



BAPEN

Advancing Clinical Nutrition

NUTRITION SCREENING SURVEY IN THE UK AND REPUBLIC OF IRELAND IN 2010

A Report by the
British Association for Parenteral and Enteral Nutrition (BAPEN)

HOSPITALS, CARE HOMES AND MENTAL HEALTH UNITS

NUTRITION SCREENING WEEK SURVEY AND AUDIT
(MAIN DATA COLLECTION: 12-14 January 2010)

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on behalf of BAPEN and collaborators

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**Chief Nursing Officer
in Northern Ireland**



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Key Points

UK Survey

- In this the third Nutrition Screening Week survey (winter-2010) 'malnutrition' (medium + high risk according to 'MUST') was found to affect more than 1 in 3 adults on admission to hospitals, more than 1 in 3 adults admitted to care homes in the previous 6 months, and 1 in 5 in adults on admission to Mental health Units in the UK. Most of those affected were in the high risk category. 'Malnutrition' is common in all types of care homes and hospitals, all types of wards and diagnostic categories, and all ages. The overall results are similar to those obtained in the summer (2008) and autumn (2007) Nutrition Screening Week surveys, with the exception of:
 - a higher prevalence of 'malnutrition' on admission to hospital found in the present survey.
 - a higher prevalence of 'malnutrition' found on recent admission to care homes in the 2008 survey
- Nutritional screening policies and practice vary between and within health care settings, and so malnutrition continues to be under-recognised and under-treated.
- The 'Malnutrition Universal Screening Tool' ('MUST') was the most commonly used nutritional screening tool in all care settings. In some centres no screening tools were being used and /or no training on nutritional screening provided.
- There was a lack of awareness of standards relating to weighing scales in all settings although centres that were aware (ranging from 35%-52% centres) knew that scales should be regularly calibrated. Some were therefore potentially failing to meet national recommendations and ignoring a Department of Health alert (1). It is uncertain whether similar standards exist in all countries in the UK
- Whilst nutritional screening is linked to care plans in most institutions this is not routinely followed through into discharge planning. Continuity of nutritional care could therefore be hindered.
- Much of the 'malnutrition' present on admission to institutions originates in the community. Consistent and integrated strategies to detect, prevent and treat 'malnutrition' should exist within and between all care settings.

Republic of Ireland Survey

- In this the first Nutrition Week Survey to be undertaken in the Republic of Ireland (ROI), the prevalence of 'malnutrition' on admission to hospital or recent admission to care homes (within the previous 6 months) was found to be very similar to that found in UK institutions. More than 1 in 3 adults admitted to hospital and more than 1 in 3 admitted to care homes were found to be at risk. Most of those affected on admission to hospital were in the high risk category whilst those affected in care homes were equally at high and medium risk. 'Malnutrition' is common in all types of care homes and hospitals, all types of wards and diagnostic categories, and at all ages.
- Nutritional screening policies and practice vary between and within health care settings. Whilst all centres had access to nutrition and dietetic services most hospitals did not have a screening policy in place or have access to a Nutrition Support Team for the management of complex nutritional care.
- Nutritional screening tools were not used in all hospitals and so 'malnutrition' may be under-recognised and under-treated. Where screening was undertaken, the 'Malnutrition Universal Screening Tool' ('MUST') was the most commonly used nutritional screening tool. All care homes used a nutritional screening tool.
- There was a lack of awareness of standards relating to weighing scales in all settings although centres that were aware (ranging from 41%-62% centres) knew that scales should be regularly calibrated. However, in Ireland there are no specific standards relating to weighing scales similar to those issued by the Department of Health in England (1).
- Nutritional screening was linked to care plans in about half of hospitals in the survey but this was not routinely followed through into discharge planning. All care homes linked the results of nutritional screening to care plans. Continuity of nutritional care following discharge from hospital could therefore be hindered.
- Much of the 'malnutrition' present on admission to institutions originates in the community. Consistent and integrated strategies to detect, prevent and treat 'malnutrition' should exist within and between all care settings.

When comparing results from the UK and ROI, factors affecting admission to care in the different healthcare systems should be borne in mind.

The results of this and the previous Nutrition Screening Week Surveys (2008 and 2007) should be regarded as interim results. It is planned to undertake one more survey in the Spring of 2011, to amalgamate all the data obtained in the four seasons, and analyse them together to obtain a more complete picture of 'malnutrition' in the UK. The results of the 2010 and 2011 Nutrition Screening Week surveys will also be amalgamated to provide a more complete picture of 'malnutrition' in Ireland.

Summary

1. The Nutrition Screening Survey

1.1 This Report provides a summary of the third nutrition screening survey undertaken in the UK. It also includes, for the first time, data from hospitals and care homes in the Republic of Ireland (ROI). The survey was carried out from 12-14th January 2010 reflecting the prevalence of 'malnutrition' during the winter. Reporters from 185 hospitals, 148 care homes and 20 mental health units in the UK and 29 hospitals and 17 care homes in ROI completed a general questionnaire and an anonymous patient/client questionnaire as part of a national audit on nutritional screening using criteria based on the 'Malnutrition Universal Screening Tool' ('MUST') in all care settings. Data were collected on patients during the first three days of admission to hospitals and acute mental health units, and on residents admitted to care homes and long stay/rehabilitation mental health units in the previous six months. The combination of medium and high risk categories is henceforth referred to as 'malnutrition' for simplicity.

For the UK, the results of the 2010 survey have been compared with those of the 2008 and 2007 nutrition screening surveys which were undertaken in the summer from 1st -3rd July 2008 and in the autumn from 25th-27th September 2007. The results for Ireland are presented for the first time.

2. UK Survey

2.1. Hospitals

2.1.1. Of 9668 patients who were screened on admission to hospital, 34% were found to be at risk of malnutrition, high risk (21%), and medium risk (14%), higher than the overall prevalence found in the 2008 and 2007 surveys.

2.1.2. Overall the results for the hospital survey in 2010 regarding those on policies and practice were similar to those for 2008 and 2007.

2.1.3. More than 8 out of 10 hospitals audited the practice of nutritional screening, higher than in 2008 and 2007 and most undertaking an audit every year.

2.1.4. Just over half of hospitals were aware of standards regarding weighing scales although none were able to specify those issued by the Department of Health (1). Most respondents were aware that scales should be regularly calibrated.

2.1.5. 71% of patients included in the survey were admitted from their own homes, suggesting that the risk of malnutrition largely originated in the community. Strategies to prevent, identify and treat malnutrition in the community setting should therefore be considered.

2.1.6. 'Malnutrition' varied significantly according to source of admission (31% from home, 41% from another hospital, 38% from another ward, and 59% from a care home), type of admission (39% for emergency admission, 24% for elective admission), and type of ward (e.g. 42% in care of the elderly wards and 20% in orthopaedic/trauma wards). There was a significant difference between the prevalence of 'malnutrition' in hospitals with less than 1000 beds and larger hospitals with 1000 or more beds (35% v 31%).

2.1.7. 'Malnutrition' was common in all age groups and diagnostic categories, but it was significantly more common in women (36% v 32%), who were older than men, in subjects aged 65 years and over than under 65 years (39 v 28%), and in certain diagnostic categories compared with others (e.g. gastrointestinal disease (48%) and neurological disease (34%) versus cardiovascular disease (23%) and musculoskeletal conditions (24%)). 'Malnutrition' was present in a higher proportion of patients with respiratory disease than in 2008 and 2007 (42% v 37% and 32%)

2.1.8. 13% of patients included in the survey were reported to have cancer. 'Malnutrition' was significantly higher in those patients with cancer than in those without (44% v 32%).

2.1.9. A low body mass index (BMI <20 kg/m²) contributed to a 'MUST' category (medium + high) in 46% of 'malnourished' patients

2.1.10. Most hospitals reported that they had a screening policy (87%), but weighing on all wards was only carried out in just over half the hospitals in the survey, Furthermore, only 59% patients were on wards where it was stated that the scales had been calibrated within the last 12 months.

2.1.11. Almost all hospitals reported using a nutrition screening tool and of those that did, 'MUST' was used in 73% of centres. Lectures / workshops were the most commonly used format for training staff on nutritional screening

2.1.12. Nutrition information on those patients identified as 'malnourished' was not always included in discharge communications. Almost half the hospitals reported that they always or usually included this information, 43% said they sometimes included it and 7% either did not or did not know. This suggests that 'malnutrition' may be under-recognised and under-treated following discharge from hospital.

2.2. Care Homes

2.2.1. Of 857 residents recently admitted and screened 37% were 'malnourished' (23% high risk, 15% medium risk) which was lower than in the 2008 survey but higher than in the 2007 survey. In 2008 42% residents were at risk (30% high risk, 11% medium risk) and in 2007 30% residents were 'malnourished' (20% high risk, 10% medium risk). This may be due to the difference in the mix of care homes that took part in the 3 surveys.

2.2.2. The prevalence of 'malnutrition' was greater in residents admitted from hospitals (43%) and other care homes (42%) than in those admitted from their own homes (30%). The prevalence was also greater in nursing homes (45%) than residential homes (30%).

2.2.3. Most care homes (92%) reported that they had a screening policy and almost all (95%) reported that they had a policy to weigh residents on admission. A higher proportion of care homes (82%) recorded the height of residents on admission than in the 2008 (65%) and 2007 (71%) surveys. 99% of care homes said they regularly weighed residents during their stay.

2.2.4. As in previous surveys around two thirds of care homes audited the practice of nutritional screening, most undertaking audit every year.

2.2.5. Just over half of care homes were aware of standards relating to weighing scales although none were able to specify those issued by the Department of Health (1). Most respondents were aware that scales should be regularly calibrated.

2.2.6. Almost all care homes reported using a nutrition screening tool and of those that did, 'MUST' was used in 85% of centres. Lectures / workshops were the most commonly used format for training staff on nutritional screening. 10% of care homes reported receiving no training for staff on nutritional screening.

2.2.7. The mean BMI of care home residents was 23kg/m² which was similar to that in 2008 and 2007. A low BMI (<20 kg/m²) contributed to the 'MUST' category (medium + high) in about 8 out of 10 'malnourished' residents. Underweight was 4 to 5 fold more common than obesity.

2.2.8. The subjects in care homes were older than those in hospitals and mental health units, more than 4 out of 10 of them being 85 years and over and among those with a 'MUST' score half were over 85 years and over. The prevalence of 'malnutrition' increased with age but it was not significantly related to duration of stay (up to 6 months).

2.2.9. Women were older and had a greater prevalence of 'malnutrition' than men (41% v 30%).

2.2.10. Over half the residents had neurological conditions, with an associated 'malnutrition' prevalence of 41%, 15% residents were classified as frail elderly with an associated 'malnutrition' prevalence of 35%. The highest prevalence (52%) was found in residents with respiratory disease although these accounted for only 3% of residents (n = 22) in the survey. 7% residents were reported to have cancer. 'Malnutrition' was higher in those residents with cancer than those without (42% v 37%).

2.3. Mental Health Units

2.3.1. Of 146 adults screened on admission, 18% were 'malnourished' (12% high risk, 7% medium risk), with a significant difference between acute units (29%) and long-stay units (13%). The overall prevalence was very similar to that reported in the 2008 survey (20%) and the 2007 survey (19%).

2.3.2. About 6 out of 10 units that participated in the 2010 survey reported that they had a screening policy as opposed to 8 out of 10 who took part in the 2008 survey and less than half the units who took part in the 2007 survey. Two thirds of patients were reported from units with a screening policy. Only 25% of units had access to a nutrition support team but all units had access to nutrition and dietetic services.

2.3.3. All units said their policy was to weigh patients on admission and 9 out of 10 units said that patients were weighed regularly throughout their stay. 65% of units reported recording patients' heights on admission.

2.3.4. About a third of units said they were aware of standards relating to weighing scales although none were able to specify those issued by the Department of Health (1). Most respondents were aware that scales should be regularly calibrated.

2.3.5. 17 out of the 20 units reported using a nutrition screening tool and of these 'MUST' was used in 53%. Local tools were used in 41% of centres. Lectures / workshops were the most commonly used format for training staff on nutritional screening. 5 units reported receiving no training on nutritional screening and only 4 units audited their practice of nutritional screening, all undertaking this each year.

2.3.6. The mean BMI was 26.7kg/m² which was similar to that in 2008 and 2007. A low BMI (<20kg/m²) was present in 11% of patients (5% with a BMI < 18.5 kg/m²). 22% had a BMI >30kg/m². A low BMI (<20 kg/m²) contributed to the 'MUST' category (medium + high) in about 6 out of 10 'malnourished' subjects. The mean age of subjects was lower than in the 2008 and 2007 surveys (50 years v 66years v 59 years respectively) and those subjects aged 65 years and over (25%) had a greater prevalence of 'malnutrition' (28%) than those less than 65 years (18%).

2.3.7. 14 out of the 20 units said they always included nutrition information on all patients identified as being 'malnourished' in discharge communications which was higher than in the 2008 survey when this was reported by only about 1 in 5 units.

2.4. A comparison across care settings

2.4.1. The prevalence of 'malnutrition' on admission to hospitals in this third survey was higher than that found in 2008 and 2007 (34% v 28% v 28%) but the prevalence on admission to care homes in 2010 was lower than in 2008 but higher than in 2007(37% v 42% v 30%). The prevalence of 'malnutrition' on admission to mental health units was lower than to other care settings and similar to that found in mental health units in both 2008 and 2007 (18% v 20% v 19%), although a much smaller number of subjects were reported from mental health units.

2.4.2. In all care settings most of the 'malnutrition' was high risk 'malnutrition'.

2.4.3. The prevalence of 'malnutrition' amongst subjects admitted to hospitals, care homes or mental health units varied significantly according to source of admission. In hospitals and care homes 'malnutrition' was lower in those that came from their own homes than from institutions (other wards, hospitals and care homes). This was not the case in mental health units where 'malnutrition' was lower in those subjects admitted from other hospitals or care homes than in those admitted from their own homes.

2.4.4. In hospitals and care homes women outnumbered men (ratio 1.2:1 in hospitals and 2.2:1 in care homes). In mental health units, men outnumbered women (3.3:1). In all care settings women were older and had a greater prevalence of 'malnutrition' than men.

2.4.5. BMI contributed to over 44% subjects categorised as 'malnourished' (medium + high risk) in acute hospitals, 35% subjects in community hospitals, 62% in mental health units, and 82% in care homes. Underweight (BMI <20kg/m²) was most common in care homes, affecting 31% of residents. The mean BMI in care homes (23.0 kg/m²) was significantly lower (p <0.001) than in hospitals (26.3 kg/m²) and mental health units (26.7 kg/m²). In care homes underweight was more common than obesity (BMI >30kg/m²), in mental health units and in hospitals obesity was more common than underweight.

2.4.6. Most hospitals and care homes said they had a nutrition screening policy although this was the case in only two thirds of mental health units. Awareness of standards for weighing scales used in healthcare settings varied and none of the centres that took part in the survey were able to specify those issued by the Department of Health (1). However respondents who said they were aware of standards knew that scales should be regularly calibrated.

2.4.7. Screening tools were used in almost all hospitals and care homes although not in all mental health units. 'MUST' was the most commonly used tool in all care settings and lectures / workshops was the most usual form of training on nutritional screening. A number of centres in all settings reported having no training provided on nutritional screening. The practice of auditing nutritional screening varied across care settings. It was most likely to happen in hospitals and least likely to happen in mental health units.

2.4.8. 9 out of 10 hospitals (92%) and almost all mental health units (95%) said they had care plans for the management of malnourished patients. However, less than half the hospitals reported that they always or usually included nutritional information in discharge communications although 7 out of 10 mental health units always or usually did so. The majority of care homes also reported that they had care plans for the management of malnutrition (96%).

3. Republic of Ireland Survey

3.1. Hospitals

3.1.1. Of 1602 patients who were screened on admission to hospital, 33% were found to be at risk of malnutrition (25% high risk, 8% medium risk), a similar overall prevalence to that found in hospitals in the UK survey.

3.1.2. Policies and practice regarding nutritional care varied and whilst just under half of hospitals reported having a nutrition steering committee only a quarter had a nutritional screening policy. All hospitals in the survey had access to nutrition and dietetic services but only 2 reported having access to a nutrition support team.

3.1.3. 6 out of 10 hospitals were aware of standards in relation to weighing scales although no specific standards were specified. Most respondents were aware that scales should be regularly calibrated.

3.1.4. 'Malnutrition' varied significantly according to source of admission (30% from home, 38% from another hospital, 54% from another ward, and 54% from a care home), type of admission (39% for emergency admission, 20% for elective admission), and type of ward (e.g. 51% in care of the elderly wards and 24% in orthopaedic/trauma wards). 86% of patients identified as at risk of 'malnutrition' were admitted from their own homes, suggesting that the risk of malnutrition largely originated in the community. Strategies to prevent, identify and treat malnutrition in the community setting should therefore be considered.

3.1.5. 'Malnutrition' was common in all age groups and diagnostic categories. There was no significant difference in 'malnutrition' between men and women. Risk increased with age and women were significantly older than men. The prevalence varied according to diagnostic category (e.g. gastrointestinal disease (48%), respiratory disease (38%) and neurological disease (32%) versus cardiovascular disease (24%) and genito/renal conditions (24%).

3.1.6. 13 % of patients included in the survey were reported to have cancer. 'Malnutrition' was significantly higher in those patients with cancer than in those without (44% v 32%).

3.1.7. A low body mass index (BMI <20 kg/m²) contributed to a 'MUST' category (medium + high) in 28% of 'malnourished' patients

3.1.8. Just over half of hospitals reported using a nutrition screening tool and in centres where this was the case, 'MUST' was used in 81%. Lectures / workshops were the most commonly used format for training staff on nutritional screening. However, less than 4 out of 10 hospitals audited their practice of nutritional screening although in those that did, most undertook an audit every year.

3.1.9. The results of nutritional screening were linked to a care plan in about half of hospitals in the survey. Nutrition information on those patients identified as 'malnourished' was not always included in discharge communications. Almost a third of the hospitals reported that they always or usually included this information, 59% said they sometimes included it and 9% either did not or did not know. This suggests that 'malnutrition' may be under-recognised and under-treated following discharge from hospital.

3.2. Care Homes

3.2.1. Of 154 residents recently admitted and screened 32% were 'malnourished' (16% high risk, 16% medium risk), Three quarters of residents were in exclusively nursing homes where the risk was higher than in those in exclusively residential homes (34% v 9%).

3.2.2. The prevalence of 'malnutrition' was greater in residents admitted from other care homes (38%) and home (30%) than in those admitted from hospitals (21%).

3.2.3. Most care homes (94%) reported that they had a screening policy and all reported that they had a policy to weigh residents on admission and regularly throughout their stay. 8 out of 10 care homes recorded the height of residents on admission.

3.2.4. Less than half of care homes were aware of standards in relation to weighing scales although most respondents were aware that scales should be regularly calibrated.

