Additives of parenteral and enteral feeding formulations shall be compatible with all ingredients
 - a. Health care professionals responsible for the preparation and delivery of parenteral and enteral feeding formulations shall have resources available to document compatibility and stability of any additive
 - b. Addition of any electrolyte to a parenteral nutrition formulation after it has left the IV admixture department should be discouraged
 - c. The addition of calcium and phosphate to parenteral nutrition formulations should comply with guidelines in the literature
 - d. Calcium gluconate and phosphate salts should not be added in close sequence or consecutively to the parenteral nutrition formulation
 - e. Phosphate should be added prior to the addition of calcium and other additives to an admixture
 - f. Some amino acid formulations contain phosphate ions utilized in the buffering process. The amount of phosphate in these preparations should be accounted for in the calculation of calcium/phosphorus solubility
- 7. Parenteral and enteral feeding formulations shall be administered accurately in accordance with the prescribed therapeutic plan and consistent with the patient's tolerance. They shall be administered by or under the supervision of trained personnel
 - a. Administration of parenteral and enteral feeding formulations shall be documented
 - b. The label on the feeding formulation shall be checked prior to administration of the formulation to be certain the ordered formulation is given to the appropriate patient
 - c. The rate of administration shall be checked each time a new volume of feeding formulation is ordered and periodically during its administration
- 8. Protocols shall exist regarding techniques used to administer enteral and parenteral feeding formulations
 - a. Protocols should exist to prevent tube or catheter occlusion
 - b. A protocol shall exist to prevent infection of the patient secondary to the feeding formulation and equipment used in its administration
 - c. A protocol shall exist regarding the appropriate hang time for enteral and parenteral feeding formulations

6. Policy on Nutrition Care Monitoring

General Policy: The patient shall be monitored for therapeutic and adverse effects and clinical changes that may influence nutrition therapy

Specific Policies:

1. Protocols should be developed to obtain baseline information, and for periodic review of the patient's clinical and laboratory status
2. In stable patients, monitoring may occur weekly, or as indicated.
3. For critically ill patients, daily or more frequent monitoring may be required.
4. Routine monitoring should include:

- a. physical assessment including clinical signs of fluid and nutrient deficiency and excess
 - b. actual nutrient intake (oral, enteral, and parenteral)
 - c. weight
 - d. laboratory data:
 1. CBC
 2. glucose
 3. BUN
 4. creatinine
 5. electrolytes like calcium, magnesium, phosphorus
 6. liver function tests
 7. triglycerides
 8. serum proteins)
 - e. assessment of major organ function
 - f. tolerance of nutrition therapy such as:
 1. gastrointestinal tolerance
 - such as gastric residuals
 - presence of bowel sounds
 - stool frequency and consistency
 - presence of abdominal distention
 - nausea and vomiting
 2. substrate tolerance such as:
 - hyperglycemia or glucosuria
 - serum clearance of lipid emulsions
5. Laboratory abnormalities and alterations in organ function and resulting changes in nutrition therapy (formulation and/or route) shall be documented
 6. Signs and symptoms of intolerance shall be documented. Results of action taken and outcomes shall be noted
 7. Monitoring protocols shall include visual inspection of enteral and parenteral access devices and formulations, and monitoring of temperature and laboratory data as indicated if infection is suspected
 8. The patient shall be monitored for achievement of immediate and long term goals of nutrition therapy as defined in the nutrition care plan
 - a. Routine monitoring and documentation should include: weight change, adequacy of intake, transition to oral diet, improvement in laboratory data, and improvement in functional status and performance.
 - b. The monitored parameters should be periodically compared to the goals of the nutrition care plan and documented
 9. The above data are documented in the:
 - a. Nutrition and Fluid Balance form – includes the following:
 1. Fluid balance
 2. Nutrient balance which is composed of:
 - Calorie balance
 - Protein balance
 - b. Nutrient Intake Monitoring form
 1. Total calorie requirement
 2. Actual calorie intake
 3. % calorie intake
 4. Total protein requirement
 5. Actual protein intake

- 6. % protein intake
- 7. Source of intake
- c. Dietitian's Nutrition Progress Notes (not included in the patient's chart)
- d. Nutrition Management Database Computer Program.

7. Policy on Reassessment and Updating of the Nutrition Care Plan

General Policy: Periodic reassessment of the patient's nutrition status should be performed. This information should be evaluated in conjunction with the patient's baseline assessment and desired goals

Specific Policies:

1. Reassessment should include evaluation of the patient's clinical status, laboratory parameters, anthropometric measurements, changes in nutrient intake or route of administration, and benefits of nutrition support
2. These data are placed in the:
 - a. Nutrient Monitoring Sheet
 - b. Nutrition Database Computer Program
3. Frequency of reassessment is determined by the patient's disease or condition, medical stability, tolerance of nutrition therapy, and achievement of goals.
4. Policies and procedures should provide general guidelines for frequency of reassessment for given patient populations and nutrition therapies
5. Reassessment and the resulting changes in the nutrition care plan shall be documented

8. Policy on Termination of Therapy

General Policy: The patient should demonstrate the ability to tolerate and utilize enterally administered nutrients or to ingest and utilize adequate oral nutrients prior to the termination of parenteral nutrition support

Specific Policies:

1. During the transition to enteral nutrition, parenteral nutrition should be continued while enteral nutrition is increased
2. Adequate oral intake should be demonstrated prior to termination of specialized nutrition support
 - a. When appropriate, specialized nutrition support should be gradually decreased as oral intake increases so that overall adequate nutrient intake is sustained (e.g. $\geq 75\%$ of calculated nutrient needs)
 - b. If daytime oral nutrient intake is sub-optimal it may be supplemented by nocturnal administration of specialized nutrition support
3. Specialized nutrition support should be modified or discontinued when indicated by the severity or magnitude of associated complications
 - a. Protocols shall be developed to identify mechanical, metabolic, and infectious complications necessitating interruption of nutrition support
 - b. Protocols should describe safe methods to terminate nutrition support
4. Specialized nutrition support should be terminated when the patient no longer benefits from therapy
 - a. Protocols shall exist to deal with the following conditions where nutritional therapy has no added benefit except for maintenance of basic life processes
 - i. irreversible neurologic damage
 - ii. untreatable cancer
 - iii. severe intractable end organ failure

- iv. conditions not likely to benefit from nutrition therapy.
 - b. Patients or their designated representative should be involved in decisions regarding the withdrawal of nutrition support
 - c. Protocols shall provide latitude of clinical judgment in permitting the discontinuation of specialized nutrition support in accordance with local practice standards and current, local, state and federal law
5. Nutrient Monitoring Sheet and documentation in the patient record progress notes shall contain the above information and should indicate the following:
 - a. Goal achievement in nutrient intake – success or failure
 - b. Target value when to stop parenteral nutrition in multisource nutrient support (currently accepted target goal of oral and or enteral intake for terminating parenteral nutrition - @75% of total caloric requirement)

References:

- The A.S.P.E.N. Nutrition Support Practice Manual. Merritt R. Editor in chief. 2nd edition, American Society of Parenteral and Enteral Nutrition; Silver Spring, MD; 2005.
- Nutrition Support Dietetics Core Curriculum, 2nd Edition, American Society of Parenteral and Enteral Nutrition; Silver Spring, MD; 1993.