British Specialist Nutrition Association Ltd

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Better Care Through Better Nutrition: Value and Effects of Medical Nutrition

Executive Summary: UK perspective

The Burden of Malnutrition

Increasing numbers of patients are being readmitted to hospital putting undue extra strain on the NHS. A key contributing factor is malnutrition and risk of malnutrition.

UK data shows that malnourished patients experience significantly more emergency admissions to hospital than those at low risk of malnutrition (low 5% vs medium 9% vs high 42%).[1] Malnourished patients also have more GP visits (19 vs 9) and longer hospital stays (6 vs 3 days) than those who are well-nourished.[2] Public expenditure on malnutrition in 2011-12 in England alone was £19.6 billion, corresponding to more than 15% of the total expenditure on health and social care.[3] The cost of treating a malnourished patient is more than 2-3 times greater than treating a well-nourished patient.[3] A similar picture is seen across Europe.[4-8]

More than 3 million people in the UK are affected by malnutrition with the majority (93%) living in the community. No care setting is free of malnutrition, it is common across all care settings in the UK and the risk increases with increased dependency.

Malnutrition is caused by insufficient dietary intake with disability and disease at the heart of the problem.[16,17] Food intake is often reduced because of the effects of disease and its treatment, for example poor appetite, swallowing problems and the side effects of drugs. As a consequence, patients and families suffer; patient's mobility, independence and quality of life are adversely affected; and mortality rises.[18-19]

The prevalence of malnutrition

In the community:

- GP Practices **11%**[9]
- Sheltered Housing **12%**[10]
- Outpatients **16%**[11]
- Mental health units* **18-20%**[12-15]
- Care homes* **30-42%**[12-15]

In hospital:

- Hospital* **25-34%**[12-15]

*On admission (hospital within 72 hours; care home/mental health unit within 6 months)

The Value and Effects of Medical Nutrition

Medical nutrition has proven nutritional, functional and clinical benefits for patients with a variety of conditions in different healthcare settings

Good nutritional care is a vital part of overall care and includes screening for malnutrition and nutritional care planning. Malnutrition is managed using a spectrum of methods of nutrition support which includes food-first approaches (e.g. dietary counselling, food fortification) and medical nutrition products, including oral nutritional supplements (ONS), enteral tube feeding (ETF) and parenteral nutrition (PN). Decisions about which form of nutritional support is most suitable for patients should take account of individual patient needs and whether good quality evidence shows it to be effective.

Medical nutrition products are specific nutritional compositions for disease intervention that effectively contribute to the therapeutic regimen by improving a patient's general condition. Medical nutrition provides an evidence-based, effective solution to tackling malnutrition in patients who are unable to consume enough food safely to sustain life or optimise health. Medical nutrition may be required from birth or at any stage during infancy, childhood, adulthood or in old age. It may be used for short-term nutritional support (days or weeks) or long-term for months, years or for life.

[1] Cawood AL, Rust S, Walters E, et al. 2010. Proc Nutr Soc; 69: E149. [2] Guest JF, Panca M, Baeyens JP, et al. 2011. Clin Nutr; 30(4): 422-9. [3] Elia M. 2015. Malnutrition Action Group of BAPEN and the National Institute for Research Southampton Biomedical Research Centre [4] Cepton. 2007. Munich. [5] Freijer K, Tan SS, Koopmanschap MA, et al. 2013. Clin Nutr; 32(1): 136-41. [6] Rice N, Normand C. 2012. Public Health Nutr; 15(10): 1966-72. [7] Benkovic V, Kolcic I, Ivicevic Uhernik A, et al. 2014. Clin Nutr; 33(4): 689-93. [8] Ljungqvist O, de Man F. 2009. Nutr Hosp; 24(3): 368-70. [9] McGurk P, Cawood AL, Walters E, et al. 2011. ProcNutrSoc; 70(OCE5): E267. [10] Elia M, Russell C. 2009. Redditch. [11] Rust S, Cawood AL, Walters E, et al. 2010. ProcNutrSoc; 69: E150. [12] Russell C, Elia M. 2012. Redditch. [13] Russell C, Elia M. 2011. Redditch. [14] Russell C, Elia M. 2009. Redditch. [15] Russell C, Elia M. 2008. Redditch. [16] Gibbons T, Fuchs GJ. 2009. Clin Pediatr(Phila); 48(4): 356-61. [17] Stratton RJ, Green CJ, Elia M. 2003. Wallingford: CABI Publishing. [18] Elia M, Russell C. 2009. Redditch. [19] Stratton RJ, King CL, Stroud MA, et al. 2006. Br J Nutr; 95(2): 325-30. [20] Elia M, Normand C, Laviano A, et al. 2016. Clin Nutr; 35(1): 125-37. [21] Stratton RJ, Hebuterne X, Elia M. 2013. Ageing Res Rev; 12(4): 884-97. [22] Cawood AL, Elia M, Stratton RJ. 2012. Ageing Res Rev; 11(2): 278-96. [23] Elia M, Normand C, Norman K, et al. 2016. Clin Nutr; 35(2): 370-80. [24] Bally MR, Blaser Yildirim PZ, Bounoure L, et al. 2016. JAMA Intern Med; 176(1): 43-53. [25] Compher C, Chittams J, Sammarco T, et al. 2017. Crit Care Med; 45(2): 156-63. [26] Nicolo M, Heyland DK, Chittams J, et al. 2016. JPEN J Parenter Enteral Nutr; 40(1): 45-51. [27] Alberda C, Gramlich L, Jones N, et al. 2009. Intensive Care Med; 35(10): 1728-37. [28] Klek S, Hermanowicz A, Dziwiszek G, et al. 2014. Am J Clin Nutr; 100(2): 609-15. [29] Pironi L. 2017. BMC Nutrition; 3(1): 6. [30] Melville CA, Bisset WM, Long S, et al. 1997. J Hosp Infect; 35(3): 197-205. [31] Marshall JK, Gadowsky SL, Childs A, et al. 2005. JPEN J Parenter Enteral Nutr; 29(4): 266-9.

