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Putting patients at the centre of good nutritional care

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National Survey of Malnutrition and Nutritional Care in Adults

UK Malnutrition Awareness Week 2019

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Malnutrition Action Group
A Standing Committee of BAPEN

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CONTENTS

Key points

This report highlights results from the first online survey of malnutrition and nutritional care using the newly developed portal for the UK Malnutrition Awareness Week (2019).

Data were collected on 1302 patients from a variety of settings, most commonly from hospitals (58%) and care homes (28%) across England during the week 14th-20th October 2019.

The patients that were screened (58% female; mean age 75 (18-108) years had a range of primary diagnoses (the main ones listed being cancer (16%), frailty (21%), and neurological conditions (17%)).

Mean BMI was 24.5 kg/m^2 (SD 6.6 kg/m^2, n 1281), with 25% underweight (BMI<20kg/m^2) and 18% obese (BMI>30kg/m^2). Although most patients (58%) were at low risk of malnutrition using the 'Malnutrition Universal Screening Tool' ('MUST'), 42% were at risk (13% were medium and 29% were high risk). The proportion of patients at risk of malnutrition was similar in hospitals (43%), care homes (42%) and own homes (39%), slightly higher in community rehab/hospitals (50%) and lowest in mental health units (13%). Malnutrition was also prevalent in the different diagnostic groups included in the survey (e.g. cancer 39%, neurological conditions 44%, gastrointestinal conditions 42%).

More than half (64%) of all patients had a nutritional care plan in place, with 92% of patients at high risk of malnutrition and 86% of medium risk of malnutrition having care plans. Of those that had a care plan in place, 63% had at least one food-based intervention (including snacks (74%), dietary counselling with Dietitian (67%), fortified foods with food ingredients (53%)). Fewer care plans included oral nutritional supplements (46%) (most commonly using ready-made, liquid ONS, energy density >2kcal/ml), enteral tube feeding (13 %, mostly (68%) using continuous feeding regimens, a range of energy densities) and 1% included parenteral nutrition (which was managed by a nutrition support team in only half the instances). For those patients at medium and high risk of malnutrition specifically, around two thirds received at least one food-based intervention, 50% received oral nutritional supplements and about 10% received enteral tube feeding.

Purpose and Methods

The purpose of this survey was to gain an understanding of the prevalence of malnutrition according to the Malnutrition Universal Screening Tool ('MUST')(1) and the use of nutritional care across the UK in 2019 across any setting.

Although BAPEN has undertaken large national surveys in the past in different health care settings across the UK (2,3), these were a number of years ago (2008-2011) and were paper-based, making collation and analysis of the data labour intensive. These previous surveys were in hospitals, care homes and mental health units and did not include other community settings, social care and free living individuals.

We developed an online portal to automate the collection of survey data and designated a national data collection week to coincide with UK Malnutrition Awareness Week 2019 (14th-20th October 2019). An invitation letter was sent out in September 2019 to invite organisations and individuals across health and social care settings to register to participate in the survey (see Appendix A).

Non identifiable data were entered by health care professionals for each individual screened as follows (see Appendix B for the questions):

Individual Descriptive Data

The following information was collected for each individual:

- Location of residence (Hospital, Community Hospital/Rehab Unit, Own Home, Care Home, Mental Health Unit, Other)
- Length of stay in the location they resided (if applicable)
- Age
- Gender
- Primary diagnosis (choice of 1): Cancer, Cardiovascular (e.g. cardiovascular disease, coronary artery disease), Endocrinology (e.g. diabetes, Falls Fracture, Frailty, Genito/renal, Gastrointestinal (e.g. Crohns, Colitis (excluded cancer), Learning difficulties, Mental health (e.g. bipolar, schizophrenia, manic, anxiety), Musculoskeletal (e.g. arthritis), Neurological (e.g. stroke, motor neurone disease, dementia, Alzheimer's), Respiratory (e.g. chronic obstructive pulmonary disease, cystic fibrosis), Wounds, Vascular, No disease or Other (free text)
- Profession of the individual who inputted the data

A paper version was also available for users if needed to capture information to input into the portal (Appendix B)

'MUST'

Data required to complete the Malnutrition Universal Screening Tool ('MUST', see Appendix C) for each individual were entered by the health care professional in either metric or imperial units (e.g. weight, height, previous weight or weight lost over 3-6 months). There was a question to confirm if the weight loss was unintentional or not.
Body mass index and % unintentional weight loss were automatically calculated as were the BMI and weight loss scores (**Steps 1 and 2 of 'MUST'**) in the online portal.
The presence of an acute disease effect (**Step 3 of 'MUST'**; 'if the individual was acutely ill and there has been or is likely to be no nutritional intake for more than 5 days') was answered by health care professionals and an the relevant score generated.
The overall calculation of the 'MUST' score (0 to 6) and 'MUST' category (low, medium, high) (**Step 4 of 'MUST'**) were automated within the online portal.

The portal could generate for health care professionals an email record of each individual 'MUST' screen.

Nutritional care

The survey also asked if there was a malnutrition management plan in place for each individual and if so, the treatment options that were part of the care plan (See Table 1), which could include

- food based interventions and dietary counselling
- oral nutritional supplements (ONS)
- enteral tube feeding (ETF)
- parenteral nutrition (PN)

Table 1: Nutritional care plan treatment options

Food based intervention	Snacks Diet sheet Fortified foods with food ingredients Fortified foods with modular feeds Dietary counselling by dietitian Other (please specify)	
Oral nutritional supplements	Ready-made liquid 1-1.5kcal/ml Ready-made liquid 1.6-2kcal/ml Ready-made liquid > 2kcal/ml Pre thickened Dessert style Powder Other (please specify)	
Enteral Tube feeding	Continuous Bolus Energy density < 1kcal/ml Energy density 1-1.5kcal/ml Energy density 1.6-2kcal/ml Energy density >2kcal/ml Fibre containing Peptide/amino acid Blenderised diet Other (please specify)	
Parenteral Nutrition (PN)	Yes	No
If yes, is PN managed by a nutrition support team	Yes	No
PN Route	Cannula Central Line Peripheral Line Other (please specify)	

Results

Individual descriptive data

There were a total of 1302 individuals whose anonymised data was entered into the online portal. The majority were screened by a Dietitian (70%) or a Dietetic Assistant (22%).

