Organisation of Nutritional Care. Ethical and Legal Aspects

Topic 11

Module 11.1.

Organisation of a Nutrition Support Team

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Learning objectives

- To understand the importance of optimising nutritional care
- To understand the benefits of a multidisciplinary approach to nutritional care
- To identify the benefits of a nutrition support team
- To recognize the key characteristics of a nutrition support team
- To identify the different types of nutrition support teams
- To be familiar with the individual tasks of nutrition support team members

Contents

Key messages

- A nutrition support team is a multidisciplinary team consulted to manage patients with complex nutritional needs (enteral and parenteral) which serves the primary responsibility of assuring that the patients receive optimal nutrition support
- The core members of a nutrition support team are a physician, a dietitian, a nurse and a pharmacist
- A nutrition support team can have different tasks (ranging from bed-side activities to developing protocols), depending on the size and the goals of the team
- The tasks of a nutrition support team may change over time

1. Introduction

A significant number of patients is still undernourished on admission to hospital, and some patients continue to lose weight during their hospital stay. In the second half of the last century, it was recognized that appropriate nutritional intervention could improve clinical outcome, and shorten length of stay, as well as confer qualitative and financial benefits. The first nutrition support team (NST) was established in the US, in 1973, followed by teams across Europe.
In 1992, Simon Allison defined a NST as a: “Team of different disciplines with good communication which enables nutritional support to be given in the best manner for each patient. Such a team improves the quality of treatment and reduces costs by avoiding unnecessary treatments and simplifying the treatments used; reducing complications; monitoring use of nutrients and outcome of treatment; reducing waste; and standardising nutrients and equipment to enable bulk purchase and negotiation of competitive rates” (1). This definition and these expectations remain current.

In the years following, the benefits of nutritional support and a multidisciplinary approach were well documented. An interdisciplinary team was confirmed to provide nutrition care more effectively than individuals acting independently. With NSTs, patients’ energy requirements were more likely to be met and mechanical as well as metabolic complications of nutritional therapy were reduced (2;3). For example, patients on parenteral nutrition monitored by a NST, were found to have a significantly lowered incidence of catheter-related and metabolic complications (4). The economic benefits of setting up an NST have been extensively documented in other manuscripts (5-8). This module describes the organization of a NST.

2. Establishing a nutrition support team

Setting up and running a NST can be challenging and time-consuming and demands clarification of roles and responsibilities. There are many potential hazards which must be anticipated and proactively managed if the team is to be successful. The key to this success lies in effective clinical service provision, high quality communication, and providing explicit added value to the organization (9;10).

Our experience is that it wise to involve as many disciplines as are interested, to create a basis of support. Key stakeholders will be appointed from the group, who will mostly be people with good prior knowledge of the evidence. The core members of a nutrition support team usually consist of a (senior) physician (eg surgeon, intensivist,

gastroenterologist), dietitian, nurse and pharmacist (9;11). Next to the 'core team', a finance manger, general manager, nurse staff member, supplies member, catering officer, clinical therapist, pathology representative, senior doctor, may all be involved either on a permanent or on an *ad hoc* basis **(figure 1)** (9). In the establishment of a NST the absolute number of disciplines is of secondary importance, but disciplines often required in nutritional therapeutic interventions, such as surgery and gastroenterology, must be present in the hospital (12).

