‘Malnutrition & Nutrition Support in the Elderly – who, what when and how?’

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Co Chair Malnutrition Task Force
British Association for Parenteral & Enteral Nutrition

A multi-disciplinary charity committed to raising awareness of malnutrition and options for nutritional treatment and the consequent impacts on health outcomes, resource utilization, and health & social care budgets.
You are what you eat!

Genes

Age
Activity
Disease & Injury

Nutritional Intake (past & present)

Good nutrition = health and resistance to disease

Poor nutrition = ill health and susceptibility
Causes of Malnutrition

- Conscious level
- Depression
- Anorexia
- Poor diet - age, poverty, junk, sitting, alcohol
- Dysphagia
- Obstruction
- Vomiting
- Pancreatic failure
- Malabsorption
- Liver processing
- Jaundice
- Increased Metabolic demands
Nutritional Problems in the Elderly

**PHYSICAL**
- Mobility
- Feeding
- Swallowing
- Low activity
- Decreased organ reserve
- Specific disease
- Multiple drugs (taste)
- Alcohol

**SOCIAL**
- Isolation
- Poverty

**PSYCHOLOGICAL**
- Depression/bereavement
- Dementia
Inadequate food intake is common in hospital patients

- European Nutrition Day survey* found that of patients aged >75 years only¹:
  - 46% ate all of breakfast
  - 34% ate all of lunch
  - 35% ate all of dinner

- Older inpatients in a hospital elderly care unit in the UK were judged to be eating inadequately at only 67% of assessments²

*748 units in 25 countries, total $n=16455$, aged >75 years $n=4799$.
Inadequate food intake is common in community patients

- NutritionDay survey of Austrian and German nursing homes* showed 1 in 3 residents ate ≤ 50% of their lunch on the assessment day

- Eating difficulties found to be common (56%) in special accommodation residents i.e. nursing home-type care in Sweden

*n=1922.


## Prevalence of malnutrition

<table>
<thead>
<tr>
<th></th>
<th>Hospitals</th>
<th>Care Homes</th>
<th>Mental Health Units</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Centres (n=)</td>
<td>Patients (n=)</td>
<td>Centres (n=)</td>
</tr>
<tr>
<td>2007 Autumn</td>
<td>175</td>
<td>9336</td>
<td>173</td>
</tr>
<tr>
<td>2008 Summer</td>
<td>130</td>
<td>5089</td>
<td>75</td>
</tr>
<tr>
<td>2010 Winter</td>
<td>185</td>
<td>9668</td>
<td>148</td>
</tr>
<tr>
<td>2011 Spring</td>
<td>171</td>
<td>7541</td>
<td>78</td>
</tr>
<tr>
<td>Prevalence</td>
<td>25-34%</td>
<td>30-42%</td>
<td>18-20%</td>
</tr>
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</table>
Malnutrition in the Media

Elderly leave hospital malnourished

Figures show more hospital patients malnourished on departure from hospital than on arrival.

By Owen Doescott
Guardian.co.uk, Friday 22 January 2010 07:00 GMT

Almost 10,000 patients who went into hospital healthy last year were left to starve in hospital.

Hard to stomach: A record 10,000 hospital patients hit by malnutrition

By Daniel Martin
Last updated at 10:23 AM on 22nd January

At least 10,000 patients left hospital last year under NHS care - the highest number on official NHS figures - that in 2009 for malnutrition and another nutritional difficulty.

But 185,448 were suffering the same condition.

Thousands of patients leave hospital malnourished

Almost 200,000 NHS patients left hospital malnourished last year, it has emerged, raising questions about food standards on wards.

By Rebecca Smith, Medical Editor
Published: 7:55AM GMT 22 Jan 2010

New figures uncovered by the Conservatives have found that the number of patients leaving hospital malnourished has risen by record levels in the last year.

The figures showed that more patients leave hospital malnourished than went in with the problem, which the Conservatives branded a "scandal".

Lack of help with eating has been a major source of complaint in the NHS and has been consistently raised by regulators despite the introduction of schemes such as red trays to highlight which vulnerable patients need assistance with food.