Location

Most individuals were in hospital (58%) or in a care home (28%), with a wide-ranging length of stay (range from 0-5655 days where reported).

Table 2: Setting of individuals screened and length of stay

Setting	n	%	Length of stay (mean (range)) days
Hospital	751	58	17.7 (0-289) ^
Community Hospital / Rehab	20	1	61.8 (8 - 208)
Own Home	149	11	-
Care Home	359	28	1010 (2-5655) *
Mental Health Unit	23	2	61 (5-154)
TOTAL	**1302**	**100**	**-**

^ n= 739; *n= 64

All the individuals screened were living in England (no data from Scotland, Wales or N. Ireland). The two regions with the most individuals entered were the North East (34%) and the East Midlands (24%). Tyne and Wear and Staffordshire were the two counties with the highest number of individuals in the survey. For 0.5%, the region and county were not recorded.

Table 3: Region of individuals screened

England Region	Frequency	%
North West	87	6.7
East	169	13.0
South West	37	2.8
London	77	5.9
South East	147	11.3
East Midlands	310	23.8
Yorkshire & the Humber	16	1.2
North East	440	33.8
Total	**1283**	**98.5**

Table 4: County of individuals screened

County	Frequency	%
Bedfordshire	47	3.6
Avon	27	2.1
Devon	10	0.8
Greater London	77	5.9
Hampshire	75	5.8
Hertfordshire	109	8.4
Lincolnshire	2	0.2
Merseyside	87	6.7
Norfolk	13	1.0
Nottinghamshire	26	2.0
Yorkshire	16	1.2
Staffordshire	197	15.1
Surrey	72	5.5
Tyne & Wear	440	33.8
West Midlands	85	6.5
Total	**1283**	**98.5**

For the summary of data for those counties that had more than 40 individuals in the survey, see Appendix D-L.

Age, gender and primary diagnosis

Most individuals were female (58%), with 42% male, and there was a wide range of ages from 18 – 108 y (mean 75 y). Most (77%, n 998) were aged 65 y and over (15% 65-74 y; 26% 75-84 y; 36% 85 y and over).

There were a wide variety of primary diagnoses, with the most common ones being frailty (21%), neurological conditions (17%) and cancer (16%). Around one tenth of individuals had no primary diagnosis/disease (see Table 5).

Table 5: Primary diagnosis of individuals screened

Primary diagnosis	Frequency	%
Cancer	203	15.6
Cardiovascular (e.g. cardio vascular disease, coronary artery disease)	84	6.5
Endocrinology e.g. diabetes	9	0.7
Falls Fracture	47	3.6
Frailty	277	21.3
Genito/renal	17	1.3
GI (e.g. Crohns, Colitis (excluded cancer))	91	7.0
Learning difficulties	4	0.3
Mental health (e.g. bipolar, schizophrenia, manic, anxiety)	20	1.5
Musculoskeletal (e.g. arthritis)	23	1.8
Neurological (e.g. stroke, motor neurone disease, dementia, Alzheimer's)	226	17.4
Other	57	4.4
Respiratory (e.g. chronic obstructive pulmonary disease, cystic fibrosis)	76	5.8
Wound	13	1.0
Vascular	12	0.9
No disease	143	11.0
Total	**1302**	**100**

'MUST'

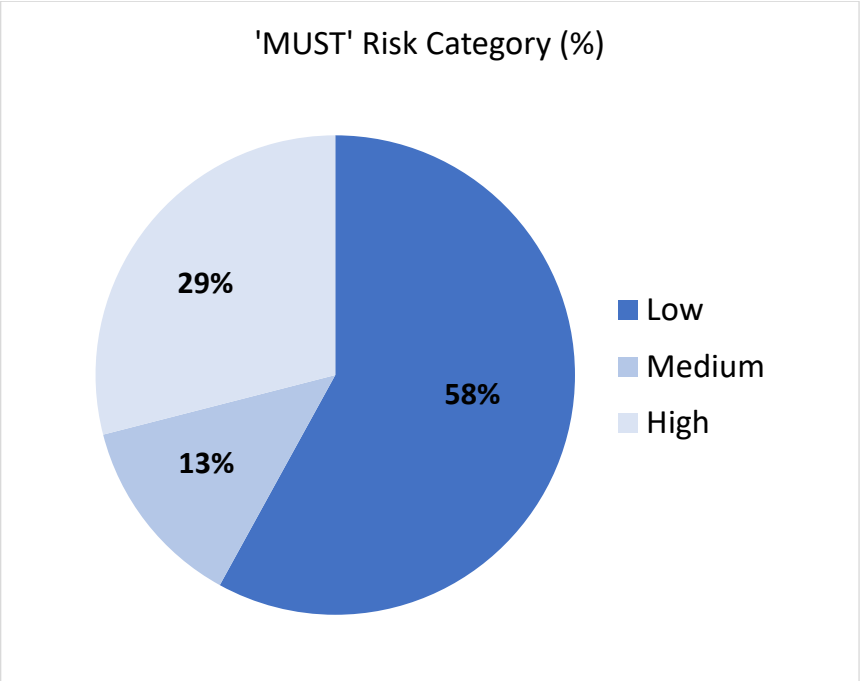
Of the individuals included in the survey with weight and height data, mean BMI was 24.5kg/m^2 (SD 6.6 kg/m^2), with a mean weight of 66.6kg (SD 19.6kg), and mean height 1.6 m (SD 0.1) m. Most individuals (75%, n 970) had a BMI >20kg/m^2 (BMI score 0), including 18% (n 230) who were obese (BMI >30kg/m^2). A quarter of individuals had a BMI<20kg/m^2 (9% BMI 18.5-20kg/m^2: BMI score 1; 16% BMI < 18.5kg/m^2: BMI score 2) (missing data: *weight n13, height n20, BMI n21: missing/not known)*

Just over one fifth (21%) of individuals had unplanned weight loss of 5% or more, with 12% having 5-10% unplanned weight loss (n162, weight loss score 1) and around one tenth having >10% weight loss (n118, weight loss score 2). Most individuals (76%) did not have unplanned weight loss (n 983, weight loss score 0) (missing data: n 39).