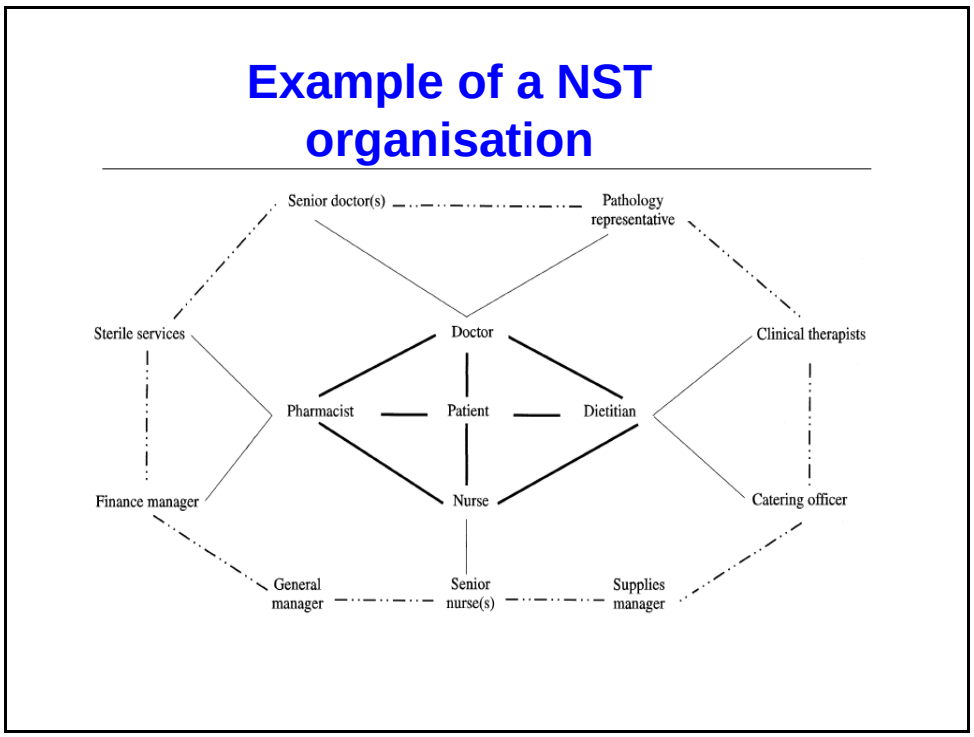

Fig. 1. Nutritional steering committee, clinical support team membership, and operational relationships. Copies (with permission) from Howard 2001 (9)

We have experienced the roles of the team changing over time. For example: when PEG-tubes were introduced, 10 to 15 years ago, the NST supervised this new process. Guidelines were written, procedures standardised, and the patients were monitored by the team members. After a few years, this process had become daily clinical practice and the responsibilities were transferred to the gastroenterology department; their nurses took care of the materials, their dietitians of the nutritional requirements of the patients. The complete process of home enteral nutrition was standardised. The NST then found time to pick up new challenges, such as computer aided nutritional support on the Intensive Care Unit.

3. Vision and Goals

A NST is consulted to manage patients with complex nutritional needs (enteral and parenteral)
and serves the primary responsibility of assuring that the patients receive appropriate nutritional support by the appropriate route. An important principle in assuring the quality and improving the performance of a NST is establishing a team vision and shared performance goals. A strategic plan is an important determinant for success and, if properly developed, will demonstrate what achievements have been made and what still needs to be done (9;10)

Goals of a NST

- **preventing and treating hospital malnutrition**
- **reducing or avoiding metabolic complications**
- **reducing complications related to nutrition**
- **reducing mechanical complications**
- **developing clinical nutrition guidelines**
- **monitoring and evaluation of nutrition therapy**
- **collecting data on the effectiveness (and side effects) of artificial nutrition**
- **being a centre of knowledge**
- **sharing knowledge with others**

Tab. 1. Goals of a NST

1. Preventing and treating hospital malnutrition.

A NST can play a role in the early recognition of malnutrition by, for example, standardizing the screening process, describing which patients need nutritional support, standardizing referral of patients at risk of malnutrition to the dietetic department or the nutritional support team respectively, monitoring the process of nutritional support, ensuring adequate nutrition reaches each individual patient.

2. Reducing or avoiding metabolic complications.

Giving a patient artificial nutrition is not without risks. The patients may experience metabolic disturbances, including hyperglycaemia or hypoglycaemia, micronutrient disturbances, water and electrolyte disturbances (e.g. refeeding syndrome),

hypertriglyceridaemia, or parenteral nutrition-associated liver steatosis. Both nutrient deficiencies and overfeeding represent a metabolic burden. Careful and regular measurement of serum and sometimes urinary parameters are important for preventing (acute) metabolic complications.

3. Reducing complications related to nutrition

Both parenteral and enteral nutrition may cause complications. These include not only disturbances in carbohydrate or lipid metabolism (often associated with parenteral nutrition), but also diarrhoea, constipation, vomiting or aspiration (often associated with enteral nutrition). The NST discusses these nutrition-related complications from an interdisciplinary perspective and provides the treating physician with solutions to solve them.