3.2.5. All care homes reported using a nutrition screening tool; 'MUST' was used in 53% and MNA used in 47% of centres. Lectures / workshops were the most commonly used format for training staff on nutritional screening. About two thirds of care homes audited their practice of nutritional screening, the majority of those that did undertaking an audit every year.

3.2.6. The mean BMI was 24.3kg/m². 23% of residents had a BMI of <20kg/m², 15% with a BMI of <18.5kg/m². A low BMI (<20 kg/m²) contributed to the 'MUST' category (medium + high) in about 7 out of 10 'malnourished' residents. Underweight was 2 times more common than obesity.

3.2.7. The prevalence of 'malnutrition' was not significantly related to age (33% in those <70 years, 31% in those 70-84 years and 33% in those ≥85 years) or duration of stay (up to 6 months). 3 out of 10 of all residents were aged 85 years and over and among those with a 'MUST' score 37% were aged 85 years and over.

3.2.8. Women were older and had a greater prevalence of 'malnutrition' than men (39% v 21%).

3.2.9. Almost half the residents had neurological conditions, with an associated 'malnutrition' prevalence of 41%, 14% residents were classified as frail elderly with an associated 'malnutrition' prevalence of 35%. The highest prevalence (52%) was found in residents with respiratory disease although these accounted for only 7% of residents in the survey. 5% of residents were reported to have cancer. 'Malnutrition' was higher in those residents without cancer than those with (32% v 25%).

4. Recommendations

4.1. Patients or residents admitted to all institutional care settings should be screened using a validated screening tool such as 'MUST', and repeat measurements made at intervals according to care setting, using accurate and reliable instruments (see 'MUST' report).

4.2. Scales on all wards and in all care settings should be calibrated annually.

4.3. Staff involved in nutritional screening should be trained and be competent to undertake screening and implement care plans.

4.4. The results of nutritional screening should be linked to care plans, which may vary according to local resources and policies.

4.5. Nutritional information should be included in communications relating to subjects identified as 'malnourished' on discharge from hospital and mental health units.

4.6. Access to nutrition advice and nutrition support teams should be available in all care settings.

4.7. The practice of nutritional screening should be audited regularly

4.8. Consistent strategies to detect, prevent, and treat malnutrition should be in place in all care settings, including the community, where most malnutrition originates.

Purpose of Survey

A series of recent national and international reports have emphasised the importance of nutritional screening to identify those who require treatment and those who do not. Amongst such reports are those from the Council of Europe (Hospitals only) (2), NHS Quality Improvement Scotland (Hospital only), (3) National Institute of Health and Clinical Excellence (all care settings) (4), Department of Health (Nutrition Action Plan (all care settings) (5), Care Quality Commission (6) and the Department of Health and Children (Hospitals only) (7) and The Health Information and Quality Authority (Residential care) in the Republic of Ireland (8). In addition there are reports from an alliance of organisations (all care settings) (9) and individual organisations, such as BAPEN (10 -12). However, it is believed that malnutrition continues to be under-recognised and under-treated. Important steps in the fight against malnutrition include: documenting the extent of this problem in different care settings and diagnostic categories; obtaining insights into the barriers towards screening and the relationship of these barriers to local policies, procedures and attitudes towards nutritional screening. Such data would complement information obtained during the European Nutrition Study Day which is held usually in January each year, although this does not collect information on admission to hospitals or other care settings. In addition, it is not known if there is a seasonal effect on the prevalence of malnutrition during the course of the year. It was therefore decided to undertake Nutritional Screening Week surveys at different times of the year to evaluate any seasonal variations in malnutrition risk. The 2007 nutrition survey was undertaken in the autumn in September 2007(13), the 2008 survey in the summer in July 2008 (14) and this survey was undertaken in the winter in January 2010. One further survey is planned for the spring in April 2011.

The scope of the 2010 survey differed from the previous 2 surveys as it was extended to include care settings in the Republic of Ireland (ROI) as well as the UK.

Malnutrition has detrimental effects on the individual, the National Health and Care Service and society in general. Nutritional screening can identify those at risk and enable early intervention. When malnutrition is identified on admission to institutions it directs attention to the problems that led to its development before admission, such as disease, poverty, deprivation, geography, and attitudes towards nutrition, which can be influenced by previous education and training.

The specific aims of the audit / survey were to:

1. Establish and compare the prevalence of malnutrition in different care settings and different types of institutions within these settings using the same screening test.
2. Document current screening practice and identify some of the problems that need to be rectified.
3. Provide feedback to local centres so the results can be benchmarked against those obtained throughout the UK and ROI
4. Provide recommendations to improve nutritional care.

In addressing these issues the results of this 2010 survey, which was carried out in winter, were compared with those of the 2007 and 2008 surveys (13,14), which were carried out in autumn and summer. Following the 2011 survey it is planned to amalgamate the results obtained from all four surveys and to examine in more detail issues related to gender, age, seasonality, diagnoses and different hospital characteristics to provide a more complete picture of malnutrition across the UK. Similarly, the results from the 2010 and 2011 surveys will be combined to provide a more robust picture of the problem of malnutrition in Ireland.

Methodology and Procedures

The survey was coordinated by BAPEN, and involved collaboration from the British Dietetic Association, the Royal College of Nursing and the Irish Nutrition and Dietetic Institute. Participants were recruited via organisational networks, adverts in newsletters and websites. The participants were asked to complete two forms: a general form about their institution and another form to record data on individuals who were screened on admission to care. The information was anonymous and had no specific patient identifiers. The appendix includes the sets of forms for hospitals, care homes and mental health units and the associated instructions. In hospitals and acute mental health units data for nutritional screening were obtained on adult patients admitted during 12-14 January 2010 within 72 hours of admission. In care homes and long stay/rehabilitation mental health units the data were restricted to adults who had been admitted in the previous 6 months and were still resident there. Individuals receiving enteral, parenteral nutrition or oral nutritional supplements were excluded. In all cases malnutrition risk was established using 'MUST'. For simplicity, medium + high risk in combination is referred to as 'malnutrition', except where otherwise stated. Diagnostic categories were system based (e.g. respiratory system, cardiovascular system). Patients with infection or cancer were included within the relevant diagnostic categories although participants were specifically asked to indicate if the primary diagnosis / problem was one of cancer.

A few additional questions regarding awareness of standards for weighing scales, type of screening tool used and method of training on nutritional screening provided were included in the general forms. In this survey it was assumed that none of the patients in care homes had no food for more than 5 days (or were likely to remain in care homes with no food for more than 5 days), as other cross sectional surveys have shown.

Data were entered into spread sheets, checked at the time of entry and re-checked again later, when an error rate of <0.2% was identified and corrected. Only subjects aged 18 years and over were included in the final analysis, which was undertaken using the Statistical Package for the Social Sciences (SPSS version 14; Chicago, Illinois, USA). Analysis included Chi squared tests, unpaired t tests and binary logistic regression. In the case of Chi squared tests, the p value refers to the differences between all the groups present. A p value of <0.05 was considered to be significant.

UK Survey

Hospital Survey – UK

GENERAL FEATURES

Total number of subjects (not all questions completed on all subjects)

- 10044 individual patients
- 9764 with 'MUST' ('Malnutrition Universal Screening Tool') scores
- 9668 with 'MUST' scores in patients 18 years and over

Hospitals

Number of hospitals

185

Policies, audit, and access to dietetic service and nutrition support team

	Nutrition steering committee (%)	Nutrition screening policy (%)	Nutrition screening audited*	Access to dietetic service (%)	Access to nutrition support team (%)
Yes	73	87	83	99	56
No	16	11	11	1	40
Don't know/no answer	11	3	5	0	4
Total	100	101*	99*	100	100
Number of hospitals	185	185	185	185	185

* Results do not add up to 100% due to rounding up of the component values to the nearest 1%.

Frequency of nutrition screening audit:

Every year	63%
Every 2 years	13%
Every 3 or more years	7%
No answer or don't know	17%

(Total base: N = 185 hospitals)

Nutritional screening and communication of nutrition information

Proportion of patients screened on admission known

Yes	72%
No	19%
Don't know	6%
No answer	3%

(Total base: N = 185 hospitals)

Percent of patients screened: Of the hospitals that responded (N = 141; 76% of total) 8% of hospitals screened 0-25% of their patients, another 9% of hospitals screened 26-50% of patients, 23% of hospitals screened 51-75% of patients, and 61% of hospitals screened 76-100% patients.

Recording of weight and height on admission

	Recording of weight (%)	Recording of height (%)
Yes, on all wards	52	36
Yes, on some wards	44	40
No	3	22
Don't know	1	2
No answer	0	0
Total	100	100
Number of hospitals	185	185

Awareness of standards re weighing scales

Yes	52%
No	29%
Don't know	17%
No answer	2%

(Total base: N = 185 hospitals)

Amongst those that answered yes (N=97) the following responses were obtained:

In house 'Calibration'	57%
National standards	11%
EU standards	6%
Maintenance contract for weighing scales	9%
Local standards	6%
No answer	10%

(Total base: N= 97 hospitals)

Results do not add up to 100% due to rounding up of the component values to the nearest 1%.

Linking screening results to a care plan

Yes	92%
No	4%
No answer or don't know	3%

(Total base: N = 185 hospitals)

Results do not add up to 100% due to rounding up of the component values to the nearest 1%.

Nutrition information included in discharge communication

Always	15%
Usually	32%
Sometimes	43%
Never	3%
Don't know	4%
No answer	2%

(Total base: N = 185 hospitals)

Results do not add up to 100% due to rounding up of the component values to the nearest 1%.

Type of screening tool used

MUST ^{††}	69%
'MUST' + local tool	2%
'MUST' + other tool	2%
NRS ^{††}	3%
NRS + other tool	<1%
Local tool	17%
Other tool	5%
No tool	<1%
No answer	2%

(Total base: N=185 hospitals)

[†]'MUST' = 'Malnutrition Universal Screening Tool'; ^{††}NRS = Nutrition Risk Score

Results do not add up to 100% due to rounding up of the component values to the nearest 1%.

Among centres that responded and used a tool, 'MUST' was used in 73% of centres

How are staff trained on nutritional screening?

Workbook	0%
Lecture/workshop	54%
Lecture/workshop + Workbook	5%
Lecture/workshop + E-learning	6%
Lecture/workshop + Other	16%
Lecture/workshop + Workbook + Other	2%
Other	9%
No training	6%
Lecture + e-learning + other	<1%
E-learning	2%

(Total base: N=185 hospitals)

Breakdown of 'Other' training

Dietitian	12%
Induction training	12%
Ward level training	76%

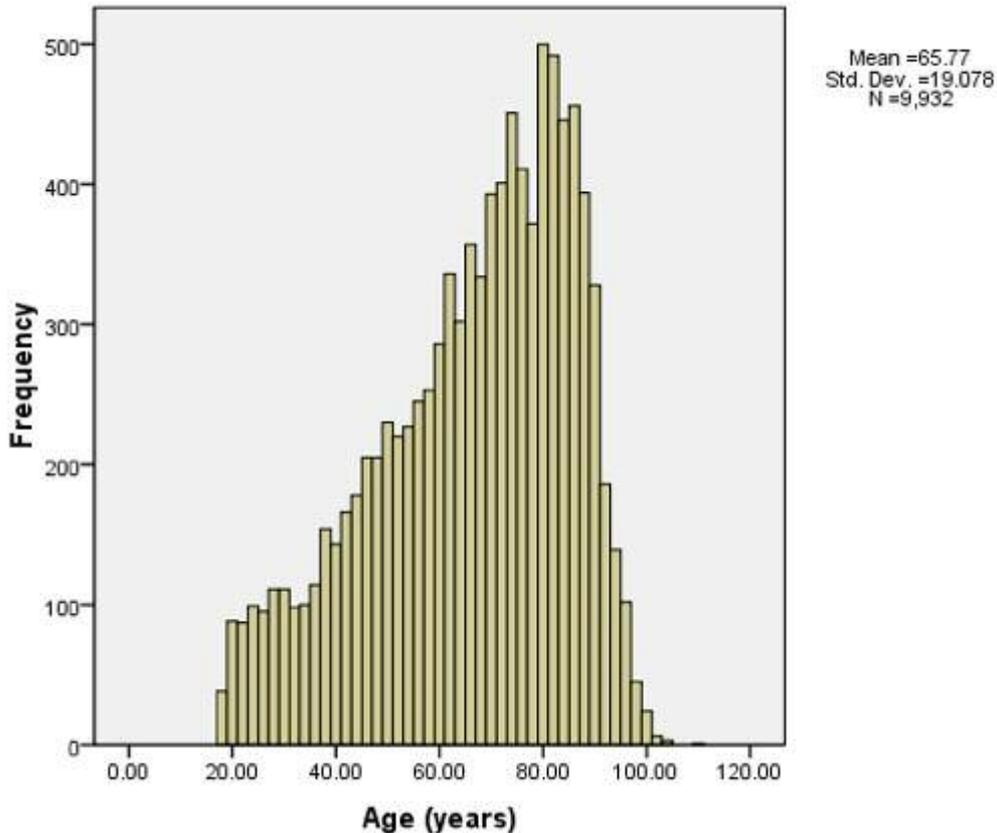
(Total base: N=17)

General subject characteristics UK

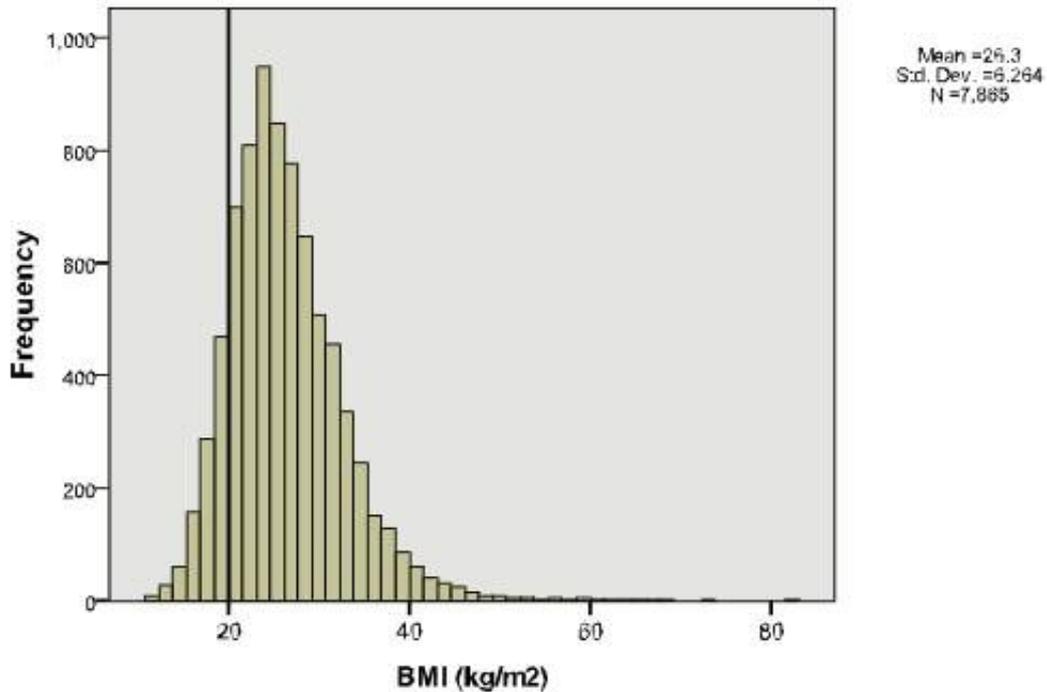
Gender: There were 5412 women and 4500 men (no gender reported on 20 subjects; total N = 9932) and a ratio of women to men of 1.20:1.00.

Age: The mean age was 65.8 (sd 19.1) years (median 69.5 years; inter-quartile range 53 - 81 years) (N = 9932). For men the median age was 68.0 years (mean age 65.1 (sd 18.1) years and for women 71.0 years (mean age 66.3 (sd 19.9) years).

59% of the patients were aged 65 years and over . The age distribution (range 18-109 years) is skewed to the left. In the figure of age distribution below, frequency refers to the number of patients in each age group, which is represented by the individual bars of the histogram.



Body mass index (BMI): The mean BMI was 26.3 (sd 6.3) kg/m² (median, 25.4 kg/m²). 13% of patients had a BMI less than 20 kg/m² (7% less than 18.5 kg/m²), 35% a BMI between 20 and 24.9 kg/m² and 53% had a BMI \geq 25 kg/m² (24% >BMI 30kg/m²) (Total N = 7865). In the figure of BMI distribution opposite, frequency refers to the number of patients in each BMI group, which is represented by the individual bars of the histogram. The reference line corresponds to a BMI of 20.0 kg/m².



Diagnostic categories: The diagnostic categories of adult patients in the survey were as follows: Gastrointestinal (GI) disease 15%; Cardiovascular disease 11%; Respiratory disease 14%; Musculoskeletal (including orthopaedic) 16%; Genito/Renal disease 8%; Neurological (CNS) disease 6%; other 26% and not known 3% (Total N = 9907).

13% (Total N= 10044) of patients were reported to have cancer which was found in all diagnostic categories. Of those with cancer 43% were in patients where the diagnostic category was described as 'other'; 23% in those with GI disease; 13% with Respiratory disease; 9% with Genito/Renal disease; 4% with Neurological conditions; 2% were not known; 4% with Musculoskeletal conditions; 3% Cardio-vascular disease, and the remaining 5% did not know or didn't respond.

PREVALENCE OF 'MALNUTRITION'

'MALNUTRITION' (MEDIUM + HIGH RISK) ACCORDING TO RISK CATEGORY

Medium risk	14%
High risk	21%
Medium + high risk	34%
Total base (N = 9669)	

Results do not add up to 100% due to rounding up of the component values to the nearest 1%.

'MALNUTRITION' ACCORDING TO COUNTRY

England	35%
Wales	33%
Northern Ireland	38%
Scotland	27%
Overall	34% (Total base: N = 9669)
P < 0.001	

The patients were in England (75%), Wales (6%), Northern Ireland (7%), and Scotland (12%).