Around 8% scored an acute disease effect (n 97).

In terms of 'MUST' risk category, 42% were at medium or high risk of malnutrition (n 540; 13% medium (n 168), 29% high risk (n 372)) and just over half were at low risk of malnutrition (see Figure 1).

Figure 1: Proportion of individuals according to malnutrition risk ('MUST')

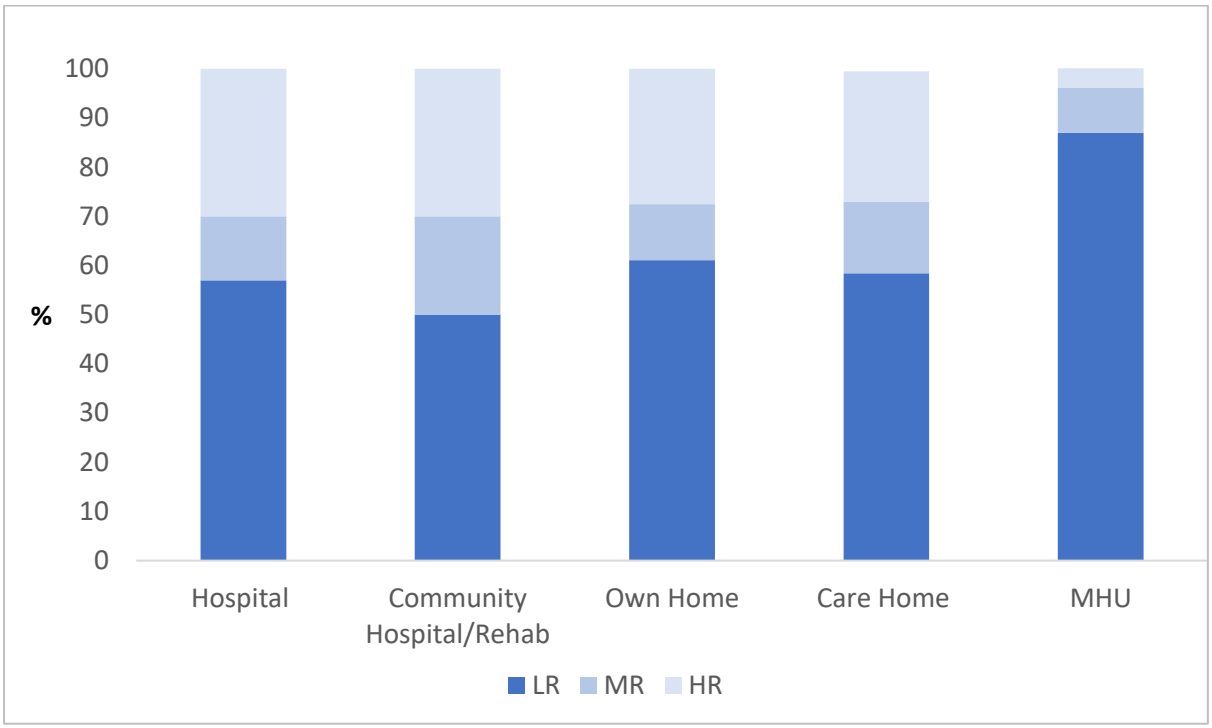


The proportion of patients at risk of malnutrition was only slightly greater in those aged 65y and above (42.4%; 14.3% medium, 28.1% high) compared to those aged under 65y (39%; 8.4% medium, 30.4% high).

‘MUST’ by Setting

The prevalence of malnutrition risk varied by setting (see Figure 2), with the lowest rate of medium and high-risk individuals being in mental health units (MHU, 13%) and the highest being in community hospitals/rehab (50%). Over one third of individuals in other settings (hospitals 43%, own home 39%, care home 42%) were at medium and high risk with ‘MUST’.

Figure 2: Prevalence of malnutrition by setting



LR=Low Risk, MR = Medium Risk, HR = High Risk, MHU = Mental Health Unit

'MUST' by Disease State

The prevalence of malnutrition was relatively similar across the different diagnostic categories of patients in the survey (36-44% at medium and high risk), with the exception of those with respiratory conditions, where a higher prevalence was recorded (66%).

Table 6: Prevalence of malnutrition according to classification of primary diagnosis

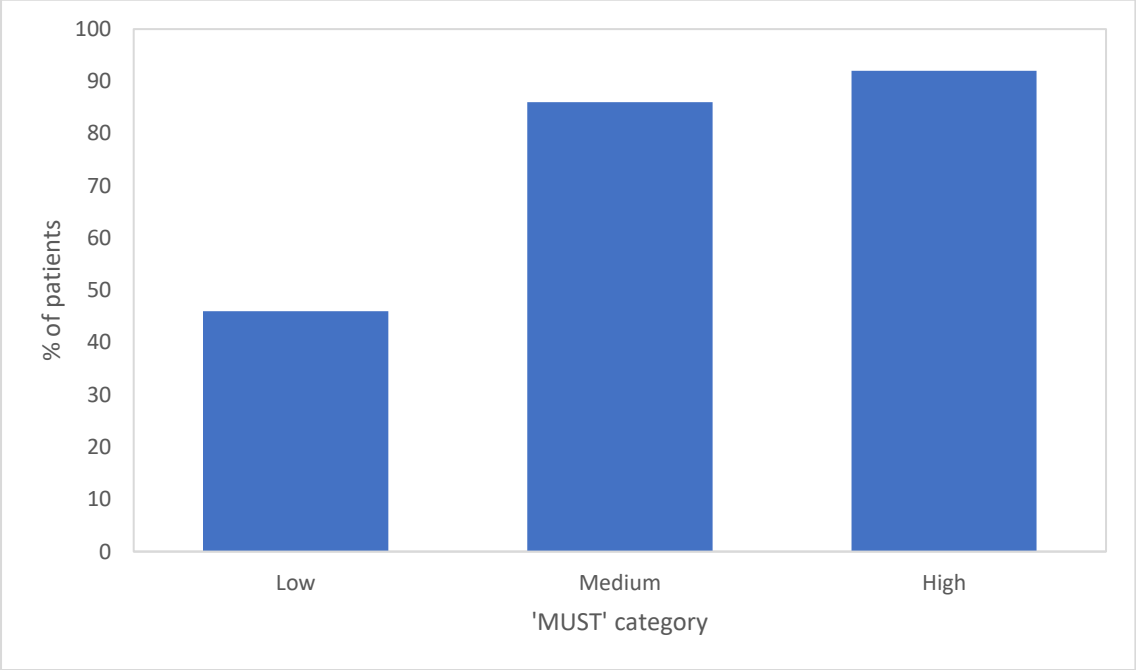
Primary diagnostic category	Low risk (%)	At risk (%) (Medium + High risk)
Cancer (n 203)	61	**39**
Frailty (n 277)	56	**44**
Neurological diseases (n 226)	56	**44**
Cardiovascular diseases (n 84)	54	**36**
Gastrointestinal diseases (n 91)	58	**42**
Respiratory diseases (n 76)	34	**66**
No disease (n 143)	60	**40**