4. Reducing mechanical complications

Standardisation of procedures for supplying artificial nutrition reduces complications. These procedures include criteria for the choice of central venous catheters, nasogastric or nasojejunal tubes, and protocols for the frequency of dressing and changing giving sets. In addition the protocols describe how the different catheters and tubes can, or should, be used. Reducing mechanical complications (e.g. catheter sepsis, catheter or tube occlusions, drug interactions), standardisation of equipment and materials can result in significant improvement in patient safety and to economic savings.

5. Developing clinical nutrition guidelines

Clinical practice guidelines can help reduce the risk of complications and provide clinicians with consistent methods for carrying out patient care activities. Parenteral and enteral nutrition are examples of high cost therapies from which benefit, set apart from the treatment of the primary disease, is difficult to discern. Development and use of an evidence-based clinical guideline is one way to ensure that a NST is using (par)enteral nutrition safely (11). For example, short-term parenteral nutrition given to patients who are not malnourished may even be harmful, and this should be avoided. The team provides guidelines on which patients will benefit from parenteral nutrition (PN) and which not, taking into account enteral (im)possibilities, contra-indications, nutritional status, expected duration of PN, patient prognosis, etc. For any kind of nutritional support, the team recommends the optimal amount and type of nutrition, based on individual calculations, the means of delivery, and the most appropriate route of administration. Computer assisted prescribing programs may be helpful to calculate a patient's individual needs.

6. Monitoring and evaluation of nutrition therapy

Besides initiating and developing nutrition guidelines a NST can monitor and evaluate nutritional therapy to ensure that it is optimal. This is critical to assuring and improving nutritional care; it can then be determined whether a change in practice results in an improvement. Improving the quality of nutritional support requires that the nutrition support team measures performance after goals have been established. Team goals can continually be evaluated to determine whether further changes better meet patients' needs (11). Improved technology, electronic communication and computer assisted nutrition programmes can contribute to this (**figure 2**).

