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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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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.



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