For many of the other primary diagnostic categories (e.g. wounds, falls/fracture, vascular, musculoskeletal, see Table 5), as there were only a few patients included within the survey with these conditions, the data on malnutrition frequency was not presented as it could be unrepresentative.

Nutritional Care Plans
- All patients combined

Overall, 64% of patients had a nutritional care plan in place (n 832). Most patients at medium (86%; 144/168)) and high (92%; 342/372) risk of malnutrition had a nutritional care plan in place (Figure 3).

Figure 3: Proportion of patients with a care plan according to 'MUST' category



Overall, of those that had a care plan in place (n 832), most had food-based interventions in (snacks, dietary counselling, fortified foods with food ingredients). Less than half had oral nutritional supplements (ONS) (mostly ready-made liquid ONS >2kcal/ml), around 10% had enteral tube feeding (mostly continuous feeding regimens) and only 1% had parenteral nutrition in their care plan (see Figure 4 for a summary).

Figure 4: Summary of care plans*

Food Based Intervention

63% (n520) had at least 1 food-based intervention

Top 3

- snacks (74%)
- dietary counselling with Dietitian (67%)
- fortified foods with food ingredients (53%)

Oral Nutritional Supplements (ONS)

46% (n384) had at least 1 ONS-based intervention

Top 3

- ready-made liquid ONS >2kcal/ml (43%)
- ready-made liquid ONS <1kcal/ml (36%)
- powder-style ONS (11%)

Enteral Tube Feed

13% (n112) had at least 1 ETF-based intervention

Top 3

- continuous feed (68%)
- enteral feed >2kcal/ml (22%)
- enteral feed <1kcal/ml (19%)

Parenteral Nutrition

1% (n11) had at least 1 PN-based intervention

Managed by Nutrition Support Team

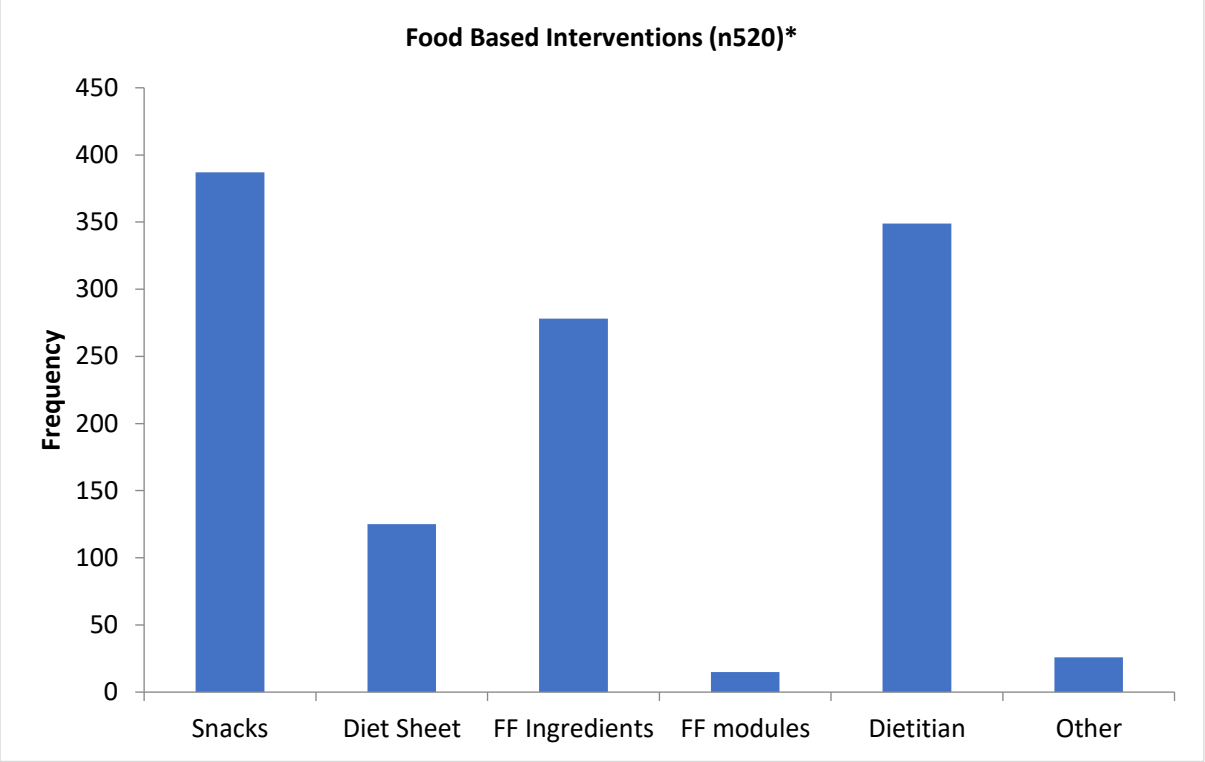
- Yes (n5) 45%
- No (n6) 55%

* from n 832 patients recorded to have a care plan

Food Based Interventions

More than 60% overall of those that had a care plan had a food-based intervention (n 520). As you can see in Figure 5, of those receiving food-based interventions, snacks were the most frequently used (74%) and a high proportion (67%) were seen by a Dietitian. The use of fortified diets was also common (53%). 'Other' less commonly listed components of the care plan included: food charts, texture modified diet, fluids only, input by a non-Dietitian.