Benefits of Medical Nutrition

Oral Nutritional Supplements

Analyses of many studies show that ONS lead to reductions in the proportion of patients admitted or readmitted to hospital vs routine care.[20,21] Intervention with high-protein ONS has been shown to reduce overall readmissions by 30%.[22] When the results of many studies are combined and analysed according to strict procedures (meta-analysis) use of ONS is associated with reductions in complications and mortality and weight gain in hospital patients.[17,23] In community patients studies show that ONS use is associated with better quality of life, less infections and minor post-operative complications, and less falls compared to routine care.[20]

Enteral Tube Feeding

Enteral tube feeding (ETF) is a life-saving technique frequently used in patients of all age groups with a wide variety of conditions across all healthcare settings e.g. hospital, care homes, in patients' own homes. Many people receiving ETF at home (Home ETF) live independently and self-manage their daily care, whilst also achieving normal activity levels. When carefully examined in a systematic way, ETF has been associated with increased nutritional intake in patients across healthcare settings,[17,24] and leads to improved body weight and muscle mass in patients in the community.[17] In hospital, patients' mortality rates (11% vs. 23%) and complication rates (33% vs 48%) were found to be significantly reduced by ETF compared with routine care in some patient groups.[17]

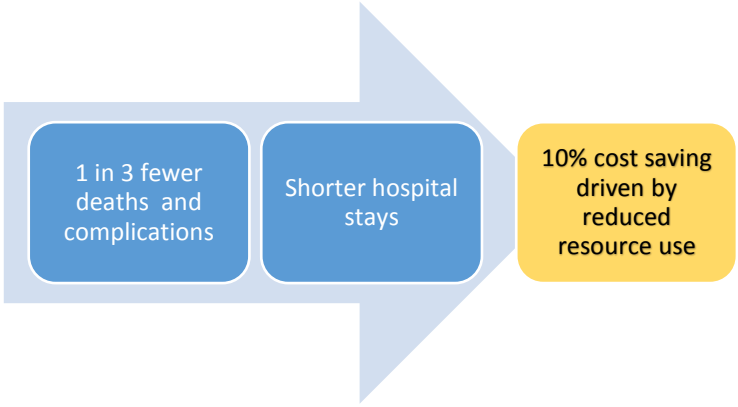
Parenteral Nutrition

Parenteral nutrition (PN) - the intravenous administration of nutrients - is a life-sustaining therapy for adults and children when oral and enteral nutrition are contraindicated (total PN) or inadequate (supplemental PN). PN has transformed the prognosis for many patients with previously fatal conditions. Higher protein and energy intake from PN in critically ill patients is associated with significant reductions in hospital and 60-day mortality rates and shorter time to discharge alive.[25-27]

Economic benefits of medical nutrition

Reductions in the use of healthcare resources associated with the use of medical nutrition (ONS, ETF and PN) produce significant potential cost savings for the NHS.

Comprehensive reviews of many studies in line with strict procedures have shown that managing malnutrition with ONS can produce an **average cost saving of around 10%** compared to standard care across a broad range of patient groups.[20,23] Detailed analyses of the studies showed that cost savings were driven by reduced healthcare resource use as illustrated in the figure here.



Introduction of reimbursement for commercial ETF has been associated with a reduction in the number of hospital admissions and length of stay, with savings in annual hospitalization costs.[28] Home PN also plays a key role in shortening the length of hospital stay for patients who are ready for discharge but who require intravenous nutrition[29], which may yield considerable cost savings for the healthcare system. Home PN has been associated with significant cost-savings compared with hospital based PN.[30,31]

Medical Nutrition as an integrated part of key guidelines and good practice

Many national, international and professional guidelines exist that include ONS, ETF and PN as an integral part of patient care. However, continued effort is needed to ensure that these guidelines are embedded in practice. Medical Nutrition has the potential to ease the burden on the NHS through reductions in admissions, less dependency and less healthcare resource use.

In England, an economic analysis suggests that **implementing guidelines on nutritional support in adults including screening, assessment, ONS, ETF and PN ultimately saves rather than costs money – as much as £119,000 to £432,000 per 100,000 of the population** depending on the model used).[3]

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