

## Original

# Qualifying instrument for evaluation of food and nutritional care in hospital

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## Abstract

Establishing criteria for hospital nutrition care ensures that quality care is delivered to patients. The responsibility of the Hospital Food and Nutrition Service (HFNS) is not always well defined, despite efforts to establish guidelines for patient clinical nutrition practice. This study describes the elaboration of an Instrument for Evaluation of Food and Nutritional Care (IEFNC) aimed at directing the actions of the Hospital Food and Nutrition Service. This instrument was qualified by means of a comparative analysis of the categories related to hospital food and nutritional care, published in the literature. Elaboration of the IEFNC comprised the following stages: (a) a survey of databases and documents for selection of the categories to be used in nutrition care evaluation, (b) a study of the institutional procedures for nutrition practice at two Brazilian hospitals, in order to provide a description of the sequence of actions that should be taken by the HFNS as well as other services participating in nutrition care, (c) design of the IEFNC based on the categories published in the literature, adapted to the sequence of actions observed in the routines of the hospitals under study, (d) application of the questionnaire at two different hospitals that was mentioned in the item (b), in order to assess the time spent on its application, the difficulties in phrasing the questions, and the coverage of the instrument, and (e) finalization of the instrument. The IEFNC consists of 50 open and closed questions on two areas of food and nutritional care in hospital: inpatient nutritional care and food service quality. It deals with the characterization and structure of hospitals and their HFNS, the actions concerning the patients' nutritional evaluation and monitoring, the meal production system, and the hospital diets. "This questionnaire is a tool that can be seen as a portrait of the structure and characteristics of the HFNS and its performance in clinical and meal management dietitian activities."

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## VALIDACIÓN DE UN INSTRUMENTO DE EVALUACIÓN DEL CUIDADO ALIMENTARIO Y NUTRICIONAL EN HOSPITALES

## Resumen

Establecer criterios para el cuidado nutricional asegura una atención de calidad a los pacientes. La responsabilidad del Servicio de Alimentación y Nutrición Hospitalaria (HFNS) no siempre es bien definida, mismo con los esfuerzos para se establecer guías para el cuidado nutricional. Este trabajo describe la elaboración de un Instrumento de Evaluación del Cuidado Alimentario y Nutricional (IEFNC), para conocer el trabajo de los HFNS. Para la calificación de este instrumento, se hizo una análisis comparativa entre las categorías utilizadas en el y las utilizadas en las publicaciones científicas. La elaboración del IEFNC se ha cumplido en las siguientes etapas: (a) un estudio de bases de datos y documentos para la selección de las categorías que se utilizaron en la evaluación del cuidado nutricional, (b) un estudio de los procedimientos prácticos de nutrición en dos hospitales de Brasil, con la finalidad de describir la secuencia de acciones que deben ser cumplidas por los HFNS, además de otros servicios que participan del cuidado nutricional, (c) el IEFNC fue elaborado considerando las categorías publicadas en la literatura, adaptado a la secuencia de acciones observadas en las rutinas de los hospitales estudiados, (d) la aplicación del IEFNC en dos hospitales, diferentes de los que hemos citado en el ítem (b), para evaluar el tiempo invertido en su aplicación, las dificultades para comprender las preguntas, además de su alcance, y (e) la finalización del instrumento. El IEFNC es un cuestionario que contiene 50 preguntas abiertas y cerradas, dirigidas para evaluar la calidad de dos áreas: del cuidado nutricional de pacientes y del servicio de alimentación hospitalario. Es una herramienta para conocer la estructura y características de los HFNS, las acciones relativas a la monitorización y evaluación nutricional y las de producción de la alimentación y de dietas hospitalarias que son importantes para el cuidado nutricional del paciente.

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Palabras clave: *Cuidado nutricional. Alimentación hospitalaria. Servicio de alimentación hospitalaria.*

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## Introduction

Establishing criteria for inpatient nutrition care has been a major concern, since standardization of clinical nutrition practices can ensure the delivery of quality inpatient care.<sup>1-3</sup> Assigning a team to undertake the responsibility for nutrition care has been identified as an important factor for hospital care improvement.<sup>1</sup> On the other hand, the responsibility of the Hospital Food and Nutritional Service (HFNS) for nutrition care has not been well defined yet, although a lot of effort has been put into establishing guidelines for patient clinical nutrition practice.