Health officials said the issue was complex and malnutrition could arise as a complication of the underlying illness rather than lack of care, for example cancer patients may lose their appetite while on certain treatments.

They said that patient care does not stop because they were discharged from hospital and many receive other care.
MALNOURISHMENT IN THE COMMUNITY

- Incidence of low body weight (BMI < 20)
  - >5% of the ‘healthy’ UK adult population over 65 yrs
  - >10% of the chronically sick (higher for those suffering from cancer, lung disease, GI problems, neurological and psychiatric illness.)
CONSEQUENCES OF MALNUTRITION (OCCURRING WITHIN DAYS)

Malnutrition is both a cause and a consequence of disease

- Poor breathing and cough from loss of muscle strength
- Poor Immunity and infections
- Liver fatty change, functional decline necrosis, fibrosis
- Decreased Cardiac output
- Hypothermia - decline in all functions
- Renal function - limited ability to excrete salt and water
- Impaired gut integrity and immunity
- Loss of muscle and bone strength - Immobility, falls, fractures and VTE
- Impaired wound healing and susceptibility to pressure ulcers
- Psychology - depression & apathy
- Loss of muscle and bone strength

Malnutrition is both a cause and a consequence of disease.
### Prevalence and Consequences of Malnutrition in the UK

**HOME**
General population (adults)
- BMI <20kg/m²: 5%
- BMI <18.5kg/m²: 1.8%
- Elderly: 14%

**HOSPITAL**
- 28% of admissions

**SECONDARY CARE**
- ↑ complications
- ↑ length of stay
- ↑ readmissions
- ↑ mortality

**SHELTERED HOUSING**
- 10-14% of tenants

**CARE HOMES**
- 30-42% of recently admitted residents

**PRIMARY CARE**
- ↑ hospital
- ↑ dependency
- ↑ GP visits
- ↑ prescription costs
The Malnutrition Carousel

**PRIMARY CARE**
- ↑ dependency
- ↑ GP visits
- ↑ prescription costs
- ↑ hospital admissions

**SECONDARY CARE**
- ↑ complications
- ↑ length of stay
- ↑ readmissions
- ↑ mortality

- malnutrition

- NURSING HOME
- CARE HOME
- HOSPITAL
- HOME

B A P E N
Malnutrition Matters
Over 3 million individuals malnourished or at risk of malnutrition in the UK.

Public expenditure associated with disease related malnutrition:

NICE Cost Saving Guidance places malnutrition as the 3rd potential biggest cost saving to the NHS.
Nutritional Treatment should:

- Improve general status
  - Immunity
  - Wound healing
  - Ventilation
  - Mobility
  - Psychology
Buys time for other medical and surgical interventions to work

ITU patients would die at 20 to 30 days

Make stronger for discharge
Nutrition Support in Adults
The Problems of EBM in Nutrition Support

- Small trials use different
  - Indications for intervention and exclusion
  - Levels of feeding
  - Controls
  - Starting times
  - Routes of support
  - Duration of support
  - Outcome measures

in very heterogenous populations
Wanted – volunteers for RPCT

Patients with an undoubted need for nutrition support cannot be randomized
Treating Malnutrition Works

Southampton meta-analysis of oral and enteral tube studies in malnourished patients

- 10 RCT, n = 494; RR 0.29 (CI 0.18 to 0.47)
- 30 RCT, n = 3258; RR 0.59 (CI 0.48 to 0.72)