Figure 5: Food based interventions in nutritional care plans for all patients

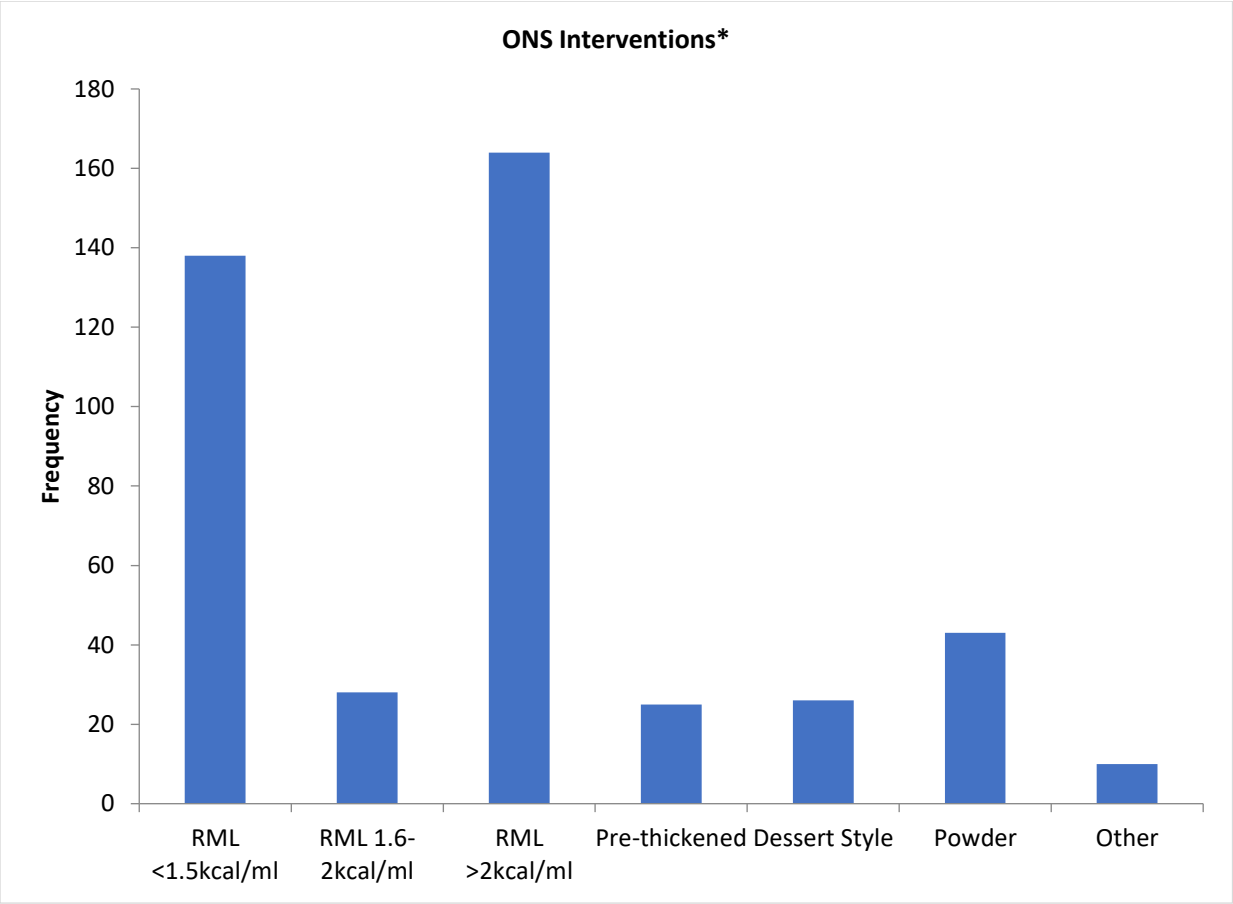


Key: FF = Fortified Food; * patients may have had more than one intervention

Oral nutritional supplements (ONS)

Less than half of the patients overall that had a care plan received oral nutritional supplements (n 384, 46%). Of those receiving ONS, ready-made liquid (RML) feeds were most commonly used, with the highest proportion (46%) including >2kcal/ml ONS (i.e. energy dense /low volume ONS) and 1-1.5kcal/ml ONS (36%) and less commonly 1.6-2kcal/ml (7%) (see Figure 6). Other types of ONS included in care plans included powders (11%), pre-thickened (7%) and dessert-style (7%) ONS. 'Other' consisted of very high energy supplements, often those containing micronutrients and micronutrient supplements.

Figure 6: Oral nutritional supplements in nutritional care plans for all patients