Both the prevalence of hospital malnutrition and the increasing number of hospital admissions due to chronic diseases that require nutritional treatment justify intensification of inpatient nutrition care.<sup>4,5,6</sup> Food and nutritional care in hospital comprises sequences of actions related to patient care that involve nutritional evaluation and monitoring, and diet therapy strategies,<sup>7,8,9</sup> as well as the design, production and distribution of meals.<sup>9,10</sup> Both direct patient care and meal production are essential for nutrition care. Although it has not always been properly recognized by health care institutions,<sup>11</sup> hospital nutrition guarantees nutritional supply. Therefore, an adequate nutritional strategy can contribute to making hospitalization a more agreeable experience.<sup>12</sup>

Standard nutrition care practices can ensure quality care. In 1987, the American Dietetic Association (ADA) implemented standard practices constantly monitored through evaluation and updating. When the ADA Council on Practice Quality Management Committee<sup>2</sup> revised the criteria for evaluation of standards of practice for clinical nutrition managers, they recognized that the criteria for the implementation and evaluation of standards, as well as their indicators, required managers and regulatory agencies. In addition, these standards served to describe job profiles, tools, and recommendations.

The study of the practices related to patient nutrition care in Europe detected five major problems related to hospital nutrition: lack of clearly defined responsibilities, deficient staff training, no influence from patients, insufficient cooperation among staff members, and lack of involvement from the hospital management.<sup>13</sup> Flanel et al.<sup>3</sup> described a program for the continuous quality improvement of clinical nutrition services based in steps including professionals actions, scope of care, indicators and triggers for evaluation, data collection and organization, human resources, assessment of action effectiveness and establishment of new strategies.

Actions of hospital and ambulatory nutrition care that include dietetic intervention, evaluation and monitoring of the patient's nutritional status, and other details directly or indirectly related to patient care are described by the Brazilian legislation regulating the activities of dietitians in clinical nutrition. However, a study on the working situation of dietitian has revealed

that professionals concentrate their activities on the management of meal production, being less available for patient supervision.<sup>14,15,16</sup>

A comparative, documental analysis of the management of nutrition care by dietitians in hospitals located in Brazil and France, performed by means of semi-structured interviews and direct observation, detected the concentrated activities on the management of food service.<sup>17</sup> Study about hospital diet perception by the hospital staff<sup>18</sup> shows that it reflected the hospitalization characteristics in terms of control and discipline conditions, besides it revealed a small influence of patients on their own nutrition. Lassen et al.<sup>19</sup> studied the nutrition care provided to hospitalized individuals, the importance of the diet for the patients, and faults in the hospital nutrition service. The results indicated that, if nutrition care is to be improved, it must be seen as a priority within the hospital, and tools to ensure its quality must be available. Patients should somehow be allowed to choose their own diet, and better patient-staff communication should be established.

The systematization of actions in institutional nutrition must be in line with indicators of hospital quality. In a document about the best strategies to ensure hospital quality produced by the World Health Organization and Health Evidence Network,<sup>20</sup> discusses the need to formulate standards, protocols (guidelines), and mechanisms of quality evaluation (accreditation).

To articulate the scope of the work of the HFNS in terms of inpatient and outpatient care as well as meal production, it is necessary to revisit and reconstruct this service, so that the dietary and nutritional requirements of the hospital are met. This shall result in actions that aim at improving the quality and efficacy of nutrition care. Additionally, it is mandatory that indicators are constructed and a continuous system of evaluation of hospital nutrition practices is adapted to the existing conditions. Instruments for evaluation of hospital nutrition care following the criteria established in the literature and adjusted to the regional context should be shared, so as to improve the indicators of quality in this sector.

The objective of the present study was to describe the elaboration of an Instrument for Evaluation of Food and Nutritional Care targeting the actions of the HFNS. This instrument was qualified by means of a comparative analysis of the nutrition care categories reported in the literature.

## Methods

Elaboration of the IEFNC comprised 5 phases.

