Executive summary

Undernutrition is a deficiency of energy, protein and other nutrients impairing the body and its functioning, jeopardising clinical outcomes. Undernutrition causes hospital stays to double and increases complications and mortality with the elderly across Europe. Among the causes of undernutrition are decreased metabolic rate, weaknesses and illnesses. Complicating factors common with the elderly are loss of appetite, dementia, social isolation, reduced oral health, financial problems and absence of feeding assistance – making this group particularly vulnerable to undernutrition.

Treating undernutrition costs around €10.95 billion per year in the case of the UK, thus making it as costly as, for example, obesity. Although most of the expenditure on disease-related malnutrition involves people over 65, or 15% of the population, it remains largely unrecognised as a major health care problem. About half the cost of undernutrition occurs outside hospitals, mainly in long-term residential care for older people. Care costs can be reduced through preventive medicine, observing social justice and fair equity-efficiency trade-offs. Undernutrition can be prevented through promoting better nutrition in hospitals and care homes and oral hygiene, by installing screening routines, by educating caregivers, and by making meals a social event. Reimbursement should be expanded for dietary counselling and supplemental foods.

Proper screening routines are of particular importance for early detection of undernutrition, which can be concealed. Health care facilities need to adopt scientifically and technically established diagnosis tools and criteria, and should continue screening after discharge from hospital. Collaboration with dieticians should be increased. To successfully tackle malnutrition a multidisciplinary, multilevel approach is important, informing, educating and training stakeholders, patients and residents, family, caregivers and policy makers. Awareness of undernutrition issues should be improved with care home management and kitchen staff through continued education. Dieticians should be given a central role in this regard. In the light of the above, policy makers should create legal frameworks to confront undernutrition as the public health concern that it is. Governments should set and enforce standards for nutritional care and screening, assessment and follow-up and make undernutrition part of national food and health plans. Dietetic follow-up and specialised nutrition should be included for reimbursement. Support should be given to research on best practices, and evidence-based approaches. National platforms for the transfer of

nutritional patient information between care settings should be organised. Nutritional education should be included in physicians', nurses' and caregivers' training. Finally, government policies aimed at combating undernutrition should include assigning political responsibility for elderly people and putting undernutrition on the political agenda.

1. Introduction

In 2002, the Council of Europe published a report on food and nutritional care in hospitals,[i] which contained over 100 recommendations for improvement. In this report, the Council of Europe confirms that early and proactive screening, combined with the monitoring of dietary habits, can contribute to a faster socio-economic reintegration of the patient and to an improvement of his/her quality of life. In 2003, the Council of Europe Committee of ministers adopted a resolution[ii] and formulated recommendations on the situation in hospitals. These recommendations include:

- a clear definition of the responsibilities of health care staff and hospital management with regard to nutritional care;
- implementation of scientific standards for assessing, evaluating and supervising diet and the risks of patients in relation to undernutrition;
- extension of an institution's liability with regards to nutritional care after hospitalisation;
- improving the training level of health care staff;
- promotion of individualised and flexible offer of meals with the possibility for the patient to ask for additional servings;
- patients' input into drafting their meal-taking schedule;
- promotion of co-operation and communication amongst hospital staff members to guarantee an optimal level of nutritional care, including better communication between the hospital and front-line health care staff;
- the notion that far from being a hotel service, nutrition is an essential element of patient treatment; it must therefore be considered as such by the hospital management;
- the idea that management must acknowledge responsibility for dispensing nutritional care and must give priority to an internal policy on nutrition;
- taking into account the costs incurred by complications and prolongation of hospital stays due to undernutrition when allocating the food budget.

In 2006, as an example of national activities, the Belgian National Food and Health Plan[iii] was initiated to address nutritional and health issues and formulate related recommendations. It focuses on three different settings: hospitals, care homes and home care. The plan considered undernutrition as an important issue, which led to the establishment of a dedicated policy option and the creation of several expert working groups. Their main objective was to identify the main causes of undernutrition and develop an action plan. This resulted in the identification of eight fields of action. A two-day international workshop on the topic of undernutrition in care homes and home care was organised on 22 and 23 November 2007 and allowed European experts to present and debate the various aspects of this specific problem in Europe.