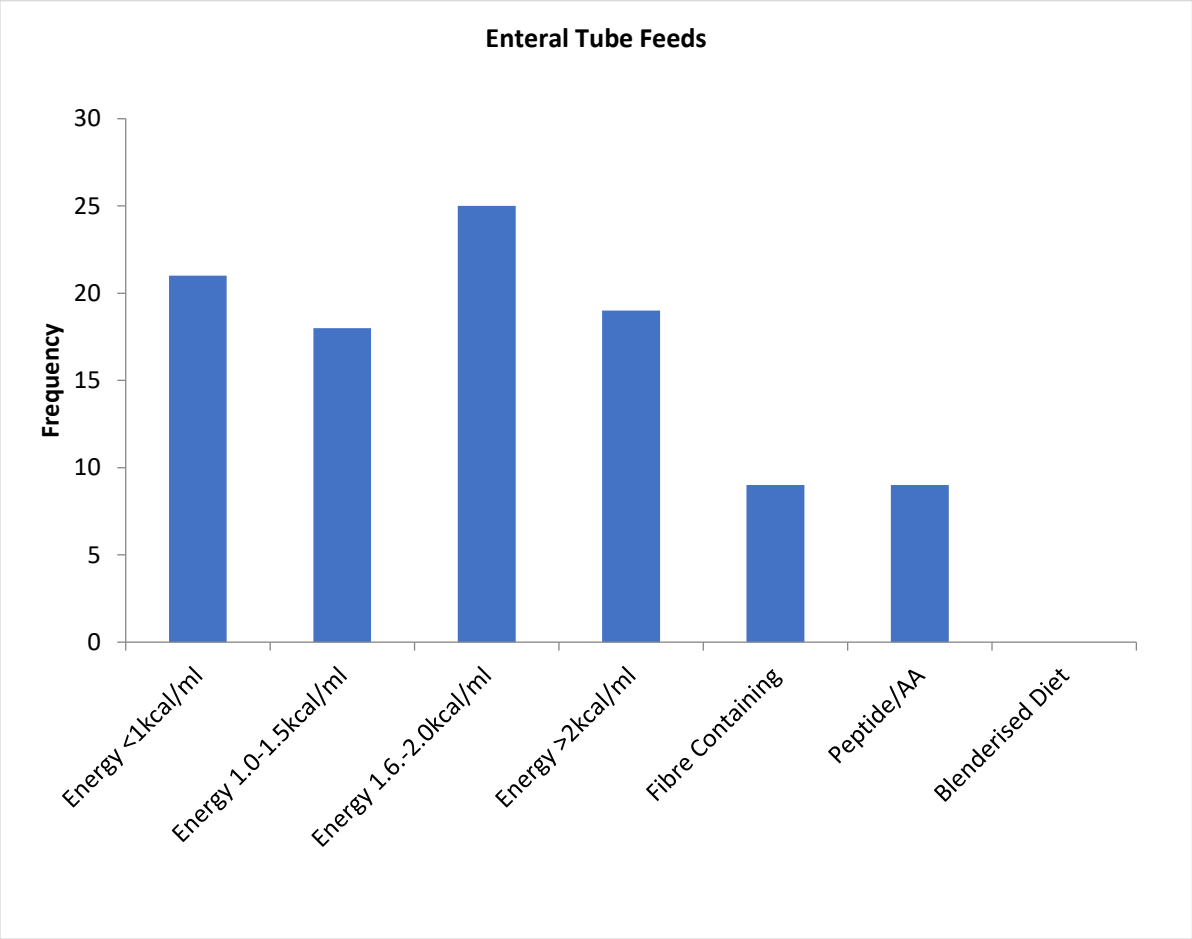
RML = ready-made liquid; * patients may have had more than one intervention (total n 384 listed as receiving ONS)

Enteral Tube Feeding and Parenteral Nutrition

Just over 10% (n 112) of patients who had a care plan in the survey had enteral tube feeding included. Continuous regimens were more frequent (68%) than bolus feeding (13%).

A range of feed energy densities were used, from <1kcal/ml (19%) to >2kcal/ml (17%) (Figure 7). Fibre containing feeds had a relatively low usage (8%) and peptide/amino acid tube feeds were recorded in 8%. No blenderised diets were recorded.

Figure 7: Enteral tube feeds in nutritional care plans for all patients



Only ~1% of patients' care plans included parenteral nutrition (n 11), mostly fed via the central route (82%). Less than half of patients on parenteral nutrition were managed by a Nutrition Support Team (45%, n=5).

Nutritional Care plans
- according to malnutrition risk

When assessed for those patients at medium (n 168) and high (n 372) malnutrition risk, around two thirds of patients received a least one food-based intervention, around half received an ONS and about a tenth received enteral tube feeding.

Table 7: Nutritional care according to malnutrition risk

Malnutrition risk	At least one food-based intervention	Oral nutritional supplements	Enteral tube feeding
Medium (M)	65%	39%	10%
High (H)	69%	55%	13%
At risk (M+H) (n 540)	67%	50%	12%

Results expressed as a percent of all medium and /or high-risk patients. Only 11 patients were recorded receiving PN, 9 were high risk, 2 low risk.

Food Based Interventions in those at risk of malnutrition

Most patients at risk of malnutrition received at least one food-based intervention and the proportion was similar for both medium and high-risk patients (see Table 7).

The food-based interventions most commonly used were snacks (54%), dietetic counselling (45%) and a fortified diet using food ingredients (42%) (more than one option could be given to patients). Less common were the use of modular feeds to fortify the diet, diet sheets, a texture modified diet and input by a non-Dietitian. There were also 155 patients at low risk of malnutrition receiving a food-based intervention.

Oral nutritional supplements in those at risk of malnutrition

Around half of all medium and high-risk patients (n 272) were recorded as receiving ONS (39% of medium risk, 55% of high risk). The most commonly used ONS were ready made liquids, >2kcal/ml and compact-style (23%), followed by 1-1.5kcal/ml (17%). Other ONS types used included 1.6-2kcal/ml ready-made liquids (4%), dessert-style (3.5%), powders (7%) and pre-thickened (3%) ONS. There were 112 patients in the survey at low risk of malnutrition recorded as receiving ONS.

Enteral tube feeding and parenteral nutrition in those at risk of malnutrition

Around a tenth of patients at risk of malnutrition were recorded as receiving enteral tube feeding (n 64), with 10% of medium risk patients and 13% of high risk patients tube fed. Some patients receiving tube feeding (n 48) were recorded as low risk.

Where recorded, most patients at risk of malnutrition were fed using a continuous feeding regimen (64%, n 41) and just over 10% were bolus fed.

There were a range of tube feeds recorded as being used in those at risk of malnutrition, with the most common being 'standard' tube feeds of differing energy density (ranging from 1kcal/ml through to >2kcal/ml). Other tube feed types (e.g. low energy <1kcal/ml, fibre-containing and peptide/amino acid feeds) were used in < 10% of patients at risk of malnutrition. There were no records of use of a blended tube feed.

Of the 11 patients recorded as receiving PN, 9 were high risk of malnutrition and 2 were at low risk. Of the high-risk patients, most (n 7) were centrally fed and 56% (n 5) were managed by a nutrition support team.