1. Phase 1: a bibliographic survey of the Medline and Scielo (Scientific Electronic Library on Line) databases as well as documents such as legislations, recommendations of professional societies, and hospital accreditation criteria was accomplished, in order to select the cate-

- gories for evaluation of nutrition care reported in the literature.
- Phase 2: two studies on institutional procedures for inpatient nutrition care were conducted in two Brazilian hospitals, namely a public institution (180 beds) and a private one (134 beds), for a period of one week in each place. The criteria applied to select the hospitals were they had to be: a general hospital, of the same size (around 150 beds), and located in the metropolitan region where this study was conducted. We selected the municipality and metropolitan region of Campinas (pop. 2.832.297) because it is an important economic and scientific-technological center, with many health services of nationwide recognition, and home to various universities. The objective of this phase was to describe the sequence of actions performed by the HFNS and its relation with other services that also participate in some steps of nutrition care. This sequence of actions ranged from dietetic prescription to diet delivery to the patient. Two nutrition undergraduate students acted as observers, accompanying the activities involved in meal preparation and distribution, as well as the ward routines. These students also spent time with the patients during the meals, so as to determine the subjects' difficulties concerning the dietary routine as well as the mechanisms employed by the hospitalized individuals to overcome them. The observations were recorded in a field notebook, to enable organization of the sequence of actions, routines, difficulties, and problem-solving strategies.
  - Phase 3: the first two phases aided elaboration of the IEFNC, which consisted of categories reported in the literature, adapted to the actions observed in the routines of the two hospitals under study. Open and closed questions were formulated, grouped according to categories, and directed at the coordinator of the HFNS. Some questions were formulated in order to check the replies to others. Thus, a given action was considered positive when a set of responses supported that statement. The objective of this strategy was to certify the HFNS characteristics and conditions.
  - Phase 4: application of the questionnaire at two different hospitals located in two municipalities in the same metropolitan region, in order to determine the time devoted to questionnaire completion and the possible difficulties in phrasing the questions. The opinion of the interviewees about the scope of the instrument was registered. The interviews were recorded on tape while the interviewer completed the questionnaire. The interviewer took between 1½ and 2 hours to apply the questionnaire, depending on how often the interview was interrupted, how detailed the replies were, and how frequently the interviewee asked for clarification of the procedures.
  - Phase 5: in order to finalize the questionnaire, some questions were reformulated and others were subdivided. The recommendation for the questions to be completed in two stages was accepted, so the information that depended on consultation with third parties and the completion of the questionnaire were left for the second meeting. Interviewees of both hospitals considered the IEFNC complete for analysis of the HFNS.

The qualification of the instrument was done according to a qualitative approach, comparing categories between the IEFNC and literature about this subject. The instrument was compared with different documents and papers involving the diagnosis and proposition of standards of practice in hospital nutrition care. The Brazilian legislation was also taken into account. The aforementioned documents were: Standards of professional practice-consultant dietitians health care facilities,<sup>21</sup> and Standards of practice criteria for clinical nutrition managers,<sup>2</sup> both belonging to the American Dietetic Association; the European Council's Nutrition program in hospitals<sup>1,13</sup> European Union; the 1991 criteria of the Joint Commission on Accreditation of Healthcare Organization;<sup>3</sup> the resolutions of the Brazilian Federal Nutrition Council<sup>22</sup> (law 8,234, which regulates the profession; resolution 223/99, which deals with professional practice in clinical nutrition; resolution 304/2003, which handles the criteria for dietetic prescription in clinical nutrition; resolution 306/2003, which considers the criteria for requesting laboratory tests in clinical nutrition; and resolution 380/2006, which regulates the areas dietitians can work as well as the attributions of this professional, and establishes numerical reference parameters per activity), and the hospital accreditation manual.<sup>23</sup>

## Results

This IEFNC consists of 50 open and closed questions, formulated to evaluate two areas of nutrition care: inpatient clinical nutrition practice and meal production. It deals with the characterization and structure of hospitals and the HFNS, the actions concerning nutritional evaluation and patient monitoring, the system employed for meal production, and the hospital diets (Appendix 1). The IEFNC is divided into 6 major categories (2 generals, 3 specifics and 1 specific about questionnaire evaluation), described by different items (table I). The instrument is organized according to the dietitian's routine, in clinical nutrition and meal production areas, so as to facilitate conduction of the interview. The items considered in the questionnaire are related to service quality indicators; infrastructure, systematized data generation, knowledge update and their application to patient care routines; supervision and strategies of nutrition care actions; intra-institu-