Decreased complications %

Decreased mortality %
### NICE ONS and length of stay

<table>
<thead>
<tr>
<th>Study</th>
<th>% Weight</th>
<th>Standardised Mean diff. (95% CI)</th>
</tr>
</thead>
<tbody>
<tr>
<td>HARTSELL1997</td>
<td>12.3</td>
<td>-0.32 (-0.83, 0.20)</td>
</tr>
<tr>
<td>PEARL1998</td>
<td>12.7</td>
<td>-0.49 (-0.78, -0.21)</td>
</tr>
<tr>
<td>REISSMAN1995</td>
<td>12.4</td>
<td>-3.00 (-3.45, -2.55)</td>
</tr>
<tr>
<td>Gist 2002</td>
<td>12.6</td>
<td>-0.03 (-0.39, 0.33)</td>
</tr>
<tr>
<td>Gocmen 2002</td>
<td>12.5</td>
<td>-2.54 (-2.93, -2.15)</td>
</tr>
<tr>
<td>Burrows1995</td>
<td>12.5</td>
<td>-0.38 (-0.78, 0.01)</td>
</tr>
<tr>
<td>Patolia2001</td>
<td>12.4</td>
<td>-2.08 (-2.53, -1.63)</td>
</tr>
<tr>
<td>Weinstein1993</td>
<td>12.6</td>
<td>0.11 (-0.25, 0.47)</td>
</tr>
<tr>
<td><strong>Overall (95% CI)</strong></td>
<td></td>
<td><strong>-1.09 (-1.91, -0.27)</strong></td>
</tr>
</tbody>
</table>
Deaths from Malnutrition
Office of National Statistics data resulting from a Parliamentary Question in 2009

Hospital Malnutrition
2007
242 patients died

MALNUTRITION
1997-2007
2,311
Deaths in hospital
Source: ONS
Options for Treatment

- Food
- Food Fortification
- Oral Nutrition supplements
- Enteral Tube Feeding
- Parenteral Nutrition
Nutritional Treatment
Food First:
Yes in Health or Deprivation with a good appetite
Food as Treatment

Simon Allison – BAPEN

‘The provision of food suitable for the sick is not just a hotel function, it is treatment’

- Ordering – language, disabilities, illiteracy, inefficient systems
- Menu choice
- Appearance, presentation & palatability
- Meal time disruption
- Help to eat
- Staff attribute inadequate importance to food
Feeding individuals is more challenging than it looks

- More than 75% of patients depend on food and beverage services for all nutritional needs

- Expenditure on food and food service is less than 10% of drug bill

- Catering budgets (and dietitians) make easy targets

- All members of the team have an important role. Small deficits accumulate into big problems

- “there is plenty of room for improvement and a change of attitude about the importance of hospital nutrition is required in both patients and caregivers.”

Hiesmayr M, et al., Decreased food intake is a risk factor for mortality in hospitalised patients: The... Clinical Nutrition (2009), doi:10.1016/j.clnu.2009.05.013
Food First: Yes in Health or Deprivation with a good appetite

But many malnourished and acute/chronic illness or injury (DRM) have appetite loss, depleted micronutrients and high micronutrient demands.
Why does nutrition support help?

Jeejeebhoy 1988. ‘The benefits of nutritional support are evident when too little nutrition is given for too short a time to have any noticeable influence on lean body mass or circulating proteins.

- Micronutrients
- Metabolic switching

Food First, Fortification or Fully Balanced Formula

Dr Mike Stroud
Senior Lecturer in Medicine & Nutrition
Consultant Gastroenterologist
Southampton

BAPEN Chair
(but not any more!!!!!)
ONS Effects on total energy Intake and intake from food

Significant increase in energy intake P<0.0001.

Oral nutritional supplements and increased oral intake: results from a systematic review. Hubbard et al. BAPEN 2011

46 studies (32 RCTS): 33 community, 10 hospital, 3 mixed
ONS compliance 78%

TEI at baseline and end intervention in 10 ONS and 9 control
Significantly lower complication rates in supplemented surgical, orthopaedic, elderly and neurology hospital patients

$p < 0.001$; odds ratio $0.31$ (95% CI, 0.17 to 0.56), meta-analysis of 7 trials, $n = 384$; no significant heterogeneity between studies

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Significantly lower proportion of acutely ill older people readmitted to hospital at six months when supplemented with high protein ONS compared with placebo\(^1\)

\(\text{Standard treatment + placebo} \quad 40\% \quad \text{High protein ONS} \quad 29\%\)

\((p < 0.05) \ (n = 445, \text{aged between 65 and 92 years})\)