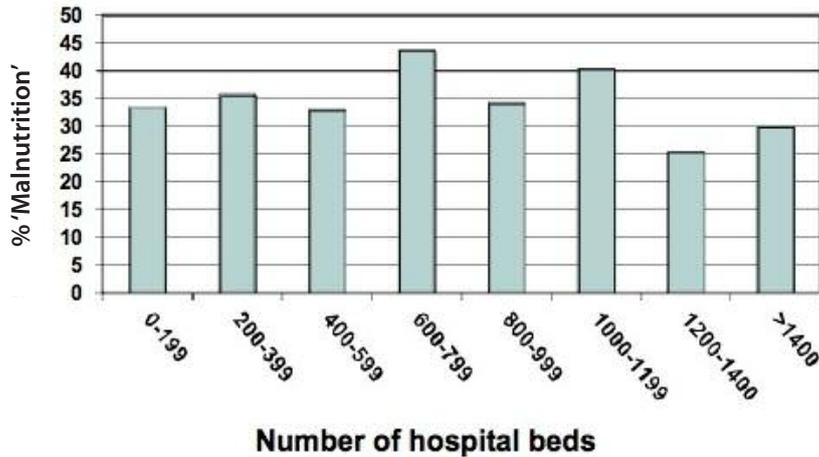
'MALNUTRITION' ACCORDING TO TYPE OF HOSPITAL AND OPERATIONAL HOSPITAL CHARACTERISTICS

'Malnutrition' according to type of hospital

Acute hospital	34%
Community hospital	34%
Overall	34% (Total base: N = 9669)

Patients in acute hospitals accounted for 92% of all the 'MUST' results, and those in community hospitals for 7% (the type of hospital for the remaining 0.5% of patients was not reported).

'Malnutrition' according to number of hospital beds



<1000 beds	35%
≥1000 beds	31%
Overall	34% (Total base: N = 9174)
P = 0.001	

Hospitals with less than 1000 beds accounted for 75% of patients who were screened.

'Malnutrition' according to type of admission

Emergency admission	39%
Elective admission	24%
Not known	34%
Overall	34% (Total base: N = 9669)

P < 0.001

67% were emergency admissions and 30% elective, 3% not known

'Malnutrition' according to source of admission

Admitted from:	'Malnutrition' risk
Home	31%
Other hospital	41%
Other ward	38%
Care home	59%
Overall	34% (Total base: N = 9669)

P < 0.001

71% came from their own homes, 8% from another hospital, 17% from another ward, and 4% from care homes.

'Malnutrition' according to nutrition screening policy

Nutrition screening policy:	'Malnutrition' risk	
Yes	34%	
No	32%	
Don't know	41%	
No answer	32%	
Overall	34%	(Total base: N =9669)
P = 0.125		

85% of patients were admitted to hospitals with a nutritional screening policy, 9% to hospitals without a screening policy, 1% to hospitals where the reporters did not know if there was a screening policy and 5% to hospitals that provided no answer.

'Malnutrition' according to audit of nutritional screening

Nutrition screening audited:	'Malnutrition' risk	
Yes	34%	
No	34%	
Don't know	44%	
No answer	32%	
Overall	34%	(Total base: N = 9634)
P = 0.090		

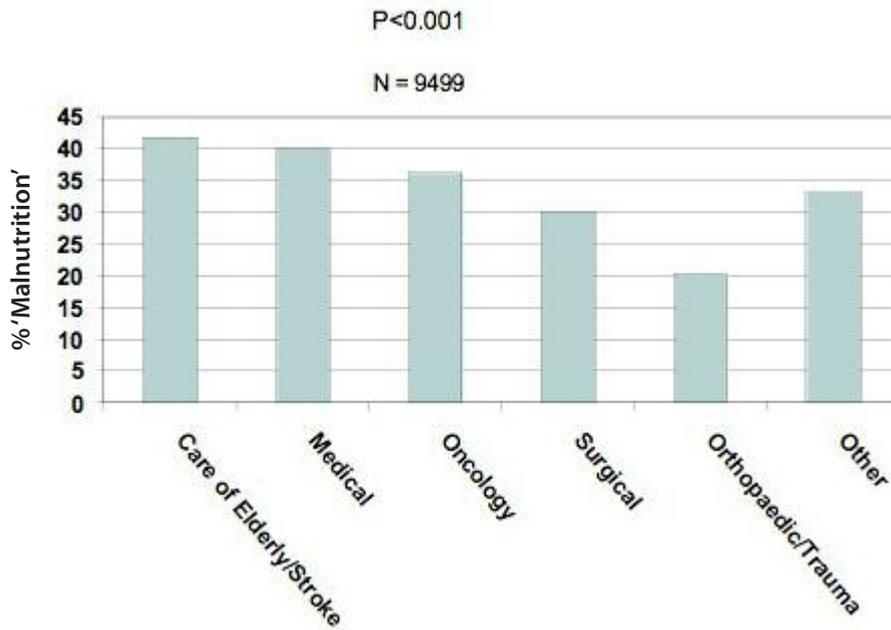
90% of patients were admitted to hospitals that audited nutritional screening, 4% into hospitals that did not, 1% into hospitals in which the reporters did not know whether auditing took place, and 5% to hospitals that provided no answer.

'Malnutrition' according to proportion screened

Percentage screened	'Malnutrition' risk	
0-25 %	47%	
26-50%	38%	
51-75%	36%	
76-100%	29%	
No response	34%	
Overall	34%	(Total base: N = 9669)
P <0.001		

7% of patients were admitted to hospitals in which 0-25% of patients were screened, 17% in which 26-50% were screened, 34% in which 51-75% were screened, 34% in which 76-100% were screened, and 7% to hospitals that provided no answer.

'MALNUTRITION' RISK ACCORDING TO TYPE OF WARD



11% of patients were in Care of the Elderly/Stroke, 35% in Medical wards, 5% in Oncology wards, 28% in Surgical wards, 12% in Orthopaedic/Trauma wards and 10% in other types of wards.

'MALNUTRITION' RISK ACCORDING TO SUBJECT CHARACTERISTICS

'Malnutrition' risk according to gender

Women	36%	
Men	32%	
Overall	34%	(Total base: N = 9669 (gender not reported (N=20))

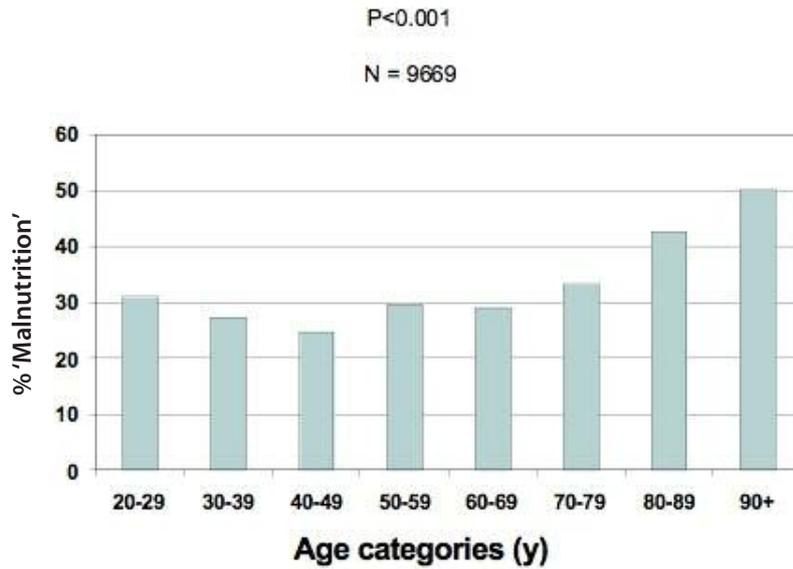
P <0.001

Risk increased with age and women were significantly older than men, but women remained at greater risk even after adjustment for age (binary logistic regression).

Women accounted for 55% of all patients and men for 45%.

'Malnutrition' risk according to age

A substantial malnutrition risk was present at all ages.

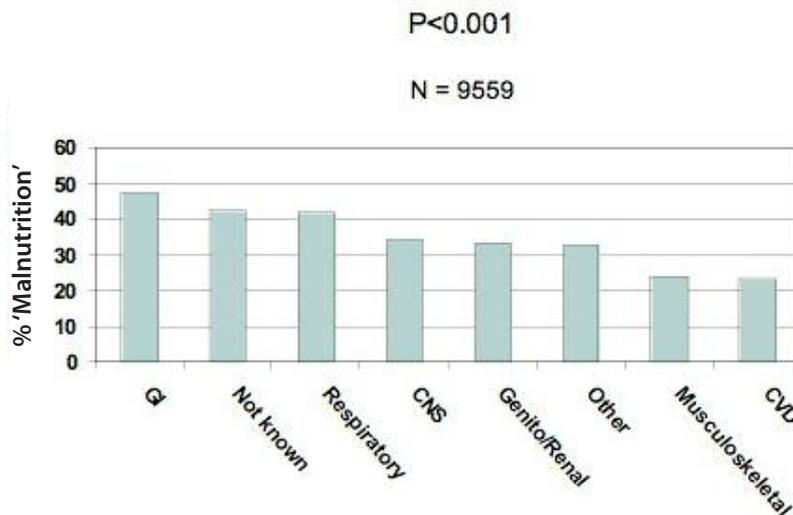


The risk was 28% in patients <60 years, 32% in those aged 60-79 years and 44% in those 80 years and over. It was 37% greater in patients aged 65 years and over than those <65 years (39% v 28%; p < 0.001).

Contribution of a low BMI to 'MUST' score

Underweight (BMI <20kg/m²) contributed to 46% of patients categorised as 'malnourished' (medium + high risk).

Malnutrition' according to diagnostic category



Of the patients screened 15% had GI (Gastrointestinal) disease, 3% diagnoses not known, 14% Respiratory disease, 6% Neurological (CNS) diseases, 8% Genito/ Renal, disease, 26% other diagnoses, 16% Musculoskeletal disease and 12% Cardiovascular (CVS) disease.

'Malnutrition' according to presence of cancer

No	32%
Yes	44%
Don't know	42%
No answer	31%
Overall	34% (Total base: N = 9669)
P <0.001	

82% of all patients were reported to have no cancer and 13% to have cancer. In the remainder the response was 'don't know' (4%). In those patients with cancer, the prevalence of 'malnutrition' varied according to diagnostic category: 59% in GI disease; 49% in Respiratory disease; 41% Neurological disease; 30% in Cardio-vascular disease; 33% in Genito/Renal disease, 39% in Musculoskeletal conditions and 38% in other diagnoses.

'Malnutrition' according to presence of other conditions

No	27%
Yes	38%
No answer	30%
Overall	34% (total base: N = 9669)
P <0.001	

34% of all patients had no other conditions and 64% did. There was no answer in the remaining 2%.

Comments

This was the third survey on nutritional screening to be undertaken in hospitals in the UK. As in the 2007 and 2008 surveys, the sample was not chosen randomly from UK hospitals, but again the results clearly show that 'malnutrition' is common on admission to acute and community hospitals, all types of wards, and in all age groups and diagnostic categories. However, the mix of hospitals participating in the 3 surveys was different and the number of hospitals that took part in 2010 was more than the number that took part in 2008 and 2007 (185 v 130 and 175 respectively). The total number of patients screened was also more (9668 v 5089 and 9336). Although the overall 'malnutrition' risk identified was the same in the 2008 and 2007 surveys (28%), it was higher (34%) in this survey. As in the previous surveys, most patients screened were at high risk of 'malnutrition' (21%) compared to a smaller proportion at medium risk (14%). Underweight (BMI <20kg/m²) was present in 46% of patients who were categorised as 'malnourished' (medium + high risk).

The prevalence of 'malnutrition' was significantly different between the four countries of the UK although the majority (75%) of patients included in the survey were admitted to hospitals in England.

Although the reason for the higher prevalence of 'malnutrition' in the current survey compared with the previous two surveys is unclear, it may be related to: admission of more 'malnourished' individuals in the winter; fewer admissions from home and more from other care settings; a higher proportion of women who were older and more at risk than men; a higher prevalence of 'malnutrition' in those with respiratory disease; the greater age of the population admitted to hospital; a higher proportion of emergency admissions with a greater associated prevalence of 'malnutrition'; and to random variation and/or recruitment bias.

Little difference was found in policy and practice reported in all 3 surveys although a higher proportion of hospitals in the 2010 survey stated they audited the practice of nutrition screening and that they had access to a nutrition support team compared to those in the 2007 and 2008 surveys. In contrast to the findings in 2007, there was a significant difference in the prevalence of 'malnutrition' on admission to smaller hospitals with less than 1000 beds compared to larger hospitals with 1000 or more beds. In 2008 there was no significant difference in the prevalence of 'malnutrition' on admission according to bed numbers.

As in the previous 2 surveys, there were more women than men in the 2010 survey. The women in the current survey were older than in the previous two surveys (mean age 66.3 years v 65.0 years and 65.0 years respectively) and were more at risk of 'malnutrition' (36% v 29% and 30% respectively).

In this survey, as in the 2007 and 2008 surveys, older people accounted for a disproportionately large fraction of the adult patients admitted to hospital (over half of those admitted were 65 years and over) compared to their

contribution (16-17%) in the general population. All 3 surveys also showed the proportion of older adults (≥ 65 years) with 'malnutrition' was greater than the proportion in younger adults (ratio of 1.37:1.0 in this survey, 1.4:1.0 in the 2008 survey and 1.25:1.0 in the 2007 survey).

The admission prevalence of 'malnutrition' is not the same as the ward prevalence of 'malnutrition'. The latter is expected to be greater than the admission prevalence, since 'malnourished' patients stay in hospital longer than non-'malnourished' patients. With an admission prevalence of 34% and a 30% longer length of hospital stay in 'malnourished' patients, the ward prevalence of 'malnutrition' can be estimated to be around 40% (assuming that there is no mortality and that no 'malnutrition' develops during hospital stay) (15).

In all 3 surveys over a third of patients were admitted to medical wards but the prevalence of 'malnutrition' in patients admitted to medical wards in 2010 was higher than in previous years (40% v 31%). A similar proportion of patients were admitted with respiratory conditions in all 3 surveys although the percentage at risk was higher in 2010 than in 2008 and 2007 (42% v 37% v 32% respectively). 13% of patients screened in this survey were reported to have cancer and had a significantly greater risk of 'malnutrition' than those patients without cancer (44% v 32%).

As in 2008, 9 out of 10 hospitals linked the results of screening to a care plan but this did not appear to always follow through into discharge planning and communication with less than half the hospitals always or usually including nutritional information on at risk patients in the discharge letters.

The new questions included in the 2010 survey revealed some interesting findings. Just over half of hospitals seemed to be aware of standards relating to weighing scales although none of them were able to accurately specify any standards regarding type or class of weighing scales to be used in clinical settings. All respondents that said they were aware of standards referred to the need for scales to be regularly calibrated. Hospitals reported using a range of screening tools and amongst these the majority (73%) used the 'Malnutrition Universal Screening Tool' ('MUST'). 17% used a local tool although it is not known if these tools had been validated. Over half of hospitals used a combination of lectures and workshops to train staff on nutritional screening. Whilst very few hospitals (2%) used e-learning materials to train staff on nutritional screening, this form of education and training is being increasingly used in the NHS and the BAPEN e-learning module on nutritional screening using 'MUST' (16) could be a useful training resource.

'Malnutrition' on admission to hospital and during hospital stay is not a trivial problem that can be ignored, but a major problem that needs multidisciplinary attention. Appreciation of the magnitude of the problem and in-hospital mortality associated with 'malnutrition' helps to inform policy at a local and national level (17). Since in the Nutrition Screening Week surveys, nutritional risk has been assessed on admission to hospital, its presence indicates that it had largely developed in the community. Based on data from the 2008 survey, it has been estimated that more than 80% of patients at risk of 'malnutrition' on admission to hospital could have been identified and treated in the community before hospitalization (18). It is therefore essential that strategies to prevent and treat 'malnutrition' before admission to institutions should be considered in more detail.

The proportion of underweight patients admitted to hospitals (BMI < 20 kg/m² (13%) (7% below BMI 18.5 kg/m²)) is several-fold greater than the proportion in the community. The high prevalence of obesity on admission to hospital (24%) reflects the growing obesity problem in the community as a whole. Implementation of behavioural and life-style strategies requires a community focus, although hospitals should be included in such strategies. Similar joined up thinking is required for 'malnutrition'.

Care Home Survey – UK

GENERAL FEATURES

Total number of residents (not all questions completed on all subjects)

1010 individual residents
857 with 'MUST' scores (all >18 years)

Care Homes

Number of Care Homes

148

Nutrition service, policies on nutritional screening, audit, weight, and measurement of height

	Nutrition Dietetic service service (%)	Nutrition screening policy (%)	Nutrition screening audited (%)
Yes	93	92	65
No	3	3	20
Don't know or no answer	4	5	16
Total	100	100	101*
Number of care homes	148	148	148

*Results do not add up to 100% due to rounding up of the component values to the nearest 1%.

Frequency of nutrition screening audit:

Every year*	78%
Every 2 years	7%
Every 3 or more years	1%
No answer or don't know	13%

(Total base: N = 96 care homes)

*Includes some care homes that audited screening more frequently

Results do not add up to 100% due to rounding up of the component values to the nearest 1%.

	Policy for weighing on admission (%)	Policy for recording height (%)	Regular weighing during stay (%)
Yes	95	82	99
No	3	16	1
Don't know or no answer	3	2	1
Total	101*	100	101*
Number of care homes	148	148	148

*Results do not add up to 100% due to rounding up of the component values to the nearest 1%.

Awareness of standards re weighing scales:

Yes	51%
No	27%
Don't know or no answer	22%

Total base: N= 148

Amongst those that answered yes (N=75) the following responses were obtained:

'Calibration'	40%
National standards	13%
Maintenance contract for weighing scales	12%
Care home standards	5%
County council standards for weighing scales	1%
No answer	28%

(Total base: N= 75 care homes)

Results do not add up to 100% due to rounding up of the component values to the nearest 1%.

Linking screening results to a care plan

Yes	91%
No	1%
No answer/Don't know	7%

(Total base: N = 148 care homes)

Percent of residents screened: 1% of care homes screened 0-25% of residents, 1% 25-50% of residents, 3% screened 51-75% of residents, 80% screened 76-100% residents, 12% did not respond to this question (Total base N = 148 care homes).

Type of screening tool used

'MUST' [†]	76%
'MUST' and local tool	2%
NRS ^{††}	1%
Local tool	12%
No tool	1%
No answer	7%

(Total base: N= 148 care homes)

[†]'MUST' = Malnutrition Universal Screening Tool'; ^{††}NRS = Nutrition Risk Score

Among centres that responded and used a tool, 'MUST' was used in 85%

How are staff trained on nutritional screening?