## APPENDIX 1

### *Instrument for evaluation of food and nutritional care in hospital*

#### 1. Identification

#### 2. Hospital characteristics

- 2.1. Number of beds: \_\_\_\_\_ Rate of occupation: \_\_\_\_\_  
 2.2. Juridical nature: \_\_\_\_\_

#### 3. Structure of the hospital food and nutrition service - HFNS

- 3.1. How many employees work in the HFNS? \_\_\_\_\_ (including dietitians)  
 3.2. Does the HFNS provide meals for the hospital employees? [ ]yes [ ]no  
 3.3. How many meals are served per day?  
 3.4. Is there a computer in the service? [ ]yes [ ]no  
 If yes, for what activities is it used? Is there Internet?  
 3.5. Localization of the HFNS in the institution's organizational chart

#### 4. Contract work

- 4.1. How many dietitians work in the hospital?  
 Number in the Clinic \_\_\_\_\_ Number in Meal Production \_\_\_\_\_  
 Number in Management \_\_\_\_\_ Others \_\_\_\_\_ Total \_\_\_\_\_  
 4.2. What is the contract work hours by professional activities by area?  
 Clinic Dietitian \_\_\_\_\_ Management Dietitians \_\_\_\_\_  
 4.3. Is there a shift system for weekends and holidays? [ ]yes [ ]no  
 Description of the system and area covered by the shift.

#### 5. Activities of dietitians in hospital units (clinics and wards)

- 5.1. Are the patients submitted to nutritional evaluation (NE) [ ]yes [ ]no  
 If yes, which indicators are used for NE?:  
 [ ] biochemical tests. Which ones? Who requests them?  
 [ ] anthropometric measurements. Which ones?  
 [ ] food history/anamnesis  
 5.2. Which patients (specialty, nutritional risk, disease) are evaluated?  
 5.3. List the equipment for anthropometric evaluation available at the hospital.  
 5.4. When is the patient submitted to nutritional evaluation?  
 [ ] upon admission [ ] during hospitalization [ ] upon discharge  
 5.5. Is nutrition recorded in the medical records of the patient in some way?  
 [ ]yes [ ]no. If yes, what type of recording is performed? How often is it recorded?  
 5.6. Does the HFNS have a specific form attached to the medical records?  
 [ ]yes [ ]no. If yes, which is it?  
 5.7. Does the dietitian accompany the distribution of meals in the ward?  
 [ ]yes [ ]no. How often?  
 5.8. Does the dietitian routinely visit patients? [ ]yes [ ]no  
 If yes, how often and in which situations?  
 5.9. Does the dietitian provide instructions at discharge? [ ]yes [ ]no.  
 If yes, for which types of patients?  
 5.10. Is there some situation in which the dietitian comments about dietetic intervention in the medical records? [ ]yes [ ]no. If yes, in which situations does this occur?  
 5.11. Does the dietitian follow any protocol for their activities in the clinic?  
 [ ]yes [ ]no. If yes, which protocols (at what actions are they directed)?  
 5.12. In which situations does the dietitian contact the nursing staff?  
 5.13. In which situations does the dietitian contact the doctors?  
 5.14. Are there requests of internal nutrition consultation (a request from other services)? [ ]yes [ ]no  
 a) If yes, the request is [ ] formal and written [ ] informal (verbal)  
 b) If yes, how many internal nutrition consultations are requested per week on average? \_\_\_\_\_  
 c) If yes, what are the most frequent situations for which this request is made?  
 5.15. Does the dietitian participate in the clinical visit with other professionals in the ward? [ ]yes [ ]no. If yes, how often?

- 5.16. Does the dietitian regularly participate in some type of activity involving professionals outside the HFNS, such as classes, seminars, campaigns, among others? [ ]yes [ ]no. If yes, how often? What type of activity is it?  
 5.17. Does the HFNS conduct any type of formal evaluation of user's satisfaction? [ ]yes [ ]no. If yes, what are the main points taken into consideration? Who conducts the evaluation?  
 5.18. Does the hospital have a nutritional support team? [ ]yes [ ]no.  
 If yes, who are the participants and what are their responsibilities?