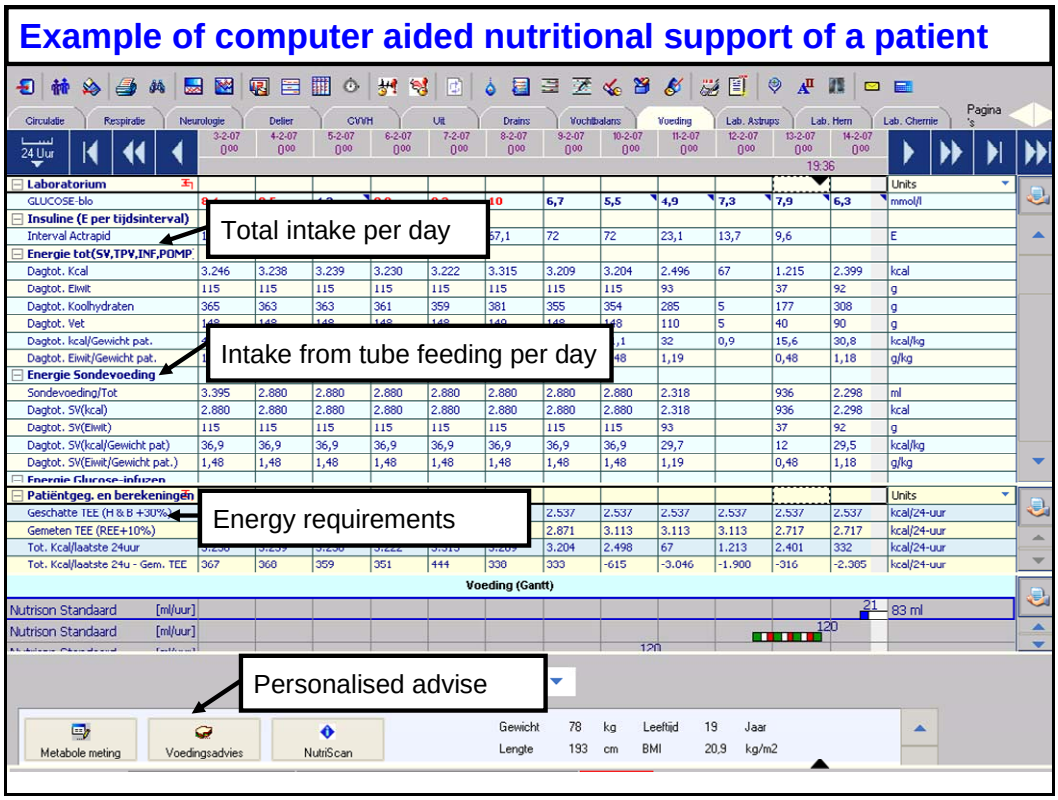

Fig. 2. Computer aided nutritional support

7. Collecting data on the effectiveness (and side effects) of artificial nutrition reveals that nurses and physicians often do not get the opportunity to build up experience with patients on artificial nutrition, because they sometimes treat only a few patients per year. One of the advantages of a nutrition support team is that they can monitor all patients on artificial nutrition, thus creating a database of knowledge. Bed-side nutrition support teams usually keep a database including the indication for nutrition, length of feeding, complications, effectiveness of nutritional therapy, etc. This database may serve as a starting point to improve clinical guidelines (e.g. in the case of a high percentage of catheter-related sepsis) or to initiate research.

8. Being a centre of knowledge

Relatively few patients admitted to hospital are given enteral or parenteral nutrition. Standardized procedures and the involvement of healthcare professionals who are knowledgeable about this complex form of therapy improve the quality of nutritional support. The nutrition support team acts as an 'oracle' for all kind of questions on nutritional support, varying from questions on delivery sets, formulas, monitoring, drug-nutrient interactions etc. One of the core jobs of the team is the dissemination of its knowledge to the doctors and nurses who are responsible for the daily treatment of patients. Preferably, they educate a nurse and a doctor in every clinical ward to be an extended member of the team, to enhance implementation of the procedures and guidelines at the bedside.

9. Sharing knowledge with others

NST members are front-runners in nutritional support. They have the responsibility to create awareness of the problem of disease-related malnutrition, to teach nurses, dietitians and doctors in training, to share their knowledge at symposia and congresses, and to publish their knowledge in guidelines, handbooks, e-learning modules, etc. Only then does adequate nutritional support becomes available to everybody.

4. Types of Nutrition Support Teams

Although the core members of the team are the same almost everywhere (medical doctor, dietitian, nurse and pharmacist), the size of the team depends on the size of the hospital, the scope of the hospital, the number of patients cared for, the budget and other activities of the team (3). Several types of NSTs can be identified. Depending on the overall vision and goals of the hospital and the NST, one of the following models, or a combination of them, can be useful within the organization:

1. bedside teams

The bedside team is the most 'classical' form of a NST. At least a nurse and a dietitian make rounds on wards on several days per week. They advise the treating physician and nurse on the indication for nutritional support (enteral or parenteral, administration route, etc.), they document the patient's nutritional status and metabolic situation, and they help to identify when the advancement to oral nutrition is possible. Preferably, their rounds are attended by a nutrition support physician.

The final decision on the amount and the form of nutritional support is normally the responsibility of the treating physician, but in some countries (e.g. the Netherlands, UK, Scandinavia), the responsibility for prescribing (par)enteral nutrition can be extended to the dietitian, pharmacist and/or nurse of the NST.
Weekly meetings are held with the complete team, where complex patients are discussed. Other aspects that are discussed during those meetings are: research, protocols, composition of enteral and parenteral formulas, and registration of nutritional support.

Fig. 3. Nurse checking a TPN bag

2. nutrition steering committees

When hospitals do not have finances to hire a dietitian and nurse specially appointed to the nutrition support team, a Nutrition Steering Committee (NSC) could be formed to perform nutrition support functions. This committee does not fulfil bedside tasks, but it does have the expertise required to 'steer' the nutrition care process, for example by providing protocols, standardising formulas and equipment, and monitoring the quality of the nutrition support given. NSCs can be useful in helping to raise the profile of nutrition within the organization. A NSC will include representatives from many different disciplines including clinicians, managers and senior nurses. An NSC can be a source of both information and support for a new NST and it will complement the clinical remit of a NST. Ideally, both groups should be established within any hospital organization.