Workbook	6%
Lecture/workshop	44%
Lecture/workshop + Workbook	7%
Lecture/workshop + E-learning	1%
Lecture/workshop + Other	4%
Other	22%
No training	10%
No answer	6%

(Total base: N=148 care homes)

Breakdown of 'Other' training

Dietitian	12%
In house training	67%
Mini modules	6%
No answer	15%

(Total base: N=33 care homes)

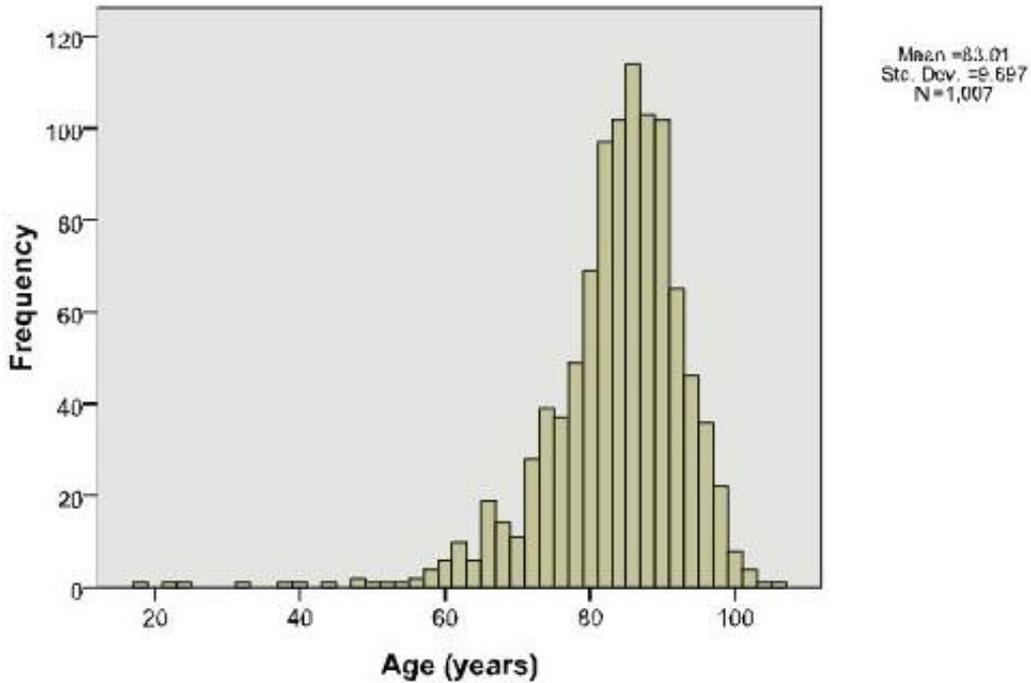
General subject characteristics UK

Gender: There were 691 women and 316 men (total N = 1007). Ratio of women to men, 2.2:1.0

Age: The mean age was 83.1 (sd 9.7) years (median 84.0 years; inter-quartile range 79-89 years) (N = 1007).

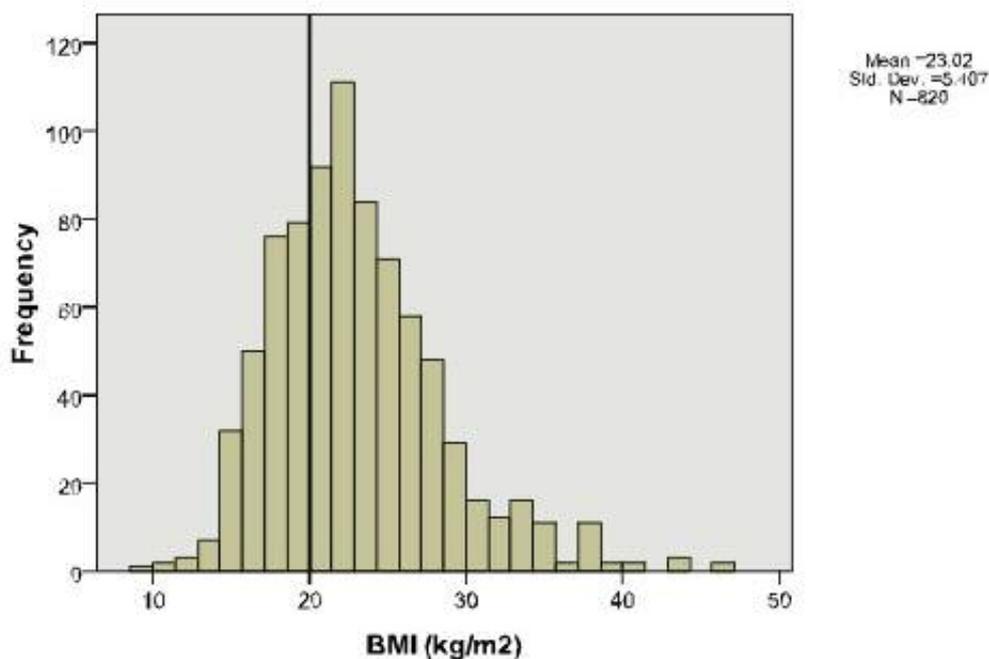
Women (N = 691) were older than men (N = 316) (mean 83.8 (sd 9.5) v 81.4 (sd 10.0) years; median 85 v 83 years; $P < 0.001$).

96% of the residents were 65 years and over. In the figure of age distribution below, frequency refers to the number of residents in each age group, which is represented by the individual bars of the histogram.



Body mass index (BMI): The mean BMI was 23.0 (sd 5.4) kg/m².

31% of residents had a BMI less than 20 kg/m² (20% less than 18.5 kg/m²), 39% a BMI between 20 and 24.9 kg/m² and 30% had a BMI ≥ 25 kg/m² (9% >BMI 30kg/m²) (Total N = 820). In the figure of BMI distribution opposite, frequency refers to the number of residents in each BMI group, which is represented by the individual bars of the histogram. The reference line corresponds to a BMI of 20 kg/m².



Diagnostic categories: Of those reporting the diagnostic category of residents the distribution was as follows: CNS (stroke, dementia, Parkinson's disease, Alzheimer's disease multiple sclerosis) 59%; Frail elderly (various reasons) 15%; Musculoskeletal (including orthopaedic) 8%; Cardiovascular disease 6%; Respiratory disease 3%; Genito/Renal disease 2%; Gastrointestinal disease 2%; Mental health disorders 5%; Sensory impairment 0% (N = 891).

CNS disease in purely residential, nursing and only EMI (Elderly Mentally Ill) homes occurred in 59%, 50% and 91% of the residents respectively.

PREVALENCE OF 'MALNUTRITION'

'MALNUTRITION' ACCORDING TO RISK CATEGORY

Medium risk	15%
High risk	23%
Medium + high risk	37%
(Total base: N = 821)	

Results are rounded to the nearest 1%

'MALNUTRITION' ACCORDING TO COUNTRY

England	37%
Wales	0% (N = 5 only)
Northern Ireland	31%
Scotland	45%
Overall	37% (Total base: N = 821)

P = 0.059

The residents were in England (77%), Wales (0.6%), Northern Ireland (8%), and Scotland (14%).

'MALNUTRITION' ACCORDING TO TYPE OF CARE HOME AND CARE HOME CHARACTERISTICS

'Malnutrition' according to type of care home

Nursing homes only	45%
Elderly mentally ill homes only	26%
Residential homes only	30%
Other homes	36%
Overall	37% (Total base: N =815)

P = 0.002

36% of residents were in homes that were exclusively nursing homes, 2% exclusively EMI units and 29% in homes that were exclusively residential homes. Most of the remainder were in homes that were a combination of two or more different types of care homes (Nursing homes, Residential homes, Elderly Mentally Ill homes, homes for the Disabled and Rehabilitation units). In 65% of all care homes participating in the survey there were places for individuals requiring nursing care, in 46% there were places for those requiring residential accommodation and in 27% there were places for EMI patients.

'Malnutrition' according to number of care home beds

1-24 beds	39%
25-49 beds	32%
50-74 beds	47%
75-99 beds	31%
100+ beds	41%
Overall	37% (Total base N = 808)

P (trend) =0.329

'Malnutrition' according to source of admission

Admitted from:	'Malnutrition' risk
Home	30%
Hospital	43%
Other care home	42%
Don't know / no answer	40%
Overall	37% (Total base: N = 821)

P = 0.010

41% of all residents were admitted from their own homes, 44% from a hospital and 14% from another care home. Source of admission was not known in 1%

'Malnutrition' according to duration in care home

Duration in care home:	'Malnutrition' risk
0-1 month	36%
2-3 months	37%
4-6 months	38%
Overall	37% (Total base: N = 821)

P = 0.861

24% of residents were admitted in the previous 0-2 months, 32% in the previous 2-4 months, and 44% in the previous 5-6 months

'Malnutrition' according to screening policy**Nutrition screening policy: 'Malnutrition' risk**

Yes	37%
No	42%
No answer + don't know	35%
Overall	37% (Total base: N = 821)
P = 0.831	

93% were resident in care homes with a screening policy; 4% in care homes that did not have a policy and the remaining 3% came from care homes where the respondents did not know whether there was a screening policy in place or provided no answer to the question.

'Malnutrition' according to percent of residents screened**Percent residents screened: 'Malnutrition' risk**

51-75%	39%
76-100%	36%
No answer	63%
Overall	37% (Total base: N = 821)
P < 0.001	

90% of residents came from homes that screened 76-100% of residents and 4% from homes that screened 51-75% of residents. The remaining 6% came from homes that did not answer this question.

'MALNUTRITION' ACCORDING TO SUBJECT CHARACTERISTICS**'Malnutrition' according to gender**

Women	41%
Men	30%
Overall	37% (Total base: N = 821)
P = 0.002	

68% of the residents were women and 32% men.

'Malnutrition' according to age

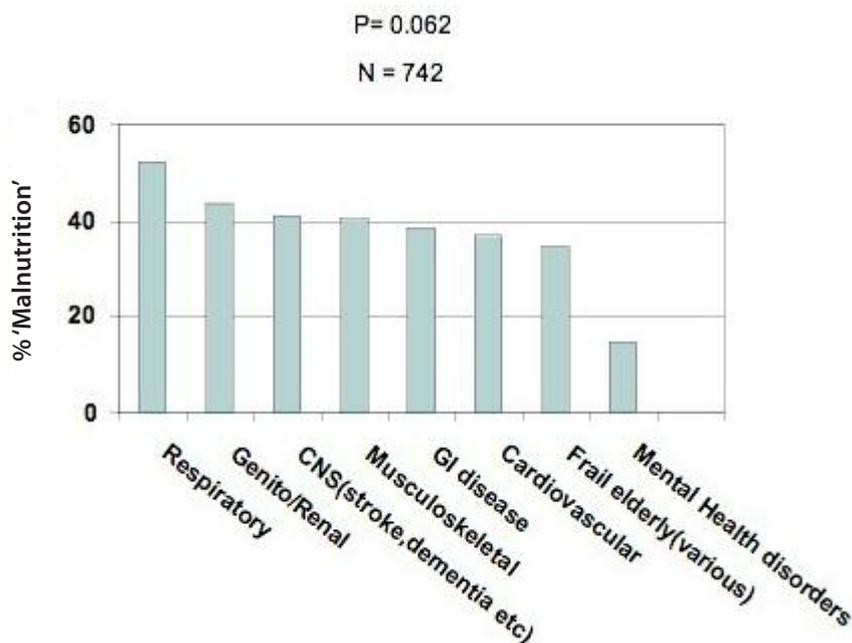
<70 years	22%
70-84 years	36%
≥85 years	41%
Overall	37% (Total base: N = 821)
P (linear trend) = 0.006	

8% of residents were less than 70 years, 43% 70-84 years, and 49% 85 years and over.

Contribution of a low BMI to 'MUST' score

Underweight (BMI <20kg/m²) contributed to 82% of residents categorised as 'malnourished' (medium + high risk).

'Malnutrition' according to primary problem



3% had Respiratory conditions, 2% Genito/Renal conditions, 59% had Neurological (CNS) conditions (including stroke, dementia, Parkinson's disease, Alzheimer's disease), 8% had Musculoskeletal conditions (including orthopaedic), 2% had GI (gastrointestinal) conditions, 6% had Cardiovascular disease, 14% had Frailty (Frail elderly), and 5% had mental health disorders (N = 742).

'Malnutrition' according to presence of other conditions

Presence of other conditions	'Malnutrition' risk
No	33%
Yes	39%
Don't know	25%
Overall	37% (Total base: N = 821)

P = 0.241

30% of all residents had no other conditions and 69% of all residents had multiple medical conditions. There was uncertainty (don't know) in < 1%.

'Malnutrition' according to presence of cancer

With cancer	42%
Without cancer	37%
No answer or don't know	40%
Overall	37% (Total base: N = 821)

P = 0.797

7% of residents had cancer, 93% did not, and for less than 1% there was either no response or the answer was don't know.

Comments

The results of this survey have many similarities to the 2008 and 2007 surveys including: the higher prevalence of 'malnutrition' in nursing homes compared to residential homes; the tendency for 'malnutrition' to increase with age and to occur more frequently in women than men (who were younger than women) and for the majority of individuals at risk of 'malnutrition' (medium + high risk) to be in the high risk category. Twice as many women than men were included in the survey. The most notable difference between the surveys is the variability in overall prevalence of 'malnutrition'. In this 2010 survey it was found to be lower than in the 2008 survey but higher than the 2007 survey (37% v 42% v 30%). The reasons for this are not entirely clear. One possibility would be random variation in results whilst another would be differences in sample size between the 3 surveys (857 subjects from 148 care homes in the 2010 survey, 614 subjects from 75 care homes in the 2008 survey and 1610 subjects from 173 care homes in the 2007 survey). Another possibility would be recruitment bias, potentially related to the case mix of care homes that participated in the 3 surveys. In this 2010 survey, there were more

exclusively nursing homes with the highest prevalence of 'malnutrition' amongst their residents than in the 2008 and 2007 surveys (36% v 30% v 26%) although there were more homes providing EMI facilities in the 2008 survey than in the 2010 and 2007 surveys (41% v 27% v 27%) and more care homes providing nursing facilities (77% v 65% v 59%). In contrast, there were fewer exclusively residential homes in the 2008 survey than in the 2010 and 2007 surveys (18% v 29% v 28%).

A limitation to all the studies is the lack of information on the type of care received by individuals resident in care homes that provide a combination of nursing and residential care or a combination of other types of specialised care including EMI facilities. Nevertheless, it is unlikely that the case mix of nursing and residential homes is the dominant explanation for the differences in prevalence of 'malnutrition' in the three surveys, since the prevalence of 'malnutrition' in nursing homes alone and the prevalence in residential homes alone in the present survey whilst higher than in the 2007 survey was similar to that in the 2008 survey.

In attempting to come to a more informed overall conclusion about the prevalence of 'malnutrition' in residents of care homes in the UK it is necessary to take into account the case mix of residents. For example, in England in 2007 there were one and half times as many places in residential homes as in care homes (19). Information from other studies also needs to be considered. Two studies have examined the prevalence of 'malnutrition' using 'MUST' in all residents of care homes. One of these undertaken in Hampshire (20), found a prevalence of 40% 'malnutrition' which was similar to that found in this and the 2008 survey, with no significant effect of time since admission to the care home. The other study (21) carried out in the Peterborough region reported a prevalence of 32% malnutrition which was more in keeping with the 2007 survey. Based on the currently available information, the overall prevalence of 'malnutrition' on admission to care homes (within the past 6 months) is likely to be between 30% and 40%.

As in the previous 2 surveys, almost all care homes reported that their policy was to weigh residents on admission, that they regularly weighed residents throughout their stay and that they had access to Nutrition and Dietetic services. However there was a marked increase in the proportion of care homes recording height of residents on admission.

The new questions included in the 2010 survey revealed that just over half of care homes seemed to be aware of standards relating to weighing scales but none of them were able to accurately specify any standards regarding type or class of weighing scales to be used in community settings. All respondents that said they were aware of standards referred to the need for scales to be regularly calibrated. Care homes reported using a range of screening tools although the majority (85%) of centres that used a screening tool used the 'Malnutrition Universal Screening Tool' ('MUST'). Most care homes used a combination of lectures and workshops to train staff on nutritional screening although 1 in 10 care homes reported that no training was provided. Whilst e-learning was seldom used as a means of training in care homes this may change in the future. The BAPEN module on nutritional screening using 'MUST' (16) recently modified for use in the community would be a suitable training resource.

Around a third of the residents in care homes were thin with a BMI of less than 20 kg/m² with 20% having a BMI of less than 18.5 kg/m². The overall mean BMI in care homes was 23.0 kg/m², significantly lower than that in hospitals (mean BMI 26.3 kg/m²). A low BMI was present in 82% of residents categorised as 'malnourished' (medium + high risk). Underweight was 3 to 4-fold more common than obesity, which contrasts with the situation in hospitals where obesity was found to be 2-fold more common than underweight.

Age was significantly greater in care home residents than in patients admitted to hospital (median age 83 v 69.5 years), and this could contribute to the higher prevalence of 'malnutrition' in care homes. The distribution of disease categories also differed with more of those in care homes (59%) suffering primarily from neurological conditions compared to only 6% in hospitals. Residents with neurological conditions and those classified as frail elderly had an associated 'malnutrition' prevalence of 41% and 35% respectively. The highest prevalence (52%) was found in residents with respiratory disease although these accounted for only 3% of residents in the survey. 7% residents were reported to have cancer and 'malnutrition' was higher in those residents with cancer than those without (42% v 37%).

A limitation of the current survey is that it only considered residents admitted to care homes in the previous 6 months, and most individuals are generally resident in care homes for more than 6 months. Changes in nutritional status over time are known to occur. However, this cross sectional survey suggests that there was no significant tendency for 'malnutrition' to increase with duration of stay amongst those who remained in the care home for up to 6 months from the time of admission. This overall result may hide substantial changes within individuals or groups of individuals.

Mental Health Unit Survey – UK

GENERAL FEATURES

Total number of subjects (not all questions completed on all subjects)

- 160 individual patients reported
- 146 with 'MUST' ('Malnutrition Universal Screening Tool') scores
- 146 with 'MUST' scores in patients 18 years and over

Mental Health Units

Number of Mental Health Units

20 Mental Health Units (16 Acute, 4 Long-term Rehabilitation units, 0 combined units), of which 8 were in England, 1 in Scotland and 11 in Wales.

Nutrition service, policies on nutritional screening, audit, weight, and measurement of height

	Nutrition steering committee (%)	Nutrition screening policy (%)	Nutrition screening audited (%)	Access to dietetic service (%)	Access to nutrition support team (%)
Yes	60	65	20	100	25
No	15	15	70	0	70
Don't know	25	20	10	0	5
Total	100	100	100	100	100
Number of Mental Health Units	20	20	20	20	20

Frequency of nutrition screening audit:

Every year 100%
(Total base: N = 4 Mental Health Units)

	Policy for weighing on admission (%)	Policy for recording height (%)	Regular weighing during stay (%)
Yes	100	65	90
No	0	20	5
Don't know or no answer	0	15	5
Total	100	100	100
Number of Mental Health Units	20	20	20

Awareness of standards re weighing scales:

Yes 35%
No 50%
Don't know/no answer 15%
(Total base: N=20 Mental Health Units)

Amongst those that answered yes (N=7) the following responses were obtained:

In house calibration	= 3
Maintenance contract for weighing scales	= 1
Regular checks required	= 1
No answer/Don't know	=2

(Total base: N= 7 Mental Health Units)

How often are patients weighed during their stay?