#### 6. Activities of the management dietitian of food service

- 6.1. Does the HFNS have budget autonomy? [ ]yes [ ]no  
 6.2. Is there control of cost/meal or cost/day by the HFNS? [ ]yes [ ]no  
 6.3. Who is responsible for purchases? [ ] the HFNS [ ] Another Service.  
 Which one? If necessary, explain the criteria used by the HFNS for the purchases.  
 6.4. Does the HFNS keep statistical records? [ ]yes [ ]no. If yes, what type of data is systematized?  
 6.5. Who prepares the menu and how often?  
 6.6. Is there a standard recipe book? [ ]yes [ ]no. Is it being currently employed? [ ]yes [ ]no. If yes, for what types of preparations?  
 6.7. Is there a special kitchen or area for the preparation of special diets or foods (dietetic, metabolic, experimental) in your institution?  
 [ ]yes [ ]no  
 6.8. Is there tasting of the preparations? [ ]yes [ ]no.  
 If yes, who tastes them? [ ] dietitian [ ] cook [ ] others  
 6.9. Does the HFNS have any record of the routines (attributions) and regulations with the description of staff roles? [ ]yes [ ]no  
 6.10. How often are the activities of the staff revised/re-evaluated?  
 6.11. Is there any type of formal staff evaluation? [ ]yes [ ]no  
 If yes, is there a specific instrument for formal staff evaluation?  
 6.12. Does the service have a good practice manual? [ ]yes [ ]no  
 If yes, is it being currently used? [ ]yes [ ]no  
 6.13. Does the HFNS formulate regular action plans using information produced by the service itself and with a set of goals? [ ]yes [ ]no  
 a) If yes, is there any written record? [ ]yes [ ]no  
 b) If yes, is any action plan report produced upon request of the hospital administration? [ ]yes [ ]no  
 6.14. Does the HFNS participate in any administrative organs to set its own goals? [ ]yes [ ]no. If yes, which are these administrative organs?

#### 7. Hospital diet characteristics

- 7.1. Does this institution have its own diet manual? [ ]yes [ ]no.  
 If yes, is it printed? [ ]yes [ ]no  
 7.2. Is it possible to obtain information about the energy supplied by each type of diet? [ ]yes [ ]no. If yes, what is the energy supply of the general/normal diets and of the diets with modified consistency (for example, liquid, paste, light, etc)?  
 7.3. Is the standardized diet printed as a manual available for consultation?  
 [ ]yes [ ]no  
 7.4. Is there any statistical control of the prescribed diets? [ ]yes [ ]no.  
 If yes, what are the most frequently prescribed diets?  
 7.5. Are there requests of nutritional supplements for patients?  
 [ ]yes [ ]no  
 7.6. Do you use industrialized nutritional supplements? [ ]yes [ ]no  
 7.7. Does the HFNS produce preparations for nutritional supplementation?  
 [ ]yes [ ]no. If yes, what are they?  
 7.8. Is there a mechanism through which patients can request diet modification? [ ]yes [ ]no. If yes, what mechanism is used?  
 7.9. Describe the main objectives and priorities of the HFNS  
 7.10. What is your opinion about this questionnaire? (time spent on completing it and scope of the topics)

**Table I**  
*Categories, items covered by each category, and questions related in the Appendix 1*

<i>Categories</i>	<i>Items covered by the questionnaire</i>	<i>Number of questions</i>
<i>Hospital characteristics and HFNS structure</i>	Number of beds	2.1
	Juridical nature	2.2
	Number of employees	3.1
	Number of dietitians	4.1
	Dimensioning of meal production	3.2; 3.3
	Infrastructure (computer, specialized dietetic kitchen)	3.4; 6.7
	Situation in the organizational structure	3.5
	Objectives and priorities of the Nutrition Service (HFNS)	7.9
<i>Contract work</i>	Number of dietitians /area	4.1
	Contract work hours	4.2
	Shift system	4.3
<i>Mapping of the activities of the dietitian in the clinic</i>	Nutritional evaluation of inpatients (periodicity, priorities, responsibility, protocols, records, indicators, instruments)	5.1; 5.2; 5.3; 5.4; 5.5; 5.6
	Diet and patient monitoring	5.7; 5.8
	Relationship with the multiprofessional team (entry of information in the medical records, visit with the team)	5.6; 5.12; 5.13; 5.15
	Intra-institutional relationship	5.14; 5.16
	Diet prescription	5.10
	Nutritional support team	5.18
	Mechanisms of patient manifestation (user's satisfaction, diet modification)	5.17; 7.8
	Protocols	5.11
	Nutritional education	5.9
<i>Mapping of the activities of meal production and management</i>	Menu diversity and quality control	6.5; 6.6; 6.8; 7.7
	Meal production control	6.2; 6.4; 7.4
	Good practice manual	6.12
	Staff training and assessment	6.9; 6.10; 6.11
	Budget management	6.1; 6.3;
	Service planning and objectives, engagement with hospital planning	6.13; 6.14; 7.9
<i>Hospital diet characteristics</i>	Diet manual (types, nutritional information)	7.1; 7.2; 7.3
	Control of prescribed diets	7.4
	Nutritional supplements	7.5; 7.6; 7.7
<i>Questionnaire evaluation</i>	Coverage and time spent on completing the questionnaire	7.10