Conclusions

This BAPEN survey, the first online one using our dedicated portal, undertaken as part of our national Malnutrition Awareness Week in 2019 (MAW2019), highlights that malnutrition continues to be prevalent in our society. The adult patients and individuals recorded in our survey had a wide range of ages and were from a wide range of settings and diagnostic groups. All patients were from England, and so the survey was not fully representative of the UK (which is a limitation of this dataset, and one to address in future surveys to ensure representation from across the UK). Patients BMI also varied hugely, from a quarter of patients who were underweight and around a fifth of whom were obese. Nevertheless, importantly, the survey recorded a high prevalence of malnutrition (42%), higher than previous national surveys (35% in care homes; 29% in hospitals) (2,3). This may represent a genuine increase in malnutrition in England, maybe with changing demographics (age, disease prevalence etc), the season during which data was collected or potentially, a selective bias towards entering patients into the survey from groups at higher risk of malnutrition. A larger sample size, and guidelines on the criteria for screening to ensure representative samples, may help in future surveys.

This is the first BAPEN MAG survey that has linked malnutrition risk with nutritional care and the treatment options used. Encouragingly, a large proportion of patients were recorded as having a nutritional care plan. Use of food-based interventions for oral nutritional support was widespread (in two thirds of patients at risk of malnutrition), but not universal, with a range of dietary options in use. Only half of patients at high risk of malnutrition received ONS, most commonly using energy-dense, ready-made liquids and around 10% were being tube fed (<1% parenterally fed). Therefore, overall, it appears there is still room for improvement, at least from an oral nutritional support perspective, to make sure those at risk of malnutrition receive the nutritional care they require, particularly in light of the evidence and guidelines that highlight the benefits to clinical outcome and the health care system of doing so (4-6). Further larger surveys, undertaken over time, will ascertain how representative this picture of nutritional care is, and to benchmark changes and improvements in nutritional care occurring over time. The survey did not assess patient outcomes related to interventions, but this could be assessed in future surveys.

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Potential conflicts of interest

Dr Rebecca Stratton: Danone Specialised Nutrition; BAPEN received an unrestricted grant from Abbott Nutrition, Fresenius Kabi, and Nutricia Ltd to fund the development of the online screening portal.

Appendices

APPENDIX A

Invitation letter to participate in a National Survey of Malnutrition and Nutritional Care

MAG
Malnutrition Action Group
A Standing Committee of BAPEN

BAPEN
Putting patients at the centre of good nutritional care

September 2019

Re: Invitation to participate in a national survey of malnutrition and nutritional care during UK Malnutrition Awareness Week (14th-20th October 2019)

Please join BAPEN in undertaking the next national survey of malnutrition and nutritional care during Malnutrition Awareness Week (MAW2019).

We are asking for your help to get as many individuals working in health and social care settings to screen for malnutrition using 'MUST' and to record any nutritional care a person is given during MAW2019.

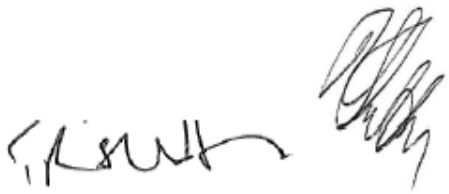
To help you collect all of your data, we have a new and simple system on the BAPEN website (www.bapen.org.uk; live from 23rd September) for individual professionals and organisations to use. The system allows you to quickly and easily input the screening results of each person in your care and information on the nutritional care they receive. There is a simple registration process, so that the system can then give you a summary of your own local data. The survey will also help BAPEN to get the national picture on malnutrition and nutritional care across the UK in 2019.

Wherever you work, please join us in this national initiative. For more information, and to register and take part, please see the BAPEN website:
https://www.bapen.org.uk/malnutrition-undernutrition/combating-malnutrition/malnutrition-awareness-week.

Follow us on twitter @BAPENUK and please also reference #MAW2019 in any tweets.

Thanks so much for your support and we really look forward to working with you.

Yours faithfully,



Dr Rebecca Stratton, Chair, Malnutrition Action Group
Dr Trevor Smith, President, British Association for Parenteral and Enteral Nutrition (BAPEN)

BAPEN would like to acknowledge sponsorship from Abbott Nutrition, Fresenius Kabi and Nutricia Advanced Medical Nutrition in the development of the MAW19 screening portal.

BAPEN (British Association for Parenteral and Enteral Nutrition) is a Charitable Association that raises awareness of malnutrition and works to advance the nutritional care of patients and those at risk from malnutrition in the wider community. For more information about BAPEN, and UK MAW week please visit www.bapen.org.uk

APPENDIX B

Questionnaire

UK MAW 2019

Paper form for the National Survey of Malnutrition and Nutritional Care

Please complete each section and transfer to the electronic portal.

Part 1- Background Information

Where does the individual currently reside?

Hospital	
Community Hospital/Rehab Unit	
Own Home	
Care Home	
Mental Health Unit	
Other (Please state)	

Length Of Stay (**days**) (if applicable)	
Age	
Gender	

Disease category of primary diagnosis (choose 1)

Cancer	
Cardiovascular e.g CVD,CAD	
Frailty	
Gastrointestinal e.g. Crohns, Colitis (excluding cancer)	
Genito / Renal	
Musculoskeletal e.g. arthritis	
Neurological e.g. stroke, MND	
Respiratory e.g. COPD, CF	
No disease	
Other (please state)	

Part 2 – 'MUST' (all calculations of MUST will be automatic when this data is transferred to the portal)