As required	30%
Weekly	45%
Weekly/as required	10%
Monthly	5%
No answer	10%

(Total base: N= 20 Mental Health Units)

Linking screening results to a care plan

Yes	95%
No	0%
No answer	5%

(Total base: N = 20 Mental Health Units)

Nutrition information included in discharge communication

Always	25%
Usually	45%
Sometimes	20%
No answer / don't know	10%

(Total base: N = 20 Mental Health Units)

Percent of patients screened: 1 unit screened 0-25% of patients, 1 unit screened 26-50% of patients, 13 screened 76-100% of patients and 5 units did not respond.

Type of screening tool used

'MUST' [†]	45%
NRS ^{††}	5%
Local tool	35%
No tool	10%
No answer	5%

(Total base: N = 20 Mental Health Units)

[†]'MUST' = Malnutrition Universal Screening Tool'; ^{††}NRS = Nutrition Risk Score

Among centres that responded and used a tool, 'MUST' was used in 53%

How are staff trained on nutritional screening?

Workbook	0%
Lecture/workshop	45%
Lecture/workshop + Other	5%
Other	25%
No training	25%

(Total base: N=20 Mental Health Units)

Breakdown of 'Other' training

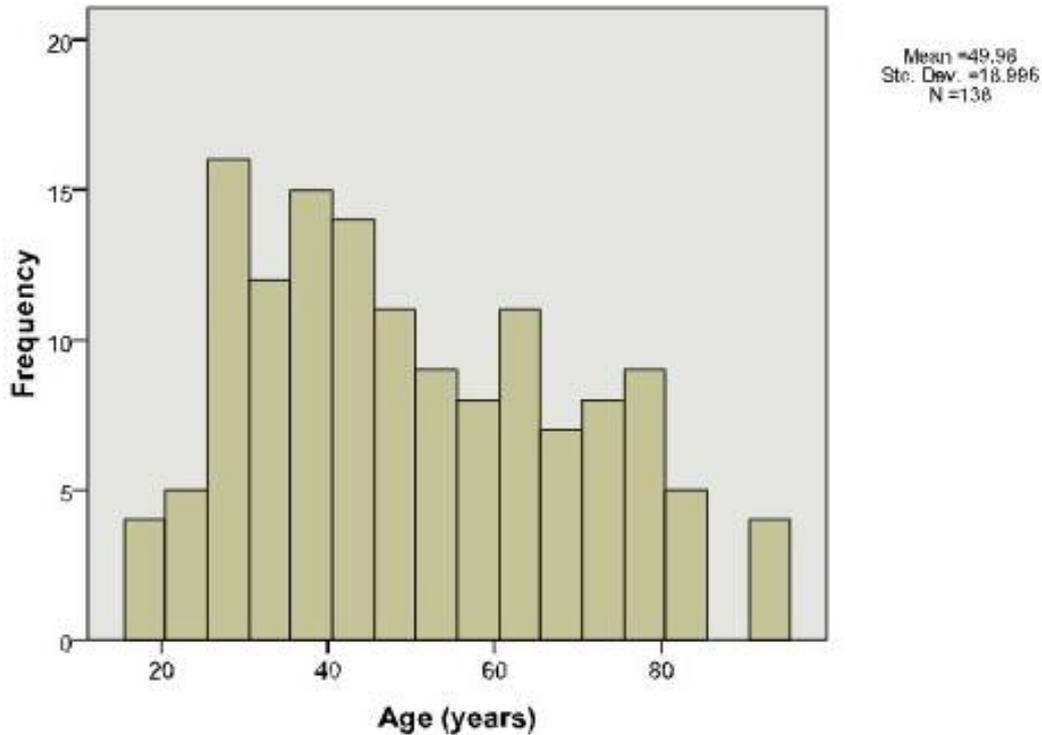
Dietitian	40%
In house training	40%
No answer	20%

(Total base: N=5)

General subject characteristics

Gender: There were 37 women and 123 men (Total N = 160) Ratio of women to men: 0.3: 1.0

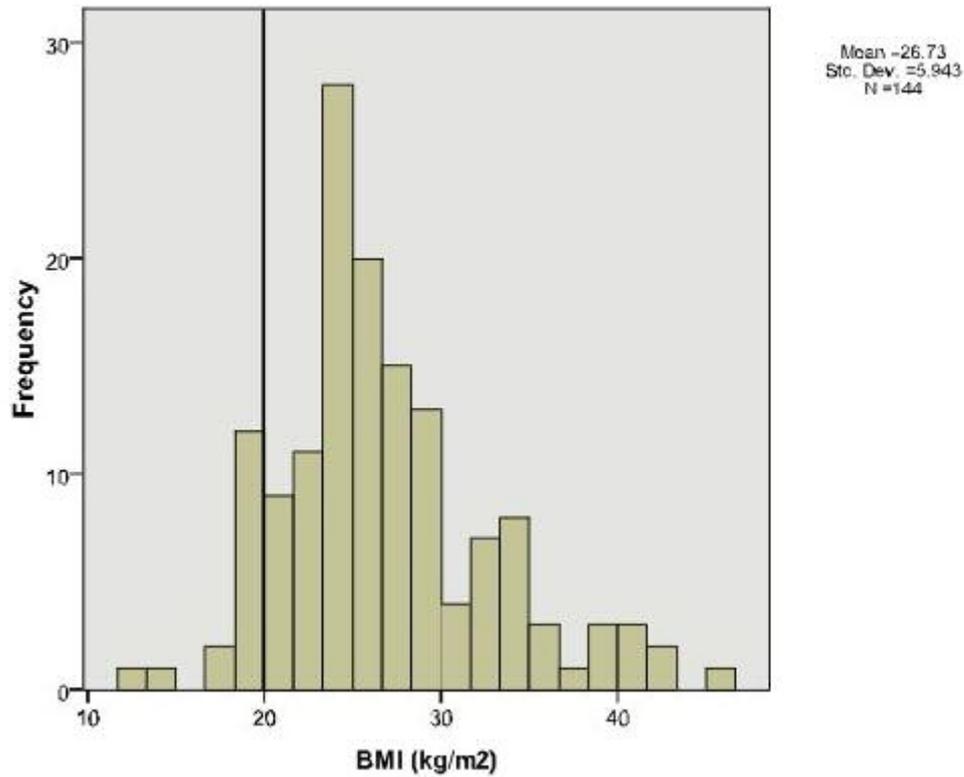
Age: The mean age was 50.0 (sd 19.0) years (median 46.5 years; inter quartile range 34 to 64 years) (N= 138). In the figure of age distribution below, frequency refers to the number of subjects in each age group, which is represented by the individual bars of the histogram.



Women were older than men (mean 52.7 (sd 21.1) years v 49.0 (sd 18.2) years; $P=0.331$; median 50 v 46.0 years). The age differed very little according to the type of Mental Health Unit (mean (sd)): Acute Care Units, 50.7 (20.0) years (40% of all patients); and Long-term Rehabilitation Units, 49.5 (18.4) years (61% of all patients).

Body mass index (BMI): The mean BMI was 26.7 (sd 5.9) kg/m².

11% of patients had a BMI less than 20kg/m² (5% less than 18.5 kg/m²), 34% a BMI between 20 and 24.9 kg/m² and 55% had a BMI ≥ 25 kg/m² (22%, BMI >30kg/m²) (Total base: N = 144). In the figure of BMI distribution opposite, frequency refers to the number of patients in each BMI group, which is represented by the individual bars of the histogram. The reference line corresponds to a BMI of 20 kg/m².



PREVALENCE OF 'MALNUTRITION'

'MALNUTRITION' ACCORDING TO RISK CATEGORY

Medium risk	7%
High risk	12%
Medium + high risk	18%

(Total base: N = 146)

Results do not add up due to rounding up of the component values to the nearest 1%.

'MALNUTRITION' ACCORDING TO COUNTRY

England	19%
Scotland	12%
Wales	27% (but only 11 patients from Wales)
Overall	18% (Total base: N = 146)

P = 0.161

The patients were in England (54%), Scotland (38%) and Wales (8%).

'MALNUTRITION' ACCORDING TO TYPE OF MENTAL HEALTH UNIT AND OPERATIONAL CHARACTERISTICS

'Malnutrition' according to type of Mental Health Unit

Type of Mental Health Unit	'Malnutrition' risk	
Acute care	29%	
Long-term care	13%	
Overall	18%	(Total base: N = 146)
P = 0.026		

32% of all the 'MUST' results were obtained from patients receiving acute care and 68% long-term care.

'Malnutrition' according to number of beds in Mental Health Units

<100beds	36%	
≥100beds	10%	
No answer	13%	
Overall	18%	(Total base: N = 146)
P = 0.003		

Considering only Mental Health Units that assigned bed numbers, 42% of patients were registered by Units with <100 beds and 58% by units with 100 or more beds.

'Malnutrition' according to source of admission

Admitted from:	'Malnutrition' risk	
Home	21%	
Other hospital	15%	
Other ward	71%	
Care home	100%	(N=1)
Other unit	11%	
Overall	18%	(Total base: N = 145)
P <0.001		

32% of patients were admitted from home, 23% from hospital, 5% from other wards, <1% from care homes, 39% from other units and <1% where source of admission was not stated

'Malnutrition' according to Nutrition Screening Policy

Nutrition screening policy:	'Malnutrition' risk	
Yes	24%	
No	5%	
Don't know or no response	29%	
Overall	18%	(Total base: N = 146)
P = 0.024		

29% of all patients were in units that had no nutrition policy, 66% in units with a policy, and 5% in units where the respondents did not answer or did not know if there was a nutrition policy in place

'Malnutrition' according to access to Nutrition and Dietetic Service

Access to dietetic service	'Malnutrition' risk	
Yes	18%	
Overall	18%	(Total base: N =146)

100% of patients came from hospitals that had access to dietetic service.

'Malnutrition' according to access to Nutrition Support Team

Access to Nutrition Support Team:	'Malnutrition' risk	
Yes	16%	
No	17%	
No response	100%	
Overall	18%	(Total base: N = 146)
P = 0.001		

39% of all patients were in units that had access to a Nutrition Support Team, 59% were in units that did not, and the remaining 2% were in units in which no answer was provided to the question about access to Nutrition Support Team.

'MALNUTRITION' ACCORDING TO SUBJECT CHARACTERISTICS**'Malnutrition' according to gender**

Women	24%	
Men	17%	
Overall	18%	(Total base: N = 146)
P = 0.334		

23% of all patients were women and 77% men.

'Malnutrition' according to age category

< 65 years	18%	
≥65 years	28%	
Overall	20%	(Total base: N = 127)
P = 0.215		

75% of all the patients were aged less than 65 years and 25% 65 years and over.

Contribution of a low BMI to 'MUST' score

Underweight (BMI <20kg/m²) contributed to 62% of patients categorised as 'malnourished' (medium + high risk).

'Malnutrition' according to presence of other conditions

Other conditions:	'Malnutrition' risk	
No	16%	
Yes	24%	
No answer	50%	
Overall	18%	(Total base: N = 146)
P = 0.268		

73% of all patients had no other conditions and 25% had another condition and 1% (N=2) provided no answer. (The cumulative frequency is less than 100% due to rounding of the component values)

'Malnutrition' according to presence of cancer

No patients were reported to have cancer.

Comments

Although the information on 'malnutrition' in Mental Health Units obtained in this survey is useful, as in the 2008 and 2007 surveys, it is limited by sample size (143 subjects in 20 Mental Health Units, 185 in 17 units in 2008 and 336 in 22 units in 2007). Very little patient data were obtained from Wales and none were reported from Northern Ireland, therefore the data presented largely reflect results from England and Scotland.

The prevalence of 'malnutrition' was found to be 19%, which is similar to that reported in 2008 and 2007 and substantially lower than that found in hospitals (28-34%) and care homes (30-42%) in all 3 surveys. Most of the 'malnutrition' was high risk, a pattern also observed in hospitals and care homes. There were twice as many patients admitted to long-term Mental Health Units than acute care units but there was a significantly higher prevalence of 'malnutrition' in patients admitted to acute care units than in long term care (30% v 13%).

'Malnutrition' was significantly greater in older (≥ 65 years) than younger patients (< 65 years) (28% v 18% malnutrition) and greater in women than in men (24% v 17% 'malnutrition'), who were younger than women.

A low BMI (< 20 kg/m²) contributed to the categorisation of 62% patients, who were classified as 'malnourished' (medium + high risk). This contribution is intermediate between that found in hospitals and care homes.

As in 2008, the majority of Units linked the results of screening to a care plan but in contrast to 2008 the majority of Units in this survey always or usually included nutritional information on at risk patients in the discharge letters.

The new questions included in the 2010 survey revealed some areas of concern. Half of the Units seemed to be aware of standards relating to weighing scales although as in hospitals and care homes none of them were able to accurately specify any standards regarding type or class of weighing scales to be used in clinical settings. This suggests a need for training and education to ensure confidence in the accuracy and reliability of the scales used to determine nutritional status and in turn nutritional care. All respondents that said they were aware of standards referred to the need for scales to be regularly calibrated. The Mental Health Units reported using a range of screening tools although the majority (53%) of centres that used a screening tool used the 'Malnutrition Universal Screening Tool' ('MUST'). However, a local tool was used in a higher proportion (35%) of Mental Health Units than in hospitals (17%) and in care homes (12%). It is not known if these local tools had been validated. No tool was used or known to be used in a higher proportion of centres than in hospitals or care homes suggesting that some patients at risk of 'malnutrition' were possibly being missed. Half of the Units used a combination of lectures and workshops to train staff on nutritional screening although 5 Units reported no training being provided. The practice of routine nutritional screening, on admission to Mental Health Units using a validated screening tool should be encouraged. Education and training should be provided to ensure that staff are competent to undertake screening. The BAPEN e-learning module would be a suitable training resource (16).

Republic of Ireland Survey

Hospital Survey – Republic of Ireland

GENERAL FEATURES

Total number of subjects (not all questions completed on all subjects)

- 1670 individual patients
- 1607 with 'MUST' ('Malnutrition Universal Screening Tool') scores
- 1602 with 'MUST' scores in patients 18 years and over

Hospitals

Number of hospitals

29

Policies, audit, and access to dietetic service and nutrition support team

	Nutrition steering committee (%)	Nutrition screening policy (%)	Nutrition screening audited (%)	Access to dietetic service (%)	Access to nutrition support team (%)
Yes	45	24	38	100	7
No	48	72	52	0	72
Don't know/no answer	7	3	10	0	21
Total	100	100	100	100	100
Number of hospitals	29	29	29	29	29

Frequency of nutrition screening audit:

Every year (or less than 1y)	82%
Every 2 years	0%
Every 3 or more years	9%
Don't know	9%

(Total Base: N = 11 hospitals)

Nutritional screening and communication of nutrition information

Proportion of patients screened on admission known

Yes	34%
No	48%
Don't know	14%
No answer	3%

Total base (N = 29 hospitals)

Results do not add up to 100% due to rounding up of the component values to the nearest 1%.

Percent of patients screened: Of the hospitals that responded (N = 13; 45% of total) 54% of hospitals screened 0-25% of their patients, 8% screened 26-50%, 15% screened 51-75% and 23% of hospitals screened 76-100% patients.

Recording of weight and height on admission

	Recording of weight (%)	Recording of height (%)
Yes, on all wards	14	7
Yes, on some wards	86	31
No	0	59
Don't know	0	0
No answer	0	3
Total	100	100
Number of hospitals	29	29

Awareness of standards re weighing scales

Yes	62%
No	21%
Don't know	17%

(Total base: N=29 hospitals)

Amongst those that answered yes (N=18) the following responses were obtained:

National standards	6%
EU standards	6%
Maintenance contract standards	17%
Local standards	56%
No answer	17%

(Total base: N= 18 hospitals)

Results do not add up to 100% due to rounding up of the component values to the nearest 1%.

Linking screening results to a care plan

Yes	52%
No	35%
Don't know	14%

(Total base: N = 29 hospitals)

Nutrition information included in discharge communication

Always	17%
Usually	14%
Sometimes	59%
Never	3%
Don't know	3%
No answer	3%

(Total base: N = 29 hospitals)

Type of screening tool used

'MUST' [†]	28%
'MUST' + MNA ^{††}	3%
'MUST' + local tool	3%
MNA	3%
Local tool	3%
Other tool	3%
No tool	45%
No answer	10%

(Total base N=29 hospitals)

[†]'MUST' = 'Malnutrition Universal Screening Tool'; ^{††}MNA = Mini Nutritional Assessment

Among centres that responded and used a tool (N=13), 'MUST' was used in 81% of centres

How are staff trained on nutritional screening?