tional communication and dissemination and participation of multiprofessional teams, management and use of resources; evaluation of other feedback mechanisms for service planning; professional qualifications and responsibilities.

The instrument was qualifying by comparison of its categories with those reported in the literature (table II).

## Discussion

The present IEFNC resulted from efforts devoted to the evaluation of the quality of nutrition care in hospitals. The interdependence between inpatient care and meal production infrastructure should assist the institution in meeting the patients' nutritional requirements, thus enabling improvement of nutrition care.

However, for the instrument to be successful, various steps must be taken. First, it is mandatory that the interviewer employs appropriate techniques when conducting such a detailed interview. S/he has to be skillful at using

different strategies, so that the necessary information is obtained. Punctual replies without sufficient explanations should not be accepted. A further issue that may pose difficulties to questionnaire completion is the length of the interview and the time spent on its application, which may reduce compliance of the interviewee. To circumvent this problem, conduction of the questionnaire as a two-stage evaluation process may improve the quality of the obtained information. Because the questionnaire is applied at the interviewee's workplace, it is also necessary to guarantee privacy at the interview site.

The IEFNC does not include criteria concerning the periodicity of evaluation, continued staff training, reports, and quantification of the coverage of actions, especially those regarding the nutritional evaluation of patients. Instruments for the coverage of the existing actions are necessary in order to expand analysis of the actions related to patient care, to develop a mechanism of evaluation and to improve the coverage and to test it.

In 2003, the Council of Europe-Committee of Ministers published a legislation detailing five principles and

**Table II**  
*Comparison of the IEFNC categories with those reported in the literature*

<i>Category</i>	<i>Items covered by the questionnaire</i>	<i>Nutrition programs in hospitals (Beck et al., 2001, 2002)</i>	<i>Standards of practice criteria for clinical nutrition managers (Witte et al., 1997)</i>	<i>Standards of professional practice-consultant dietitians health care facilities (Vogelzang, 2001)</i>	<i>Continuous quality improvement in patient clinical nutrition services (Flanet et al., 1995)</i>	<i>Legislation resolutions of the Federal Council of dietitians and dimensioning of local reality</i>
<i>Hospital characteristics and HFNS structure</i>	Number of beds	x				x
	Juridical nature					x
	Number of employees	x				x
	Number of dietitians					x
	Dimensioning of meal production	x	x			x
	Infrastructure (computer, specialized kitchen)					x
	Situation in the organizational structure					x
	Objectives and priorities of the Nutrition Service (HFNS)				x	
<i>Contract work</i>	Number of dietitians/area					x
	Contract work hours					x
	Shift system					x
<i>Mapping of the activities of the dietitian in the clinic</i>	Nutritional evaluation of inpatients (periodicity, priorities, responsibility, protocols, records, indicators, instruments)	x	x	x	x	x
	Diet and patient monitoring	x	x	x	x	x
	Relationship with the multiprofessional team (entry of information in the medical records, visit with the team)	x	x	x	x	x
	Intra-institutional relationship		x	x	x	
	Diet prescription				x	x
	Nutritional support team	x	x	x	x	x
	Mechanisms of patient manifestation (user's satisfaction, diet modification)	x	x	x	x	
	Protocols	x	x	x	x	
Nutritional education		x	x	x	x	
<i>Mapping of the activities of meal production and management</i>	Menu diversity and quality control	x	x	x	x	
	Meal production control			x		x
	Good practice manual		x	x		x
	Staff training and evaluation		x	x		
	Budget management	x	x	x	x	
	Service planning and objectives, engagement with hospital planning		x	x	x	
<i>Characteristics of hospital diets</i>	Diet manual (types, nutritional information)	x	x	x	x	x
	Control of prescribed diets		x	x		
	Nutritional supplements		x	x	x	
<i>Evaluation of the questionnaire</i>	Coverage and time spent on completing the questionnaire					

