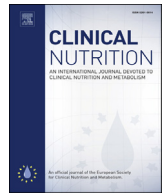




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Review

Q18 nutritionDay: 10 years of growth

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SUMMARY

Background & aims: Despite high prevalence at hospital admission, disease related malnutrition (DRM) remains under recognized and undertreated. DRM is associated with increased morbidity, hospital readmission rate, and burden for the healthcare system. The compelling need to increase awareness and knowledge through an international survey has triggered the launch of the nutritionDay (ND) concept. **Methods:** ND is a worldwide annual systematic collection and analysis of data in hospital wards, intensive care units and nursing homes. ND is based on questionnaires to systematically collect and analyze the patient's characteristics, food intake and nutrition support, as well as the determinants of their environment (facility, health care personal, etc ...). Questionnaires, outcome documentation sheets and step-by-step guidance are available as download in 30 languages.

Results: ND has described the nutritional status and behavior of over 150,000 hospitalized patients and nursing home's patients in over 56 participating countries. These data allowed a local, regional, national and international benchmarking at different levels (i.e. type of medical pathologies, care facilities, etc.) and over time. Sixteen peer-reviewed publications have already been released and picture the international scene of DRM.

Conclusion: This review presents the 10-year of the ND project development and shows how ND serves all health care professionals to optimize nutrition care and nutrition related structures. ND keeps progressing and is likely to become a standard tool for determining the nutritional status and behavior of hospitalized patients and nursing home's population.

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1. Introduction

Q3 Prevention and treatment of non-communicable diseases, such as diabetes mellitus, cardiovascular diseases, cancer and reduction of associated risk factors such as obesity, tobacco use and harmful drinking is the current major focus of health care [1,2]. Furthermore, United Nations "End hunger, achieve food security and

improved nutrition, and promote sustainable agriculture" as one of the global sustainable development goals [3].

Unfortunately, malnourished patients and disease-related malnutrition (DRM) are not explicitly mentioned in these documents. During the last decades, studies showed that DRM is prevalent in 20–40% of patients at hospital admission [4–7], with even higher prevalence in geriatrics [6,8] or in specific pathologies (cancer, neurodegenerative diseases). Nevertheless, DRM is often under recognized and often untreated, which results in further deterioration of the nutritional status [9]. DRM is associated with increased morbidity (e.g. impaired wound healing, higher infection rate, ...), longer hospital stay, increased hospital readmission rate, and higher burden for the healthcare system [10]. These

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observations and the stable high prevalence over years resulted in the compelling need to increase awareness through an international survey to document the *existing global* situation. Expected benefits of such a survey would include increased awareness of health care professionals, patients and their relatives about malnutrition and its related side effects. The survey could provide local and global data to argue with health authorities for the recognition DRM and the need for an optimization of nutrition care in all settings, hospitals, nursing homes and ambulatory patient care. To full fill these expectations, a concept was needed which would allow direct involvement of patients and every caregiver independently of their mother tongue and their level of training in nutrition to participate and to provide data about their daily practice. The concept of nutritionDay (ND) was born.

ND aims at improving patient safety and quality of (nutrition) care by raising awareness and increasing knowledge about DRM. ND is a worldwide annual systematic collection and analysis of data in hospital wards, intensive care units (ICU) and nursing homes. It is likely to become a standard tool for determining the nutritional status and behavior of hospitalized patients and nursing home's population. It allows local, regional, national and international benchmarking at different levels (i.e. type of medical pathologies, care facilities) and over time.

This review aims at presenting a 10-year human adventure launched by the ND team and supported by the European Society for Clinical Nutrition and Metabolism (ESPEN) to serve all patients, health care professionals, to optimize nutrition care and nutrition related structures.