Lecture/workshop	35%
Lecture/workshop + Workbook	7%
Lecture/workshop + Other	3%
No training	45%
No answer	10%

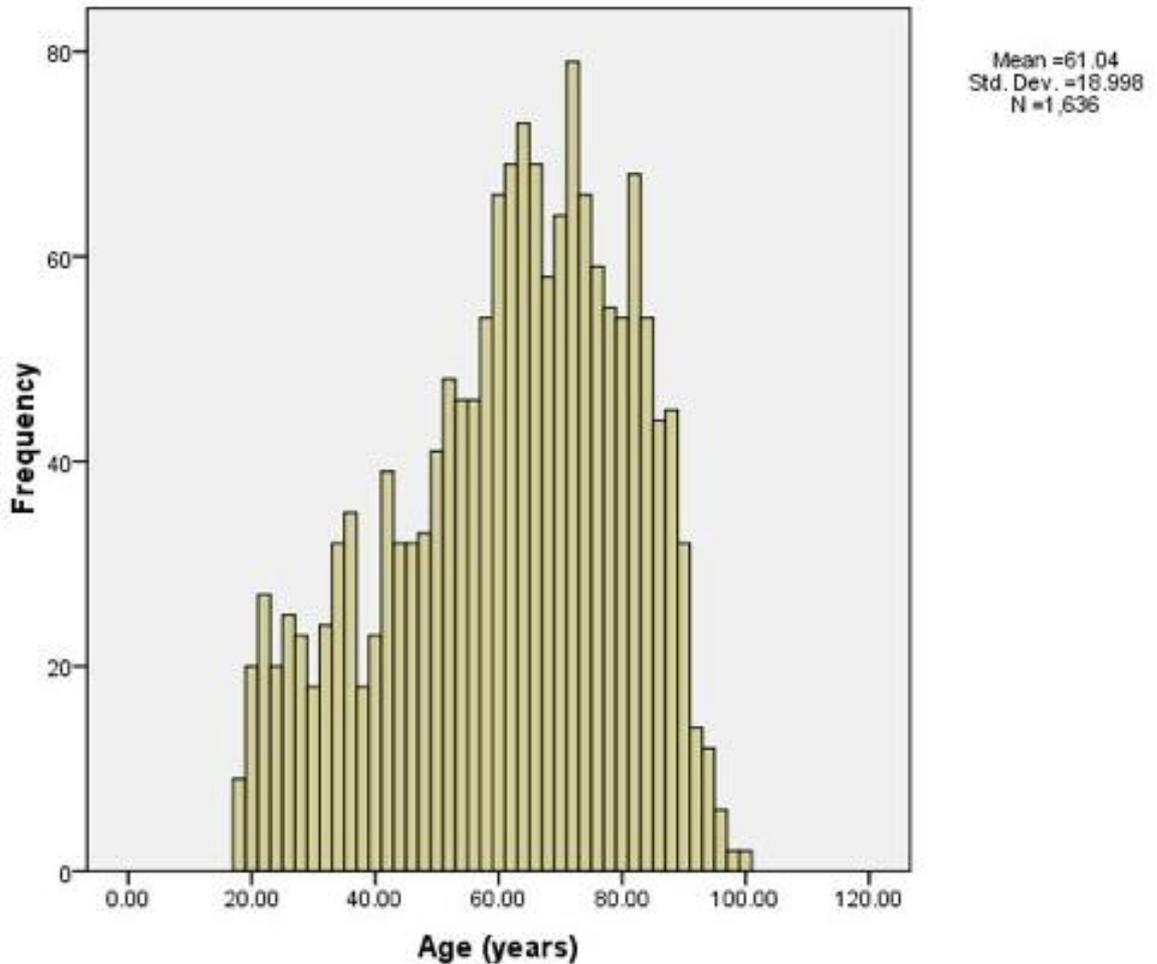
(Total base: N=29 hospitals)

General subject characteristics

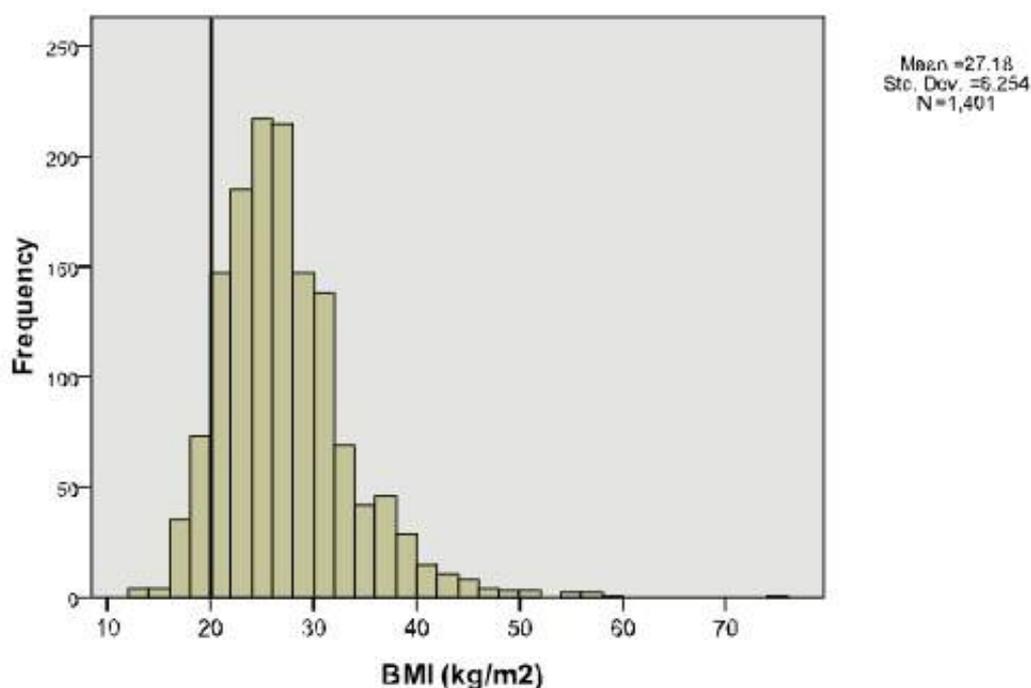
Gender: There were 794 women and 841 men (no gender reported on 1 subject; total N = 1527) and a ratio of women to men of 0.94:1.00.

Age: The mean age was 61.0 (sd 19.0) years (median 64.0 years; inter-quartile range 48 - 76 years) (N = 1636). For men the median age was 63.0 years (mean age 60.5 (sd 18.2) years and for women 64.0 years (mean age 61.6 (sd 19.8) years).

48% of the patients were aged 65 years and over . The age distribution (range 18-99 years) is skewed to the left. In the figure of age distribution below, frequency refers to the number of patients in each age group, which is represented by the individual bars of the histogram.



Body mass index (BMI): The mean BMI was 27.2 (sd 6.3) kg/m² (median, 26.3 kg/m²). 8% of patients had a BMI less than 20 kg/m² (4% less than 18.5 kg/m²), 32% a BMI between 20 and 24.9 kg/m² and 60% had a BMI \geq 25 kg/m² (27% >BMI 30kg/m²) (Total N = 1401). In the figure of BMI distribution opposite, frequency refers to the number of patients in each BMI group, which is represented by the individual bars of the histogram. The reference line corresponds to a BMI of 20 kg/m².



Diagnostic categories: The diagnostic categories of adult patients in the survey were as follows: Cardiovascular disease 16%; Gastrointestinal (GI) disease 15%; Respiratory disease 14%; Musculoskeletal (including orthopaedic) 16%; Genito/Renal disease 9%; Neurological (CNS) disease 7%; other 19% and not known 3% (Total N = 1628).

12% (Total N= 1670) of patients were reported to have cancer which was found in all diagnostic categories. Of those with cancer 40% were in patients where the diagnostic category was described as other; 19% in those with GI disease; 9% with Respiratory disease; 18% with Genito/Renal disease; 4% with neurological conditions; 4% with Musculoskeletal conditions and 5% Cardio-vascular disease and <1% were not known. 5% did not know or didn't respond.

PREVALENCE OF 'MALNUTRITION'

'MALNUTRITION' (MEDIUM + HIGH RISK) ACCORDING TO RISK CATEGORY

Medium risk	8%
High risk	25%
Medium + high risk	33%

(Total base: N = 1602)

'MALNUTRITION' ACCORDING TO TYPE OF HOSPITAL AND OPERATIONAL HOSPITAL CHARACTERISTICS

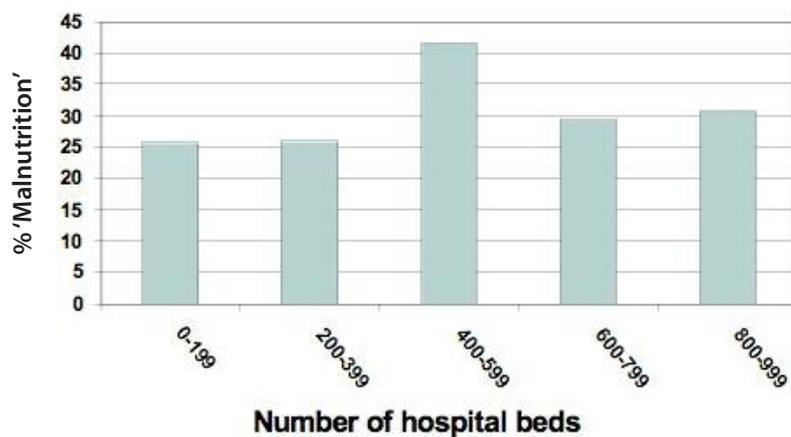
'Malnutrition' according to type of hospital

Acute hospital	32%
Community hospital	25%
Overall	32%

(Total base: N = 1602)

Patients in acute hospitals accounted for 99% of all the 'MUST' results, and those in community hospitals for 0.5% (the type of hospital for the remaining 0.5% of patients (N= 3) was not reported).

'Malnutrition' according to number of hospital beds



<1000 beds 33%
 Overall 33% (Total base: N = 1451)
 P (trend) = 0.003

Hospitals with less than 1000 beds accounted for 100% of patients who were screened.

'Malnutrition' according to type of admission

Emergency admission 39%
 Elective admission 20%
 Not known 23%
 Overall 32% (Total base: N = 1602)
 P < 0.001

67% were emergency admissions, 31% elective and 1% not known

'Malnutrition' according to source of admission

Admitted from:	'Malnutrition' risk
Home	30%
Other hospital	38%
Other ward	54%
Care home	54%
Overall	32% (Total base: N = 1602)

P < 0.001

86% came from their own homes, 7% from another hospital, 3% from another ward, and 4% from care homes.

'Malnutrition' according to nutrition screening policy

Nutrition screening policy:	'Malnutrition' risk
Yes	25%
No	37%
Don't know	21%
No answer	23%
Overall	32% (Total base: N = 1602)

P < 0.001

26% of patients were admitted to hospitals with a nutritional screening policy, 64% to hospitals without a screening policy, 3% to hospitals where the reporters did not know if there was a screening policy and 8% to hospitals that provided no answer.

'Malnutrition' according to audit of nutritional screening

Nutrition screening audited:	'Malnutrition' risk	
Yes	25%	
No	37%	
No answer	22%	
Overall	32%	(Total base: N = 1602)
P < 0.001		

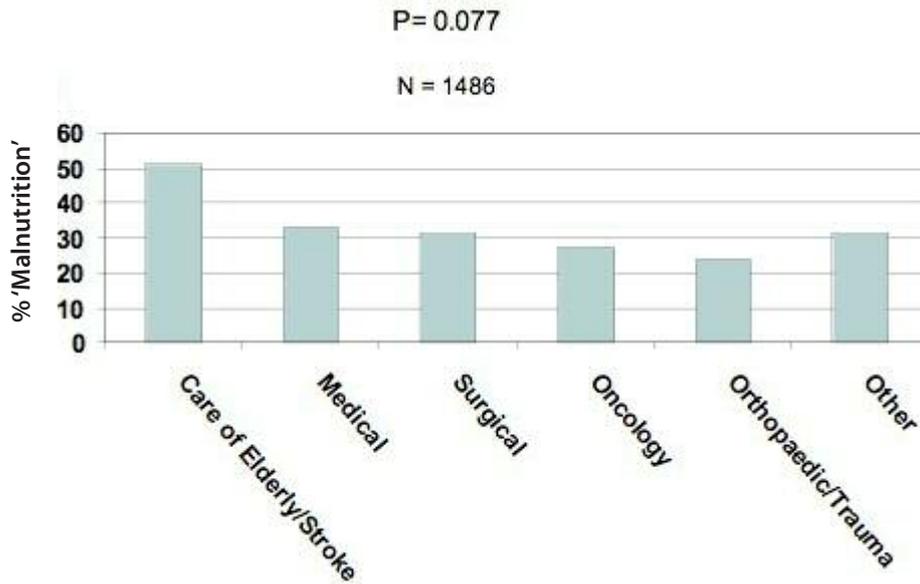
64% of patients were admitted to hospitals that did not audit nutritional screening, 26% into hospitals that did and 10% into hospitals in which the reporters did not know whether auditing took place

'Malnutrition' according to proportion screened

Percentage screened	'Malnutrition' risk	
0-25 %	31%	
26-50%	28%	
51-75%	23%	
76-100%	17%	
No response	36%	
Overall	32%	(Total base: N = 1602)
P =0.031		

49% of patients were admitted to hospitals in which 0-25% of patients were screened, 9% in which 26-50% were screened, 11% in which 51-75% were screened, 14% in which 76-100% were screened, and 17% to hospitals that provided no answer.

'MALNUTRITION' RISK ACCORDING TO TYPE OF WARD



3% of patients were in Care of the Elderly/Stroke, 44% in Medical wards, 30% in Surgical wards, 5% in Oncology wards, 8% in Orthopaedic/Trauma wards and 10% in other types of wards.

'MALNUTRITION' RISK ACCORDING TO SUBJECT CHARACTERISTICS

'Malnutrition' risk according to gender

Women	32%
Men	33%
Overall	32% (Total base: N = 1602)

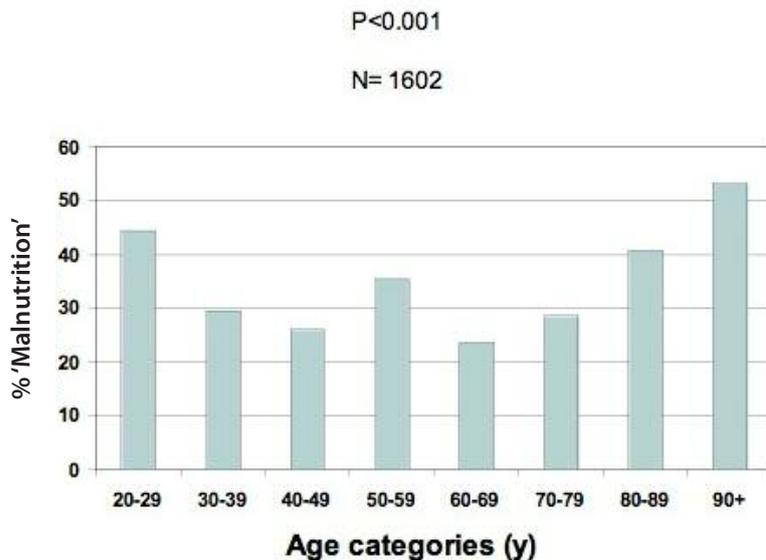
P=0.768

Risk increased with age and women were significantly older than men, but women were not at greater risk than men even after adjustment for age (binary logistic regression).

Women accounted for 49% of all patients and men for 51%.

'Malnutrition' risk according to age

A substantial malnutrition risk was present at all ages.

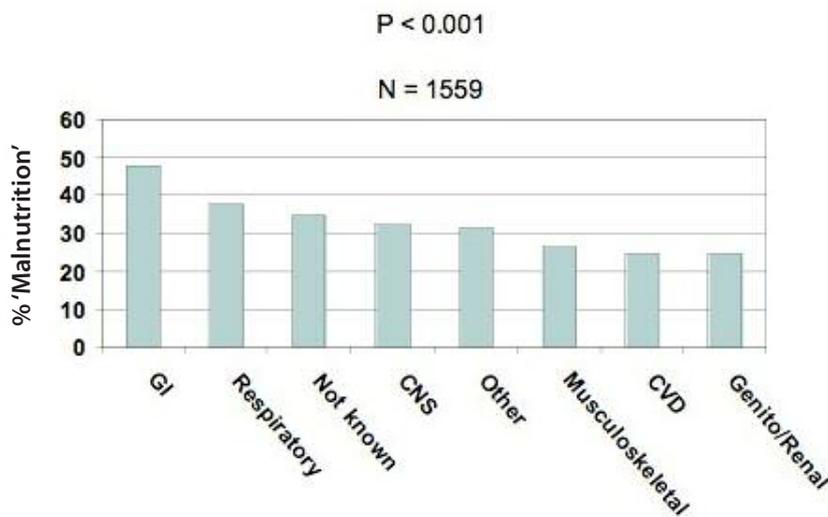


The risk was 34% in patients <60 years, 26% in those aged 60-79 years and 43% in those >80 years. It was 10% greater in patients aged 65 years and over than those <65 years (34% v 31%; p = 0.176).

Contribution of a low BMI to 'MUST' score

Underweight (BMI <20kg/m²) contributed to 28% patients categorised as 'malnourished' (medium + high risk).

Malnutrition' according to diagnostic category



Of the patients screened 15% had GI (Gastrointestinal) disease, 14% Respiratory disease, 3% diagnoses not known, 7% Neurological (CNS) diseases, 19% other diagnoses, 16% Musculoskeletal disease, 16% Cardiovascular (CVS) disease and 9% Genito/Renal disease

'Malnutrition' according to presence of cancer

No	33%
Yes	30%
Don't know	34%
Overall	32% (Total base: N = 1602)

P = 0.735

83% of all patients were reported to have no cancer and 13% to have cancer and in the remaining 4% the response was 'don't know'. In those patients with cancer (N=201), the prevalence of 'malnutrition' varied according to diagnostic category: 31% (N=39) in GI disease; 37% (N=19) in Respiratory disease; 25% (N=8) Neurological disease; 10% (N=10) in Cardio-vascular disease; 22% (N=36) in Genito/Renal disease, 67% (N=9) in Musculoskeletal conditions and 30% (N=79) in other diagnoses. Diagnosis not stated in 1 patient.

'Malnutrition' according to presence of other conditions

No	28%
Yes	35%
No answer	67%
Overall	32% (total base: N = 1602)

P=0.002

38% of all patients had no other conditions and 62% did.

Comments

This was the first year that the Irish Nutrition and Dietetic Institute (INDI) had collaborated with BAPEN and encouraged hospitals in the Republic of Ireland (ROI) to take part in the 2010 Nutrition Screening Survey. Although, as in the UK the sample was not chosen randomly from hospitals throughout Ireland, it represents the largest survey of its kind in ROI. The results, which show many similarities to the prevalence of malnutrition in UK hospitals confirm that 'malnutrition' is common on admission to acute and community hospitals, in all types of wards, all age groups and diagnostic categories. Overall, malnutrition risk was identified in 33% of patients admitted to hospital, most of whom were at high risk of malnutrition (25%) and only a minority (8%) at medium risk.

The admission prevalence of 'malnutrition' is not the same as the ward prevalence which is likely to be higher than the admission prevalence as malnourished patients stay in hospital longer than non-malnourished patients. With an admission prevalence of 33% and a likely longer length of stay of 30%, the ward prevalence can be estimated to be around 39% (assuming there is no mortality and no 'malnutrition' develops during hospital stay) (15).

Since 'malnutrition' was assessed on admission to hospital, its presence indicates that it had largely developed in the community. The issues involved and the implications for policies in clinical and public health nutrition have been recently discussed (18).

Appreciation of the magnitude of the problem and in-hospital mortality associated with malnutrition also helps to inform policy at a local and national level (17). In this survey, 86% patients admitted to hospital came from their own homes and 30% were at risk of 'malnutrition' and whilst only 4% patients were admitted from care homes over half of these were at risk. The mean age of patients admitted was slightly lower and their mean BMI was slightly higher than that of patients admitted to hospitals in UK (61.0 years v 65.8 years and 27.2kg/m² v 26.3kg/m²). 8% had a BMI of less than 20kg/m² and 27% a BMI of more than 30kg/m² compared with 13% and 24% of patients in the UK survey. A similar proportion of patients had cancer (12%) although in contrast to the UK a lower proportion of those with cancer were identified as at risk of 'malnutrition' compared with those who did not have cancer.

All hospitals in the survey had access to Nutrition and Dietetic services although only 7% (N=2) had access to a Nutrition Support Team. Only a quarter had a policy for nutrition screening and only 38% audited nutrition screening, mainly every year.

Almost two thirds of the hospitals seemed to be aware of standards relating to weighing scales although none of them were able to accurately specify any standards regarding type or class of weighing scales to be used in healthcare settings. This may reflect the lack of national standards for weighing scales in Ireland. All respondents that said they were aware of standards referred to the need for scales to be regularly calibrated. The hospitals

reported using a range of screening tools although (45%) of centres said no tool was used. The 'Malnutrition Universal Screening Tool' ('MUST') was used in 34% hospitals, sometimes along with either the Mini Nutritional Assessment tool or a local tool. It is not known if local or other screening tools used had been validated. 45% of hospitals used a combination of lectures and workshops to train staff on nutritional screening although an equal number reported no training being provided. Just under half of hospitals did not use a screening tool or provide training on nutritional screening failing to comply with the guidance for prevention of undernutrition in hospitals in Ireland issued by the Department of Health and Children (15).