measures that should be considered for increased health protection to be achieved. These principles contributed to maintaining harmony between legislation and practices, besides controlling the quality and safety of products that have a direct or indirect impact on the food chain of human beings. The principles are presented in themes dealing with issues like nutritional evaluation and treatment in hospitals, responsibilities of staff categories for hospital nutrition care, meal production and hospital nutrition, and the costs involved in these processes.<sup>13</sup>

In order to evaluate the hospital stay of undernourished patients in 25 Brazilian hospitals, patients were monitored for complications, mortality, and length and cost of hospitalization. Malnutrition proved to be one of the most important factors interfering with health and disease, thus confirming that the best decision is to treat inpatients' disease and start nutritional intervention early.<sup>24-26</sup>

The need for nutritional risk screening was also emphasized in an anthropometric survey of the nutritional status. Only 25% of the undernourished patients (BMI < 18.5 kg/m<sup>2</sup>), including those with important and recent weight loss, were attended by the nutrition service. According to the authors, the clinical team's failure to recognize malnutrition during hospitalization will continue if professionals insist on neglecting routine nutritional evaluation.<sup>27</sup>

Porbén<sup>28</sup> reported that the high prevalence of undernutrition (41.2%) encountered in 12 surveyed Cuban public hospitals was accompanied by poor documentation of the patient's nutritional status. In the present IEFNC, the questions regarding the dietitian's qualifications, the descriptions of the routines, protocols and actions directed at the patient, and the integration of the dietitian with the health team attempt at finding out how the HFNS deals with the prevention of hospital malnutrition.

In 2004 in Denmark, there was a re-evaluation of actions in clinical nutrition by means of a questionnaire that included questions about attitudes and practices in nutritional screening, treatment and monitoring plans. Despite the significant positive points, the lack of knowledge, interest and defined responsibilities, combined with the usual difficulties in designing a good nutritional plan, continued to be an obstacle to the development of clinical nutrition in that country.<sup>29</sup>

Patient perception of nutritional care in Denmark was evaluated by means of five questionnaires on the importance of, and satisfaction with the meals, information provided by the team on the institution's food service, and the conditions of meal distribution. The replies revealed that hospital food has a great impact on the patients' perception of well-being, the usual diet is a parameter for evaluation of the food service provided by the hospital, patients perceive the importance of diet for their recovery and treatment, and patients seldom have the opportunity to express their preferences and complaints to the service.<sup>19</sup>

Stanga et al.<sup>12</sup> employed a validated 16-item questionnaire as the tool to assess the opinion of 317 patients on an oral diet in two Swiss health institutions. In general, the responses were positive regarding satisfaction with meals during hospitalization, in contrast with the general notion based on complaints. This is possibly because dissatisfaction is more frequently verbalized than satisfaction. The study produced recommendations for improvement in hospital food and presentation. Suggestions took into account factors that interfere with appetite and even mentioned offering the patients options regarding the temperature and presentation of the meals. These recommendations resulted in the creation of a head position responsible for quality standards in provision of nutritional care by health institutions.

Questions included in the IEFNC dealing with the quality of the diet, the professional actions directed at the detection of food and nutritional problems, and the mechanisms of manifestation of inpatients enables one to assess how the HFNS provides food and nutritional care to patients. In addition to evaluating meal quality, Dusper-tuis et al.<sup>30</sup> investigated the reasons for low food consumption. These authors concluded that, even though the supply was sufficient, the nutritional requirements of most inpatients were not covered, thus indicating the need for strategies concerning diet improvement. Ensuring availability of mechanisms for patients to express their views and flexibility on the part of the HFNS can contribute to improved hospital food consumption.

Although distinct realities are observed, several studies report the lack of standardized procedures associated with no definition of responsibilities regarding the provision of hospital nutrition care. The support of the IEFNC with respect to surveys, documents of regulatory organizations and legislation, and field research for the construction of an analysis method adapted to local reality, were the strategies employed here to integrate the particular features observed in the health institutions under study with scientific indicators. This support can thus become an important tool for determination of how nutritional care is structured in hospital institutions.

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