3. nutrition groups

Nutrition groups work at a far distance from individual patients. They take care of standardisation of the products, and sometimes they also provide guidelines, but they do not primarily function as a group of experts and they do not teach.

A nutrition group is usually a committee which implements artificial nutrition in a certain framework for the hospital organization.

5. Individual tasks

Nutrition support is a collaborative responsibility between the nutrition support service and the multiple disciplines involved with patient care, including at the very least physicians, dietitians, nurses, and pharmacists. Specific functions must be performed in order to assure high quality nutritional outcomes **(table 2)**.

Nutrition care functions

- **Nutrition assessment**
- **Determine the severity of malnutrition**
- **Determine protein and energy needs**
- **Enteral and parenteral nutrition indicated appropriately**
- **Assess the adequacy of access for nutrition therapy**
- **Initiate and manage enteral and parenteral nutrition**
  - **Complete orders**
  - **Document in patients record**
  - **Daily patient assessment**
  - **Recommended changes to therapy**
  - **Transition feedings: parenteral to enteral to oral**

Tab.2. Interdisciplinary nutrition care: functions of nutrition support teams (adapted from Schneider et al 2009) (11)

Depending on the vision and goals of the NST the tasks of the various disciplines can differ between hospitals. Individual tasks can be for physicians (**table 3**), dietitians (**table 4**), nurses (**table 5**) and pharmacists (**table 6**).

Physician

- **Initiate and manage (par)enteral nutrition**
- **Promote the established nutrition therapy within the host speciality**
- **Professional input for high complex nutrition care**
- **Support ongoing research and projects on (par)enteral nutrition and highly complex nutrition therapy**
- **Carry out the importance of good nutrition therapy on the ward, towards colleagues, physicians in training, board of directors**

Tab. 3. Task for the physicians

Dietitian

- **Consultant for advice on (par)enteral nutrition (indications, choice of feeding solutions, nutrition goals)**
- **Advise about the assortment of (par)enteral nutrition and other nutrients (e.g. immunonutrition, vitamins, minerals)**
- **Edit, implement and adjust protocols on (par)enteral nutrition and also on high complex nutrition therapy (metabolic disorders, ICU, surgery etc)**
- **Development and interpretation of screening tools**
- **Initiate and perform nutritional assessment**
- **Education on (par)enteral nutrition and highly complex nutrition therapy**
- **Research on (par)enteral nutrition and highly complex nutrition therapy**

Tab. 4. Task for the dietitians

Nurse

- Consultant for advice on routes, methods and different systems for delivering (par)enteral nutrition
- Asses the adequacy of access for nutrition therapy
- Advise about the assortment of tubes, feeding pumps and (par)enteral materials
- Edit, implement and adjust protocols on methods of delivering (par)enteral nutrition (in order to establish uniformity, save costs and prevent mechanical complications)
- Education on (par)enteral nutrition and highly complex nutrition therapy
- Research on (par)enteral nutrition and highly complex nutrition therapy

Tab. 5. Task for the nurses

Pharmacist

- Logistic support on parenteral nutrition
- Supervision and knowledge of the possible chemical/pharmaceutical interactions between PN components
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- Professional input on the composition of parenteral nutrition
- Professional input on drugs/medication and interaction with (routes of) parenteral nutrition
- Support ongoing research and projects on (par)enteral nutrition and high complex nutrition therapy
- Professional input on stability and compatibility of parenteral nutrition admixtures
- Development and implementation of parenteral nutrition protocols

Tab. 6. Task for the pharmacists

Multiprofessional working must be perceived as an opportunity to integrate the unique expertise of each individual.

6. Summary

A nutrition support team is a multidisciplinary team responsible for complex artificial nutrition in hospitalized patients. The multidisciplinary approach improves the quality of treatment and reduces costs by avoiding unnecessary treatments and simplifying the treatments used. Although nutrition support teams may consist of many members, a dietitian, a nurse, a doctor and a pharmacist are generally the core members of the team. Basic tasks and responsibilities of the team are described, with a recognition that these may change over time.

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