Although over half the hospitals linked the results of screening to a care plan this did not always follow through to discharge planning and communication with less than a third of centres always or usually including nutritional information on at risk patients in discharge letters.

'Malnutrition' in hospitals in Ireland, like those in the UK, is not a trivial problem that can be ignored but a serious issue that needs attention. Based on data from the 2008 Nutrition Screening Survey in the UK, it has been estimated that more than 80% of patients at risk of 'malnutrition' on admission to hospital could have been identified and therefore treated in the community prior to hospitalization (18). Strategies to prevent and treat 'malnutrition' before admission to institutions together with routine nutritional screening on admission to care and discharge planning should be considered in detail. There is scope for substantial improvement in both in the UK and Republic of Ireland.

Care Home Survey – Republic of Ireland

GENERAL FEATURES

Total number of residents (not all questions completed on all subjects)

178 individual residents
153 with 'MUST' scores (all ≥ 18 years)

Care Homes

Number of Care Homes

17

Nutrition service, policies on nutritional screening, audit, weight, and measurement of height

	Nutrition Dietetic service service (%)	Nutrition screening policy (%)	Nutrition screening audited (%)
Yes	100	94	65
No	0	6	12
Don't know or no answer	0	0	24
Total	100	100	101*
Number of care homes	17	17	17

*Results do not add up to 100% due to rounding up of the component values to the nearest 1%.

Frequency of nutrition screening audit:

Every year 91%
Every 2 years 9%

(Total base: N = 11 care homes)

	Policy for weighing on admission (%)	Policy for recording height (%)	Regular weighing during stay (%)
Yes	100	82	100
No	0	6	0
Don't know or no answer	0	12	0
Total	100	100	100
Number of care homes	17	17	17

Awareness of standards re weighing scales:

Yes 41%
No 18%
Don't know or no answer 41%

(Total base: N= 17 care homes)

Amongst those that answered yes (N=7) the following responses were obtained:

'Calibration'	14%
National standards	14%
Maintenance contract for weighing scales	29%
No answer	43%

(Total base: N= 7 care homes)

Linking screening results to a care plan

Yes	100%
No	0%

(Total base: N = 17 care homes)

Percent of residents screened: 6% screened 51-75% of residents and 94% screened 76-100% residents

(Total base N = 17 care homes).

Type of screening tool used

'MUST' [†]	53%
MNA ^{††}	47%

(Total base: N=17 care homes)

[†]'MUST' = 'Malnutrition Universal Screening Tool'; ^{††}MNA = Mini Nutritional Assessment

How are staff trained on nutritional screening?

Lecture/workshop	82%
Lecture/workshop + workbook	0%
Lecture/workshop + other	6%
Other	12%

(Total base: N=17 care homes)

Breakdown of 'Other' training

In house training	50%
No answer	50%

(Total base: N= 2)

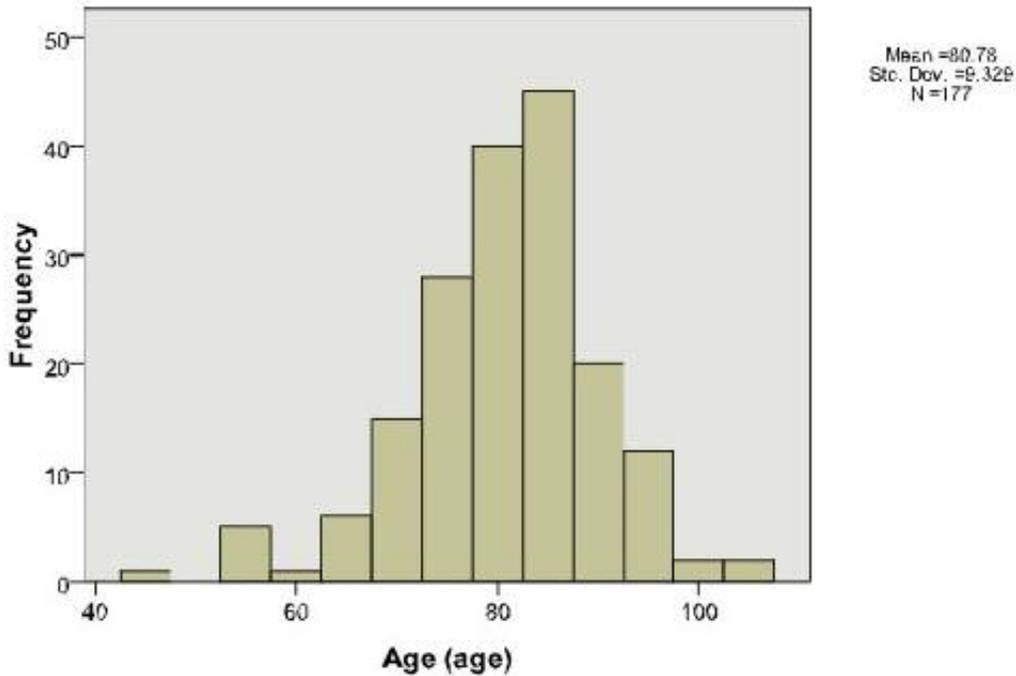
General subject characteristics (ROI)

Gender: There were 110 women and 67 men (Total N = 177). Ratio of women to men, 1.64:1.0

Age: The mean age was 80.8 (sd 9.3) years (median 82.0 years; inter-quartile range 73-82 years) (N = 177).

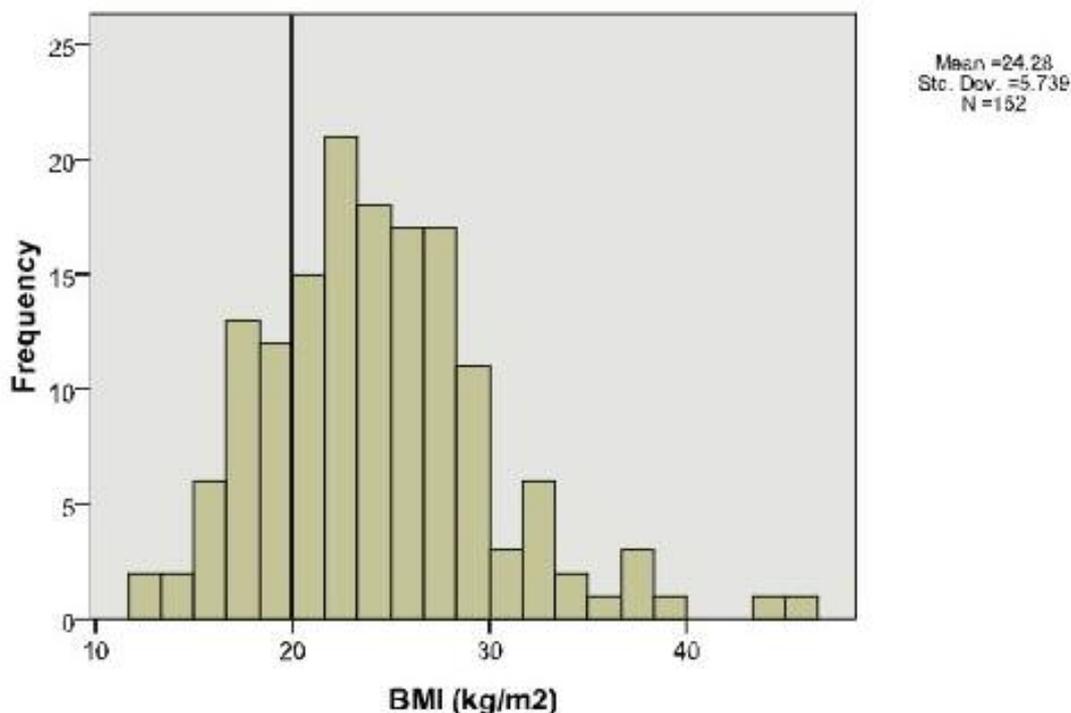
Women (N = 110) were older than men (N = 67) (mean 81.9 (sd 9.5) v 78.9 (sd 9) years (P = 0.034); median 83 v 81 years.

95% of the residents were 65 years and over. In the figure of age distribution below, frequency refers to the number of residents in each age group, which is represented by the individual bars of the histogram.



Body mass index (BMI): The mean BMI was 24.3 (sd 5.7) kg/m².

23% of residents had a BMI less than 20 kg/m² (15% less than 18.5 kg/m²), 36% a BMI between 20 and 24.9 kg/m² and 41% had a BMI ≥25 kg/m² (12% >BMI 30kg/m²) (Total N = 152). In the figure of BMI distribution opposite, frequency refers to the number of residents in each BMI group, which is represented by the individual bars of the histogram. The reference line corresponds to a BMI of 20 kg/m².



Diagnostic categories: The diagnostic categories of residents in the survey were as follows: CNS (stroke, dementia, Parkinson’s disease, Alzheimer’s disease multiple sclerosis) 46%; Frail elderly (various reasons) 18%; Musculoskeletal (including orthopaedic) 14%; Cardiovascular disease 7%; Mental health disorders 3%; Respiratory disease 6%; Genito/Renal disease 3%; Gastrointestinal disease 3%; (N = 119).

CNS disease in purely residential and nursing homes occurred in 48% and 82% of the residents respectively.

PREVALENCE OF ‘MALNUTRITION’

‘MALNUTRITION’ ACCORDING TO RISK CATEGORY

Medium risk	16%
High risk	16%
Medium + high risk	32%
(Total base: N = 153)	

‘MALNUTRITION’ ACCORDING TO TYPE OF CARE HOME AND CARE HOME CHARACTERISTICS

‘Malnutrition’ according to type of care home

Nursing homes only	34%
Residential homes only	9%
Other homes	32%
Overall	32% (Total base: N =143)
P = 0.248	

75% of residents were in homes that were exclusively nursing homes, 0% exclusively EMI units and 8% in homes that were exclusively residential homes. The remaining 17% were in care homes for EMI +disabled + residential clients. In 75% of all care homes participating in the survey there were places for individuals requiring nursing care, in 25% there were places in care homes that were either exclusively residential or residential with additional places for disabled and EMI residents.

'Malnutrition' according to number of care home beds

25-49 beds	46%
50-74 beds	40%
75-100 beds	12%
100+ beds	27%
Overall	32% (Total base N= 132)
P (trend) = 0.070	

'Malnutrition' according to source of admission

Admitted from:	'Malnutrition' risk
Home	30%
Hospital	21%
Other care home	38%
Overall	32% (Total base: N = 153)
P = 0.094	

52% of all residents were admitted from their own homes, 35% from a hospital and 14% from another care home.

'Malnutrition' according to duration in care home

Duration in care home:	'Malnutrition' risk
0-1 month	40%
2-3 months	20%
4-6 months	32% (Total base: N = 153)
Overall	32%
P = 0.243	

26% of residents were admitted in the previous 0-2 months, 16% in the previous 2-4 months, and 58% in the previous 5-6 months

'Malnutrition' according to screening policy

Nutrition screening policy:	'Malnutrition' risk
Yes	32%
No answer + don't know	40%
Overall	32% (Total base: N = 153)
P = 0.576	

94% were resident in care homes with a screening policy; 0% in care homes that did not have a policy and the remaining 6% came from care homes where the respondents did not know whether there was a screening policy in place or provided no answer to the question.

'Malnutrition' according to percent of residents screened

Percent residents screened:	'Malnutrition' risk
51-75%	0%
76-100%	40%
No answer	32%
Overall	32% (Total base: N= 153)
P 0.680	

93% of residents came from homes that screened 76-100% of residents and 1% from homes that screened 51-75% of residents. The remaining 6% came from homes that did not answer this question.

'MALNUTRITION' ACCORDING TO SUBJECT CHARACTERISTICS

'Malnutrition' according to gender

Women	39%
Men	21%
Overall	32% (Total base: N = 153)
P = 0.025	

63% of the residents were women and 37% men.

'Malnutrition' according to age

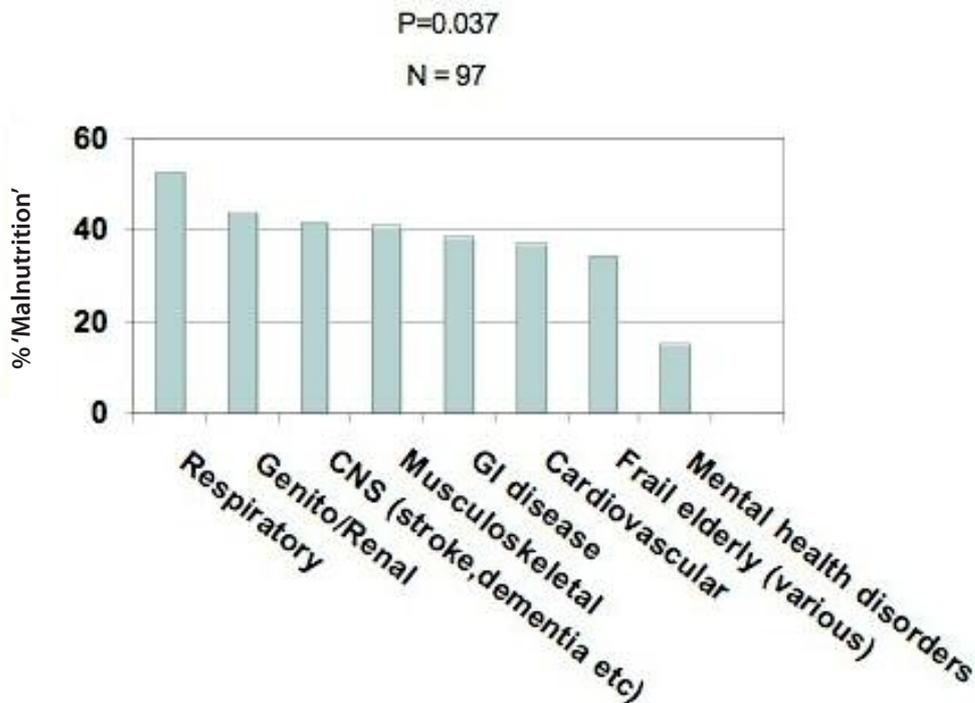
<70 years	33%
70-84 years	31%
≥85 years	33%
Overall	32% (Total base: N = 153)
P (linear trend) = 0.880	

10% of residents were less than 70 years, 53% 70-84 years, and 37% 85 years and over.

Contribution of a low BMI to 'MUST' score

Underweight (BMI <20kg/m²) contributed to 73% of residents categorised as 'malnourished' (medium + high risk).

'Malnutrition' according to primary problem



7% had Respiratory conditions, 1% Genito/Renal conditions, 49% had Neurological (CNS) conditions (including stroke, dementia, Parkinson's disease, Alzheimer's disease), 14% had Musculoskeletal conditions (including orthopaedic), 2% had GI (gastrointestinal) conditions, 7% had Cardiovascular disease, 14% had Frailty (Frail elderly) and 3% had mental health disorders, (N = 97).

'Malnutrition' according to presence of other conditions

Presence of other conditions	'Malnutrition' risk	
No	40%	
Yes	28%	
Don't know	0%	
Overall	32%	(Total base: N = 153)
P = 0.140		

37% of all residents had no other conditions and 61% of all residents had multiple medical conditions. There was uncertainty (don't know) in 2%.

'Malnutrition' according to presence of cancer

With cancer	25%	
Without cancer	32%	
Overall	32%	(Total base: N = 153)
P= 0.662		

5% of residents had cancer, 95% did not,

Comments

17 care homes reporting data on 178 residents participated in the 2010 Nutrition Screening Week Survey. Most of these institutions (N=13) were described as 'Long stay Residential Community Nursing Units' managed by the Health Service Executive but submitted data using the care home forms.

Using the same procedure for data analysis, the overall prevalence of 'malnutrition (32%) was similar to that identified in patients admitted to hospitals (33%) although an equal proportion of residents were at high or medium risk (16% high risk and 16% medium risk). Three quarters of subjects were in exclusively nursing homes and only 8% were in exclusively residential homes. None were in homes exclusively for the elderly mentally ill (EMI). A much higher proportion of subjects in exclusively nursing homes were at risk of 'malnutrition' than those in exclusively residential homes (34% v 9%). Over half the subjects were admitted from their own homes, a higher proportion than in the UK where 41% were admitted from their own homes but in both ROI and UK 30% of these residents were at risk of 'malnutrition'. A lower proportion was admitted from hospital (35%) compared to the UK (44%) and the associated prevalence of 'malnutrition' was about half of that found in the UK survey (21% v 43%). Factors affecting admission to care in countries with different healthcare systems vary and these should be borne in mind when comparing the results of Ireland with the UK.

Overall, the residents in the survey were younger than those admitted to care homes in the UK (mean age 80.8 years v 83.1 years) although like the UK survey there were more women included than men, and the women were older and more at risk of 'malnutrition' than men (median 83 years v 81 years and 39% v 21% respectively).

Almost a quarter of subjects were thin with a mean BMI of less than 20 kg/m². The overall BMI was 24.3 kg/m² which was significantly lower than that of patients admitted to hospitals (mean BMI 27.2kg/m²). A BMI of less than 20 kg/m² was present in 73% of subjects who were categorised as 'malnourished' (medium + high risk).

Almost half the residents had neurological conditions, 41% of whom were at risk of 'malnutrition'. The highest prevalence of 'malnutrition' was found in those residents with respiratory disease but these accounted for only 3% of the residents in the survey. Only 5% of residents had cancer and those without cancer were at higher risk than those with cancer (32% v 25%).

All care homes had access to Nutrition and Dietetic services and almost all had a nutrition screening policy. Screening was audited in 65% of centres, mainly on an annual basis. All centres reported weighing residents on admission and regularly throughout their stay although height was obtained in 82% centres. Good nutritional care requires that measurements of weight and changes in weight are acted upon, but the survey did not examine this issue.

Results of the survey suggest that there is a need to increase awareness about standards relating to weighing scales although it is unclear whether specific standards for countries other than England have been published. Less than half the care homes were aware of standards relating to weighing scales and none of them were able to specify any standards regarding type or class of weighing scales to be used in healthcare settings. All respondents that said they were aware of standards referred to the need for scales to be regularly calibrated. Just over half (53%) the centres reported using the 'Malnutrition Universal Screening Tool' ('MUST') and the remainder (47%) used the Mini Nutritional Assessment Tool (MNA) for screening residents. Lectures and workshops were

used by the majority of centres to train staff on nutritional screening. The BAPEN e-learning module on nutritional screening (16) could be a useful resource to facilitate training in centres using 'MUST'.

Although the information on 'malnutrition' in care homes obtained in this survey is limited by sample size, it provides some useful insights into the practice and policy for nutritional screening and the prevalence of 'malnutrition' on recent admission to care.