Significantly lower mortality rates found in supplemented hospitalised liver disease, orthopaedic, and surgical patients, and hospitalised older people

\[ p < 0.001; \text{odds ratio } 0.61 \text{ (95\% CI, 0.48 to 0.78), meta-analysis of 11 trials, } n = 1965; \]

no significant heterogeneity between individual studies

COST SAVINGS IN MALNOURISHED HOSPITAL PATIENTS USING ONS

- Retrospective cost analysis, 9 trials + / - ONS
- Mean cost savings of between £352 - £8179 per patient in surgical, orthopaedic, elderly and cerebrovascular accident patients
- Cost savings also demonstrated in other patient groups:

<table>
<thead>
<tr>
<th>Patient group</th>
<th>Cost saving per patient</th>
</tr>
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<tbody>
<tr>
<td>Older patients at risk of developing pressure ulcers (Stage IV)</td>
<td>£460</td>
</tr>
<tr>
<td>Pooled results from analysis in surgical, elderly and stroke patients</td>
<td>£849 (bed day costs) £298 (complication costs)</td>
</tr>
<tr>
<td>Abdominal surgery patients</td>
<td>£218</td>
</tr>
</tbody>
</table>

Evaluation of the economic impact of using ONS among malnourished older people in the community found ONS:

- Reduced healthcare utilisation
- Reduced home nursing visits
- Resulted in less GP and physiotherapist visits
- Led to fewer hospital admissions
- Shorter length of hospital stay with admission

After considering the investment required for ONS, the average reduction in medical care costs was €195 per patient

No evidence for use of dietary advice

- Cochrane - A review of 36 studies (n = 2714) found dietary advice plus ONS is more effective than dietary advice alone or no advice on weight gain.

- NICE were unable to demonstrate any evidence of effect of dietary advice\(^2\).

- Many studies failed to report outcomes of interest.


Threats - BMJ 18th January 2012

- £210 million increased by 33% in 3 years

- Total calorie intake is the main issue when it comes to malnutrition

- A Mars bar or biscuit a day is as good as ONS
The Challenge:
We know what excellent nutritional care looks like

WE NEED HIGHLY RELIABLE SYSTEMS THAT WORK ACROSS ALL HEALTH SETTINGS
Reliable systems of nutritional care - The 5 tenets

**IDENTIFY**
- Design systems to screen all patients using a validated screening tool
- Use local CQUINs

**TREAT**
- Develop personal nutritional care plans

**EDUCATION**
- BAPEN e-learning modules
  - E-learning for Health

**STRUCTURES AND PATHWAYS**
- Continuity across boundaries
- Senior Leader Support

**PREVENT**
- Work with Public Health, Local Government and Social Services

*Aim for good nutritional care for every individual, in every setting, on every day*
Nutritional Care
Quality Improvement Programme

Work with local patient and carer organisations:
AGE UK
Carers UK
PINNT

Clinical Commissioning Groups have a key role

Integrated Nutritional Care

Professional Associations

Work with local professionals and members of BAPEN, the BDA and the RCN/NNNG

Care Settings

CCGs

Work with local providers:
• NHS Trusts – acute, community, mental health
• Care Homes
• Sheltered Housing

Putting patients at the centre of good nutritional care
...but we are still struggling to deliver this

How do we make sure that we can deliver good nutritional care in a highly reliable way across a rapidly changing health and social care system?
Overcome challenges to improving quality

- Convince people there is a problem
- Convince them there is a solution
- Invest in data collection and feedback systems
- Have the right kind of leadership

What

How
Mission

To ensure the prevention and treatment of malnutrition is embedded in all care and community support services and awareness is raised amongst older people and their families.
A National Strategy for Nutrition and Hydration

- Nutrition Care Thermometer
- RCA Review
- Communications
- Patient and Carer Experience
- Education and Training
- Nutrition and Hydration Collaborative
- Mission Nutrition
- Innovation
- Nutritional Supplements and Feeds
Nutrition at the heart of Care

- Safety ✓
- Effectiveness ✓
- Equality ✓
- Patient experience ✓