2. The adventure

The adventure started after the release by the Council of Europe of the "Resolution on food and nutritional care in hospitals" [11]. This comprehensive resolution stated that "The definition of DRM should be universally accepted and used as a clinical diagnosis, and hence treated as such" and that "The resolution draws attentions to all relevant aspects of nutrition assessment, treatment or malnutrition, food preparation and services in hospitals, as well as education of and communication between healthcare providers". The adopting Committee of Ministers called for action by ALL stakeholders to improve nutrition care of patients. "The Department of Health, Regional Authorities and each Hospital management should acknowledge their responsibility with regard to nutritional care and support, and food service". The Ministries of the adopting countries sent the document to the national stakeholder, such as

the administrations of the bigger hospital owners. Important to know, the resolution is of non-binding and recommending nature.

In 2003, the acting chairman of ESPEN (Claude Pichard) took this call very seriously and appointed a working group. In 2004, under the lead of the ESPEN General Secretary (Olle Ljungqvist), the ESPEN Council outlined and approved a number of actions to facilitate a wider recognition of DRM at the international level. A dedicated working group lead by Michael Hiesmayr (Table 1) developed the idea of a cross-sectional one-day survey, baptized "nutritionDay", to evaluate patients' food intake, nutrition care and nutrition care-related structures and processes in European hospitals. Promoting and funding such an ambitious initiative was challenging as roadblocks were many. In particular, the "philanthropic data collection" proposed by ND was received with surprise among the members of the health care community. Indeed, the collection of data was based on a volunteer action without any financial support or direct academic benefit for the participants. The plan was to have the data pooled and analyzed by the ND team based in Vienna, to be ultimately made available for use by the entire community. Basic principles of ND were formulated – easy and simple access, without need of expert knowledge, wards own their data, facilitation of learning through benchmarking within a speciality, data safety and secured unit and patient anonymity.

In 2005, a feasibility trial was successfully performed in five countries. The very first ND survey was launched on the 19th of January 2006. The participation was beyond expectations: 14,950 patients from 747 wards, 259 hospitals, and 25 countries.

Soon after, the ND questionnaire was adapted to fit other clinical environment. Two examples illustrate this evolution: ND in nursing homes started 2007 in Germany and Austria, and 2068 residents from 40 nursing homes were enrolled in the first year. The geriatric survey gained quickly in popularity (with a total participation of more than 44,000 residents) and is now coordinated by the Nuernberg group led by Dorothee Volkert and Cornel Sieber. Pierre Singer and Michael Hiesmayr extended the concept to ICU patients. By now, within this module more than 13,000 patients were documented. All modules are now run on a regular basis.

The next milestone was in 2008, when patients were enrolled in Australia and Japan. Within a few years, ND went worldwide with over 56 participating countries. This geographical expansion did not preclude more developments for specific pathologies. In 2011, a specific module was developed to better evaluate the specific characteristics of oncology patients and launched in 2012.

Two of the principles of ND, the participating wards' ownership of data and acknowledgment of differences between specialties

Table 1
Developing ND modules: the people in action.

nDay in hospitals	nDay in nursing homes	nDay in ICU	nDay oncology	nDay economy and quality indicators
Michael Hiesmayr	Luzia Valentini	Michael Hiesmayr	Jan Arends	Judit Simon
Karin Schindler	Karin Schindler	Pierre Singer	Elisabeth Hütterer	Michael Hiesmayr
Peter Bauer	Romana Schlaffer	Peter Bauer	Peter Bauer	Peter Bauer
Pat Howard	Dorothee Volkert	Bruno Mora	Felix Keil	Noemi Kiss
Cora Jonkers	Jürgen Bauer	Sergio Ruiz-Santana	Gabriela Kornek	Sigrid Kosak
Jens Kondrup	Franz Böhmer		Alessandro Laviano	Pierre Singer
Alessandro Laviano	Thomas Frühwald		Sigrid Kosak	
Olle Ljungqvist	Romana Lenzen-Grossimlingshaus		Karin Schindler	
Claude Pichard	Susanne Podingbauer			
Matthias Pirlich	Eduard Rappold			
Tatjana Schütz	Cornel Sieber			
Stéphane Schneider	Christine Smoliner			
Romana Schlaffer	Rainer Wirth			

Implementation of online surveys and data management: Mohamed Mouhieddine, Christian Schuh.

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