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Appendix I - Hospitals

<i>Sheet 1(a) for Hospitals</i>	<i>Information about your Hospital</i>
Hospital Name	Code Number

Please complete by putting an **X** in the appropriate boxes. Please use **black ink**.

- 1a. What type of hospital?
 - Acute Community
2. How many beds? Please state number
3. Do you have access to a Nutrition and Dietetic service? Yes No ?
4. Do you have access to a Nutrition Support team? Yes No ?
5. Does your hospital / Trust have a Nutrition Steering Committee? Yes No ?
6. Does your hospital / Trust have a Nutrition Screening policy? Yes No ?
- 7a. Do you know what % patients are screened on admission? Yes No ?
- 7b. If you have answered 'Yes' to 7a please indicate % of patients screened on admission:
 - Up to 25% 26-50% 51-75%\$ 76-100%
8. Which nutrition screening tool(s) is/are routinely used in the hospital/Trust?
 - 'MUST' MNA NRS Local tool No tool used
 - Other (please specify)
9. How are staff trained on nutritional screening? (please tick all that apply)
 - Lecture /workshop Workbook No training provided E-learning
 - Other (please specify)
10. Are patients routinely weighed on admission?
 - Yes on all wards On some wards No ?
11. Are you aware of any standards regarding the type of and maintenance requirements for weighing scales used in your Trust? Yes No ?
If yes, please specify which standard you are aware of/following
12. Is the height of patients routinely recorded?
 - Yes on all wards On some wards No ?
13. Do you have a care plan for the management of patients identified as at risk of malnutrition / underweight?
 - Yes No ?
14. Is nutrition information routinely included in discharge communications for those identified at risk of malnutrition / underweight?
 - Always Usually Sometimes Never ?
- 15a. Is the practice of nutrition screening audited? Yes No ?
- 15b. If yes, how often? Every year Every 2 years Every 3 or more years ?

Thank you



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Guidance Notes: Hospitals

Thank you for participating in Nutrition Screening Week 2010. The aim of this survey is to establish the prevalence of malnutrition risk in patients and clients admitted to hospitals and care homes in the UK in the winter season, to complement data already collected from previous screening weeks held in the summer (NSW08) and autumn (NSW07) and to provide additional information on nutritional care practice across the UK.

The results will be presented at the BAPEN Conference in Harrogate, 2-3 November 2010. Additionally we will analyse and send you the results of your data to enable you to report the scale of the problem in your locality and to compare your data with the national picture. Participating in the Nutrition Screening Week will help demonstrate how you are striving to achieve nutritional standards and your commitment to meeting the nutritional needs of your patients or clients.

The survey is based on 2 questionnaires, a general questionnaire about your hospital and practice of nutritional screening (Sheet 1 (a)) and a patient /client data collection sheet (Sheet 2 (a)). Please read the following guidance notes carefully before completing the forms.

Sheet 1(a): Please answer on behalf of your hospital within your Trust. Please provide the information for the hospital as a whole, not a particular area / unit within it. If you wish to include more than 1 hospital within your Trust, please use a separate set of documentation for each hospital.

You will be issued with a code number for each hospital, please write it in the space on the form. If you were allocated a code/s last year please use this code again this year.

If you don't know the answer to any question, please put an x in the box with a question mark beside it.

In the question regarding screening tools used in your hospital/trust, please tick all that apply if more than one tool is used. The tools are defined as follows:

'MUST': 'Malnutrition Universal Screening Tool'

MNA: Mini Nutritional Assessment

NRS: Nutrition Risk Score

Other: to be specified.

Sheet 2(a) Patient / Client data:

Please collect the required information on all adult patients admitted to medical, surgical, orthopaedic/ trauma, care of the elderly, stroke and oncology wards in your hospital between 00.01 hrs on 12th January and 23.59 hrs on 14th January 2010. The data should be collected **within 72 hours of the patient's admission to the ward**. If you would like to collect data on patients admitted to other wards, you may do so, but please specify the type of ward in the space at the top of the sheet. Patients admitted via medical/surgical admissions units should also be included if their hospital stay is longer than 24 hours.

If patients were screened on admission and the information required is already available and documented in the patients' notes, then this can be directly entered onto the data collection sheets. If not, please obtain and record the information within 72 hours of the patient's admission.

Patients admitted to these wards during the screening period who are under 18 years of age or already established on nutritional support (enteral tube feeding, PEG feeding or parenteral nutrition) **are excluded from the study and therefore should not have data recorded**. Please add any such patients to the form, but simply insert across the row next to their number what method of feeding they are on, e.g. '002 = [excluded – PEG feeding]'

Code number: Please write the same code number inserted on Sheet 1(a) onto each copy of Sheet 2(a) that you use.

Ward/location: Please write the name or number of the ward in the space at the top of Sheet 2(a) using separate sheets for each ward included in the survey.

Have your scales been calibrated in the last 12 months?: Please enter yes, no or don't know as appropriate.

Patient Number: Please number patients admitted to each ward sequentially 001, 002, 003 etc.

Age: Please include patients who are 18 years and over, giving the age of the patient in years only. There is no need to include number of months as well.

Type of ward: Please insert appropriate number (see key at the bottom of Sheet 2(a)).

Where admitted from: Again, please insert appropriate number from key.

Diagnostic category: Please insert appropriate number. Use a “working diagnosis” if diagnosis is unconfirmed. If the primary diagnosis is an infection or cancer, please use the category number relating to the location of the infection/cancer, for example cancer of the colon should be recorded under diagnostic category 2 (GI disease); pneumonia or chest infection under category 3 (respiratory disease), a urinary tract infection (UTI) under category 5 (genito/renal disease).

Other medical conditions: Please indicate whether the patient has other relevant medical conditions or problems. A yes or no answer only is sufficient – no specific category information is required here.

Cancer?: Please indicate if the primary diagnosis or any other ongoing medical condition is one of cancer. A yes, no or don't know answer is sufficient.

Oedema Present?: Please indicate whether the patient was or was not oedematous on admission. A yes or no answer only is sufficient.

Weight: Please state weight in kg in appropriate column indicating if weight was an actual measurement or a weight recalled by the patient or carer. If weight of patient is not available, please assess weight status subjectively, i.e. does the patient look underweight, normal weight or overweight.

Height: Please state height in metres in appropriate column indicating if height was an actual measurement, a height recalled by the patient or carer or a value calculated from length of the ulna (see information on measurement of ulna and conversion table). If height (or surrogate measure) cannot be safely obtained e.g. confused, terminally ill, non-compliant patients, please enter N/A.

Recent unintentional weight loss: Please give amount of any weight lost unintentionally in the last 3-6mths. Please do not include any weight lost following use of diuretics. Please give value in kg (1kg =2.2lbs). If recent weights are not available in the patient's notes please ask the patient / carer if they are aware of the amount of any recent weight loss. If patient /carer does not know how much weight has been lost, insert DK (Don't know).

Food intake, past and future: Please tick the relevant boxes. Please use your professional judgement as to the likely food intake over the next 5 days. There is no need to record food intake.

Type of admission to hospital: Please tick if admission was elective or an emergency .



Appendix II - Care Homes

<i>Sheet 1(b) for Care Homes</i>	<i>Information about your Care Home</i>
Care Home Name	Code Number

Please complete by putting an **X** in the appropriate boxes. Please use **black ink**.

1. What type of Care Home? (please tick all that apply)
 - Nursing Elderly Mentally Ill Disabled Residential
2. How many beds? Please state number
3. Do you have access to a Nutrition and Dietetic service? Yes No ?
4. Is it your policy to weigh residents on admission? Yes No ?
- 5a. Are residents weighed regularly during their stay? Yes No ?
- 5b. If you have answered 'Yes' to 5a, please indicate how often:
 - Monthly As required Other, please state
6. Are you aware of any standards regarding the type of and maintenance requirements for weighing scales used in your Home? Yes No ?
If yes, please specify which standard you are aware of/following
7. Is the height of residents recorded on admission? Yes No ?
8. Do you have a Nutrition Screening Policy? Yes No ?
- 9a. Do you know what % of residents are screened on admission? Yes No ?
- 9b. If you have answered 'Yes' to 8a, please indicate that %:
 - Up to 25% 26-50% 51-75% 76-100%
10. Which nutrition screening tool(s) is/are routinely used in the hospital/Trust?
 - 'MUST' MNA NRS Local tool No tool used
 - Other (please specify)
11. How are staff trained on nutritional screening? (please tick all that apply)
 - Lecture /workshop Workbook No training provided E-learning
 - Other (please specify)
- 12a. Is the practice of nutrition screening audited? Yes No ?
- 12b. If yes, how often?
 - Every year Every 2 years Every 3 or more years ?
13. Do you have a care plan for the management of residents identified as at risk of malnutrition / underweight? Yes No ?

Thank you



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Guidance Notes: Care Homes

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The survey is based on 2 questionnaires, a general questionnaire about your Care Home and practice of nutritional screening (Sheet 1 (b)) and a client data collection sheet (Sheet 2 (b)). Please read the following guidance notes carefully before completing the forms.

Sheet 1 (b): You will be issued with a code number for the Home, please write it in the space on the form. If you don't know the answer to any question, please put an X in the box with a question mark beside it.

In the question regarding screening tools used in your hospital/trust, please tick all that apply if more than one tool is used. The tools are defined as follows:

'MUST': 'Malnutrition Universal Screening Tool'

MNA: Mini Nutritional Assessment

NRS: Nutrition Risk Score

Other: to be specified.

Sheet 2(b) Resident / Client data: Please collect the information requested for all residents / clients who were admitted to your Care Home in the last 6 months. Residents who were already established on nutritional support (enteral tube feeding, PEG feeding or parenteral nutrition) when admitted are excluded from the study and therefore should not have data recorded. Please add any such residents to the form, but simply insert across the row next to their number what method of feeding they are on, e.g. '002 = [excluded – PEG feeding]'

Code number: Please write the same code number inserted on Sheet 1 (b) onto each copy of Sheet 2 (b) that you use.

Name of Care Home: Please write the name of your Care Home and /or unit in the space at the top of each Sheet 2 (b) that you use.

Have your scales been calibrated in the last 12 months?: Please enter yes, no or don't know as appropriate.

Resident Number: Please number residents simply as 001, 002, 003 in the order in which their data is recorded.

Age: Please give age of the resident in years. There is no need to include number of months as well.

Primary Clinical Problem: Please insert appropriate number, only one number is required. If the primary diagnosis is an infection or cancer, please use the category number relating to the location of the infection/cancer, for example cancer of the colon should be recorded under diagnostic category 2 (GI disease); pneumonia or chest infection under category 3 (respiratory disease), a UTI under category 5 (genito/renal disease)

Other Medical Conditions: Please indicate whether the resident has other relevant medical conditions or problems. A yes or no answer only is sufficient – no specific category information is required here.

Cancer?: Please indicate if the primary diagnosis or any other ongoing medical condition is one of cancer. A yes, no or don't know answer is sufficient.

Oedema Present?: Please indicate whether the patient was oedematous on admission. A yes or no answer is sufficient. If you do not know insert DK (Don't Know). Please also indicate if resident is oedematous now. A yes or no answer is sufficient.

Weight: Please state weight (in Kg) of resident on admission using documented value in resident's notes. If weight on admission was not recorded, write NA (Not Available). Please state current weight (in kg) of resident in appropriate column. Write NA (Not Available) in box if for any reason it is not possible to weigh the resident.

Height: Please state height in metres in appropriate column indicating if height is an actual measurement, a height recalled by the resident or carer or a value calculated from length of the ulna (see information on measurement of ulna and conversion table). Write NA (Not Available) in box if for any reason it is not possible to obtain a height for the resident.

Recent unintentional weight loss: Please give amount of any weight lost unintentionally in the last 3-6mths. Do not include any weight lost due to use of diuretics. Please give value in kg (1kg =2.2lbs). If recent weights are not available in the resident's notes please ask the resident / carer if they know how much weight the resident has recently lost. If resident /carer does not know how much weight has been lost, insert DK (Don't know).

Food intake, past and future: Please tick the relevant boxes. Please use your professional judgement as to the likely food intake over the next 5 days. There is no need to record food intake.



Appendix III - Mental Health Units

<i>Sheet 1(c) for MH Units</i>	<i>Information about your Hospital</i>
Unit Name	Code Number

Please complete by putting an **X** in the appropriate boxes. Please use **black ink**.

- 1a. What type of unit?
 - Acute Mental Health
 - Long stay/rehab unit
2. How many beds? Please state number
3. Do you have access to a Nutrition and Dietetic service? Yes No ?
4. Do you have access to a Nutrition Support team? Yes No ?
5. Does your unit / Trust have a Nutrition Steering Committee? Yes No ?
6. Does your unit / Trust have a Nutrition Screening policy? Yes No ?
- 7a. Do you know what % patients are screened on admission? Yes No ?
- 7b. If you have answered 'Yes' to 7a please indicate % of patients screened on admission:
 - Up to 25%
 - 26-50%
 - 51-75%
 - 76-100%
8. Which nutrition screening tool(s) is/are routinely used in the hospital/Trust?
 - 'MUST'
 - MNA
 - NRS
 - Local tool
 - No tool used
 - Other (please specify)
9. How are staff trained on nutritional screening? (please tick all that apply)
 - Lecture /workshop
 - Workbook
 - No training provided
 - E-learning
 - Other (please specify)
10. Is it your policy to weigh patients on admission? Yes No ?
- 11a. Are patients weighed regularly during their stay? Yes No ?
- 11b. If you have answered 'Yes' to 9a, please indicate how often:
 - Monthly
 - As required
 - Other, please state
12. Are you aware of any standards regarding the type of and maintenance requirements for weighing scales used in your Trust? Yes No ?
If yes, please specify which standard you are aware of/following
13. Is the height of patients recorded on admission? Yes No ?
14. Do you have a care plan for the management of patients identified as at risk of malnutrition / underweight? Yes No ?
15. Is nutrition information routinely included in discharge communications for those identified at risk of malnutrition / underweight?
 - Always
 - Usually
 - Sometimes
 - Never
 - ?
- 14a. Is the practice of nutrition screening audited? Yes No ?
- 14a. If yes, how often? Every year Every 2 years Every 3 or more years ?

Thank you



BAPEN's Nutrition Screening Weeks are undertaken in collaboration with the British Dietetic Association, Royal College of Nursing and the Irish Nutrition and Dietetic Institute and with the support of the National Patient Safety Agency, Department of Health of England, The Scottish Government, Welsh Assembly Government and the Chief Nursing Officer in Northern Ireland.

Guidance Notes: Mental Health Units

Thank you for participating in Nutrition Screening Week 2010. The aim of this survey is to establish the prevalence of malnutrition risk in patients and clients admitted to hospitals and care homes in the UK in the winter season, to complement data already collected from previous screening weeks held in the summer (NSW08) and autumn (NSW07) and to provide additional information on nutritional care practice across the UK.

The results will be presented at the BAPEN Conference in Harrogate, 2-3 November 2010. Additionally we will analyse and send you the results of your data to enable you to report the scale of the problem in your locality and to compare your data with the national picture. Participating in the Nutrition Screening Week will help demonstrate how you are striving to achieve nutritional standards and your commitment to meeting the nutritional needs of your patients or clients.

The survey is based on 2 questionnaires, a general questionnaire about your Unit and practice of nutritional screening (Sheet 1(c)) and client data collection sheets (Sheets 2(c1) and/or 2(c2)). Please read the following guidance notes carefully before completing the forms.

Sheet 1(c): You will be issued with a code number for the Unit, please write it in the space on the form. If you don't know the answer to any question, please put an X in the box with a question mark beside it.

In the question regarding screening tools used in your hospital/trust, please tick all that apply if more than one tool is used. The tools are defined as follows:

'MUST': 'Malnutrition Universal Screening Tool'

MNA: Mini Nutritional Assessment

NRS: Nutrition Risk Score

Other: to be specified.

Sheet 2(c1) Patient / Client data: This form is specifically for all adult patients on acute MH wards (including psychiatric intensive care). Please collect the required information on all patients admitted to the acute mental health wards in your hospital between 00.01 hrs on 12th January and 23.59 hrs on 14th January. The data should be collected within 72 hours of the patient's admission.

Sheet 2(c2) Client/Resident data: This form should be used for longer stay/rehabilitation Mental Health wards/units. Please collect the information requested for all residents / clients currently on the unit who were admitted within the past 6 months.

Clients who were already established on nutritional support (enteral tube feeding, PEG feeding or parenteral nutrition) **when admitted are excluded from the study and therefore should not have data recorded.** Please add any such clients to the form, but simply insert across the row next to their number what method of feeding they are on, e.g. '002 = [excluded – PEG feeding]'

Code number: Please write the same code number inserted on Sheet 1(c) onto each copy of Sheet 2(c) that you use.

Name of Unit: Please write the name of the Unit in the space at the top of each Sheet 2(c) that you use.

Have your scales been calibrated in the last 12 months?: Please enter yes, no or don't know as appropriate.

Client Number: Please number clients simply as 001, 002, 003 in the order in which their data is recorded.

Age: Please give age of the client in years. There is no need to include number of months as well.

Type of Ward/Unit: Please insert appropriate number, only one number is required.

Other Clinical Conditions: Please indicate whether the client has other relevant medical conditions or problems. A yes or no answer only is sufficient – no specific information is required here.

Cancer?: Please indicate if the primary diagnosis or any other ongoing medical condition is one of cancer. A yes, no or don't know answer is sufficient.

Oedema Present?: Please indicate whether the patient was oedematous on admission. A yes or no answer is sufficient. If you do not know insert DK (Don't Know).

For long term/rehab units, please also indicate if resident is oedematous now. Again, a yes or no answer is sufficient.

Weight: Please state weight (in kg) of client on admission using documented value in client's notes, or for acute units if weight of patient is not available, please assess weight status subjectively, i.e. does the patient look underweight, normal weight or overweight.

For long term/rehab units, if weight on admission was not recorded, write NA (Not Available). Please state current weight (in kg) of client in appropriate column. Write NA (Not Available) in box if for any reason it is not possible to weigh the client,

Height: Please state height in metres in appropriate column indicating if height is an actual measurement, a height recalled by the client or carer or a value calculated from length of the ulna (see information on measurement of ulna and conversion table). Write NA (Not Available) in box if for any reason it is not possible to obtain a height for the client.

Recent unintentional weight loss: Please give amount of any weight lost unintentionally in the last 3-6mths. Do not include any weight lost due to use of diuretics. Please give value in kg (1kg =2.2lbs). If recent weights are not available in the client's notes please ask (if appropriate) the client / carer if they know how much weight the client has recently lost. If client /carer does not know how much weight has been lost, insert DK (Don't know).

Food intake, past and future: Please tick the relevant boxes. Please use your professional judgement as to the likely food intake over the next 5 days. There is no need to record food intake.

Type of admission to unit: For acute units, please tick if admission was elective or an emergency.



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