These activities together with the Council of Europe Committee of Ministers resolution have been the basis for the recommendations and evaluations in this report. It focuses on the importance of early and adequate nutritional risk screening, the prevalence and causes of undernutrition, the different types of nutritional support, the distribution of responsibilities and the importance of continuing education on (clinical) nutrition in the three settings. At the end of this report, we will outline the responsibilities of all the actors involved in resolving this important European-wide issue, as well as suggesting possible actions in each of the settings.

The following have served as sources of information for this report:

- the report and recommendations of the Committee of Experts on Nutrition, Food Safety and Consumer Protection, *Food and nutritional care in hospitals: how to prevent undernutrition*, 2003;
- papers and the report prepared by speakers at the international workshop on undernutrition in care homes and home care, Brussels, November 2007;[iv]
- the recommendations and outcomes of the different working groups in the framework of the Belgian National Food and Health Plan (NFHP-B), 2006-08;[iii]
- the final report of the STAVO project conducted by the Belgian Ministry of Social Affairs and Public Health, 2006;[v]
- the evaluation report of a project on undernutrition in geriatric wards, conducted by the Belgian Ministry of Social Affairs and Public Health, 2007.[vi]

2. Prevalence and causes of undernutrition in care homes and home care

Summary

- the diagnosis of severe undernutrition is based on the presence of one or more of the following criteria: (1) weight loss $\geq$ 10% in one month or $\geq$ 15% in six months; (2) BMI < 18 kg/m^2; (3) serum albumin < 30 g/l;
- undernutrition is frequent in older individuals living at home (8-19%) and in chronic care institutions (26-38%) according to various European prevalence studies;
- older people are at risk of micronutrient deficiency (mainly group B vitamins, vitamin C, vitamin D, selenium, zinc and calcium).
- causes that lead to undernutrition include oral and dental disorders, swallowing problems, depression, dementia, chronic diseases, medication, and psychological and social factors leading to dependency.

Undernutrition

Although specific numbers are scarce, there is a consensus amongst various stakeholders that undernutrition remains a considerable problem in health care settings and policies all over Europe. Undernutrition is usually defined as a deficiency or excess of energy, protein and other nutrients causing adverse effects on tissue, body form (body shape, size and composition) and function, as well as on clinical outcomes.[vii] This report focuses specifically on undernutrition, a condition which is characterised by clinical depletion, undesired weight loss or underweight. Sometimes, undernutrition is also defined by the terms protein calorie malnutrition (PCM), protein energy malnutrition (PEM) or malnutrition of multiple nutrients. The condition results from an imbalance between intake and bodily requirements. This imbalance causes tissue loss, in particular of muscle tissue, with harmful functional consequences.

Nutrition deficits result in major body dysfunctions altering daily activities (autonomy), increasing the prevalence of additional pathologies (vulnerability) and delaying recovery after acute events (clinical outcome), and ultimately jeopardising the economic system of the health care institutions.

Poor nutritional intake, physical inactivity, chronic diseases and ageing pave the way for undernutrition. These conditions are generally not recognised as "risk situations" and are therefore not medically taken into account in due time in order to allow optimal treatment, such as timely nutritional support. At later stages, severe undernutrition is difficult and costly to cure.

As prevention is both easier and more cost-effective, screening for the risk of undernutrition is therefore a first important public health measure to identify people at risk.

In guidelines established in France in 2007 by the Haute Autorité de Santé, the risk of undernutrition is defined by the presence of at least one of the following criteria:[viii]

- weight loss ≥ 5% over one month or ≥ 10% over six months;
- Body Mass Index (BMI) < 21 kg/m^2;
- serum albumin concentrations < 35 g/l;
- Global Mini Nutritional Assessment (MNA) score < 17.

If these criteria are met, a person will have an increased risk of actually developing undernutrition if appropriate action is not taken. The diagnosis of severe undernutrition is based on the presence of one or more of the following criteria:

- weight loss ≥ 10% in one month or ≥ 15% in six months;
- BMI < 18 kg/m^2;
- serum albumin < 30 g/l.

Prevalence

There is a general agreement that undernutrition in Europe is significant, especially among older people (20-30% for BMI < 20 kg/m^2). The Council of Europe, in its 2003 resolution on food and nutritional care in hospitals, even went as far as saying that there is an "unacceptable number of undernourished hospital patients in Europe". It is also important to state that the risk of undernutrition increases during hospital stays.

It is very difficult to assess the prevalence of undernutrition in both care homes and home care, and to compare various figures between different countries, since there is as yet no general agreement on the criteria that should be used when establishing the prevalence of undernutrition in adults (including old people). Different methods and criteria have been used and have led to a broad variety of figures on prevalence, but it is

important to assess a person's nutritional status with proper and user-friendly methods, such as weight loss, BMI, (recent) food intake, age-related changes in body composition, muscle mass and function, etc.[ix]

Some countries, like the Netherlands, have a set of clear measurement and screening tools, but there is an obvious need for a tool that is agreed on and used by all European countries. Studies should therefore be undertaken to develop and validate simple screening methods for examining undernutrition in care homes and home care. In Chapter 6 of this report, some possible screening methods are listed, together with the issues currently related to the screening of undernutrition.

Nursing homes

In Belgium, a survey on the prevalence of undernutrition in geriatric wards of 90 hospitals showed that four out of five people suffer from undernutrition or are at risk. Out of the 2 565 people aged 75 and older who were admitted to a geriatric ward, 35.9% suffered from undernutrition and 41.9% were found to be at risk using their MNA score.[vi]

Figures from France estimate that undernutrition affects between 4% and 10% of older people living at home; 15-38% of those in institutional care; and 30-70% of hospitalised older people. A study aimed at describing the nutritional status of geriatric home residents according to their place of dwelling in the Aquitaine region estimated the prevalence of undernutrition to be 19.1%. This rate was higher in long-term care (48.0%) than in nursing homes (14.5%).[x]

The prevalence of undernutrition at home (8-12%) shows that we need to prevent undernutrition in the general population. Its prevalence at the time of hospital admission (30-50%, higher in geriatrics) indicates the vulnerability of undernourished people. During hospitalisation, undernutrition is an aggravating factor in the main because pre-existing undernutrition is not recognised, food intake is chronically insufficient and nutritional support, if prescribed, is too late to be efficient.

In the Netherlands, a National Prevalence Measurement of Care Problems is conducted annually (since 1998) in home care organisations, care homes and hospitals (LPZ project).[xi] It provides insight into the prevalence, prevention, management and quality indicators of relevant care problems. It is a cross-sectional study with a standardised questionnaire, carried out one day a year (four days in home care), during which all persons are assessed by two caregivers per person (for assessment). Since 2004, the prevalence and other indicators of undernutrition are also measured

annually. The LPZ project uses the following definition to identify undernutrition:

- BMI < 18.5 kg/m^2 (< 24 kg/m^2 if age ≥ 85);
- or unintentional weight loss (6 kg during last six months or 3 kg during the last month);
- or a BMI between 18.5 and 20 kg/m^2 (24-29 kg/m^2 if age ≥ 85) in combination with no nutritional intake for three days or likelihood of less intake for more than one week.

In this study, involving 12 883 people, the prevalence was shown to be the highest in hospitals (23.8%) followed by home care organisations (21.7%) and nursing homes (19.2%).[xii] The evolution of the prevalence of undernutrition in the Netherlands during the period 2004-07 is shown below in Figure 1.[xiii]

Malnutrition (%)				
Organisation	2004	2005	2006	2007
Acute care				
Academic hospitals	26.0	29.7	29.9	16.5
General hospitals	28.2	26.5	23.3	16.1
Chronic care				
Nursing homes	24.0	20.7	25.6	22.3
Residential homes	18.5	17.9	28.0	26.2
Home care				
Home care organisation	28.7	24.9	22.9	19.3

Figure 1: Prevalence of undernutrition in the Netherlands 2004-07[24]

24. "Landelijke Prevalentiemeting Zorgproblemen. Rapportage resultaten. 2007", www.lpz-um.nl/documents/lpz/lpz_rapport_2007_secured.pdf, p. 15. Date of consultation: 27 October 2008.