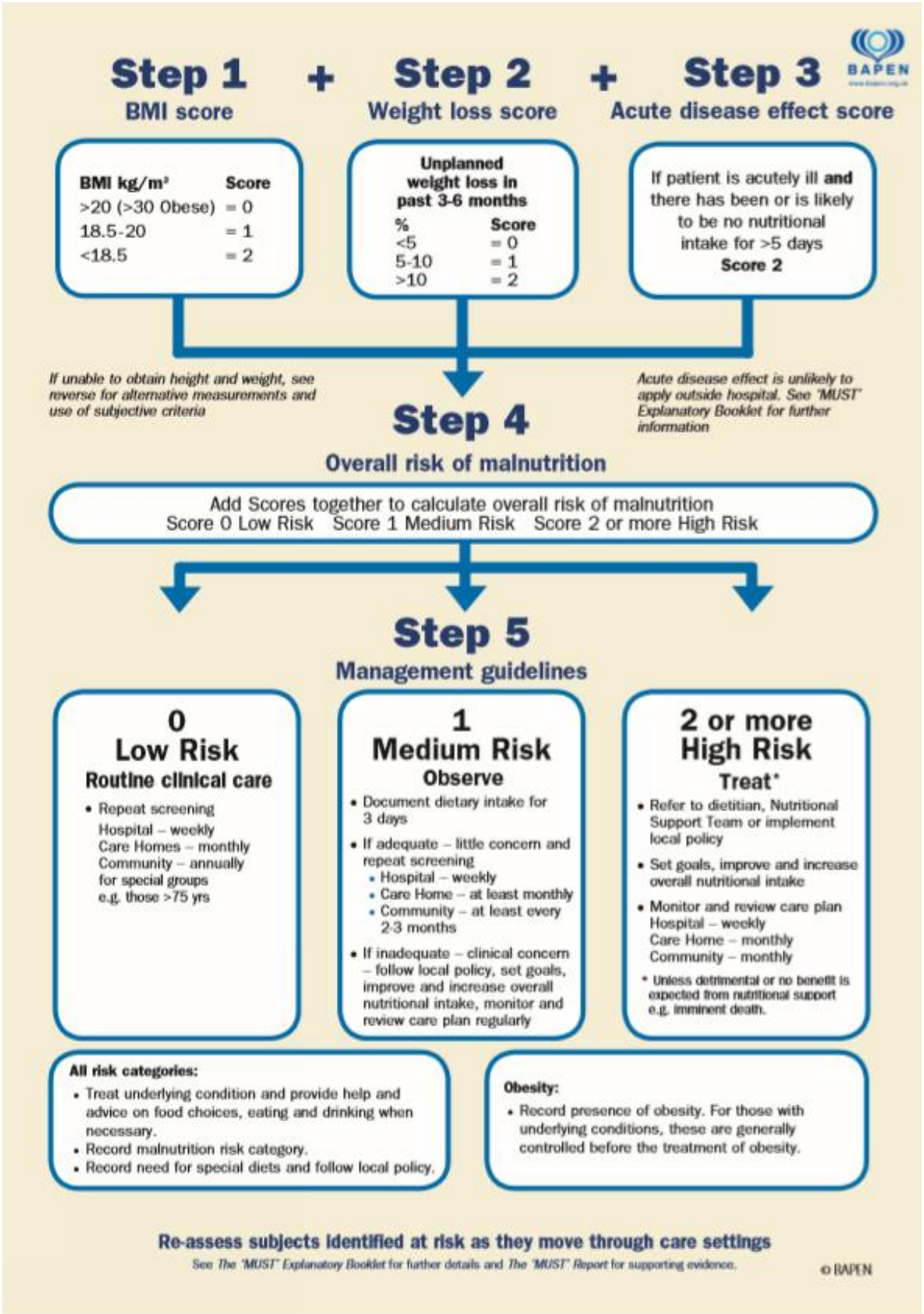
Current Weight *(metric or imperial)*	
Current Height *(metric or imperial)*	
Has the individual recently lost weight without trying?	Yes No
If yes to unintentional weight loss: **What was their previous weight or How much weight have they lost** *over the last 3-6 months (metric of imperial)*	
Is the individual acutely ill and has had (or likely to have) no nutritional intake for more than 5 days?	Yes No

Part 3 – Malnutrition Management Plan

Is there a care plan in place for the management of malnutrition?	Yes No Other – Please state
If Yes: please mark all treatment options that apply	
Food based intervention	Snacks Diet sheet Fortified foods with food ingredients Fortified foods with modular feeds Dietary counselling by dietitian Other (please specify)
Oral nutritional supplements	Ready-made liquid 1-1.5kcal/ml Ready-made liquid 1.6-2kcal/ml Ready-made liquid > 2kcal/ml Pre thickened Dessert style Powder Other (please specify)
Enteral Tube feeding	Continuous Bolus Energy density < 1kcal/ml Energy density 1-1.5kcal/ml Energy density 1.6-2kcal/ml Energy density >2kcal/ml Fibre containing Peptide/amino acid Blenderised diet Other (please specify)
Parenteral Nutrition	Yes No
If Yes: **Is PN managed by a nutrition support team** **Parenteral Nutrition route**	Yes No Cannula Central Line Peripheral Line Other (please specify
Other nutrition support option in care plan	
General comments on screening and management of malnutrition	

APPENDIX C

'MUST' (see www.bapen.org.uk to download, and for full resources)



APPENDIX D

Bedfordshire MAW Data Oct 2019

UK Malnutrition Awareness Week 2019

Date of report:	April 2020
Data collected:	14-20th October 2019
Data locality:	Bedfordshire
Number of individuals screened*:	n47

Background Information

Age[1]:	83.1(58-99) years
Gender:	F n36 (77%) M n11 (23%)
Setting:	
-hospital	/
-community hospital	/
-own home	/
-care home	47 (100%)
Length of Stay[1]:	993 (2-5655) days
Weight[1]:	68.3 (50-90) kg
BMI[1]:	26.2 (20.0-35.6) kg/m^2

[1] *mean (range)*

Primary Diagnosis:	(n47)
-Neurological	28
-Frailty	9
-Musculoskeletal	6
-Respiratory	2
-Cardiovascular	1
-Other	1

Malnutrition Screening ('MUST') Data

'MUST' Criteria	(n47)
BMI Score	
>20kg/m^2 (score 0)	47
18.5-20kg/ m^2 (score 1)	0
<18.5kg/ m^2 (score 2)	0
% Weight loss score	
<5% (score 0)	42
5-10% (score 1)	2
>10% (score 2)	2
Acute disease effect score	
No (score 0)	46
Yes (score 2)	1

'MUST' Classification	(n47)
Malnutrition Risk	
-Low (total score = 0)	43 (92%)
-Medium (total score =1)	1 (2%)
-High (total score ≥ 2)	3 (6%)

'Low risk' of malnutrition 92% (n43)

'At risk' of malnutrition 8% (n4)

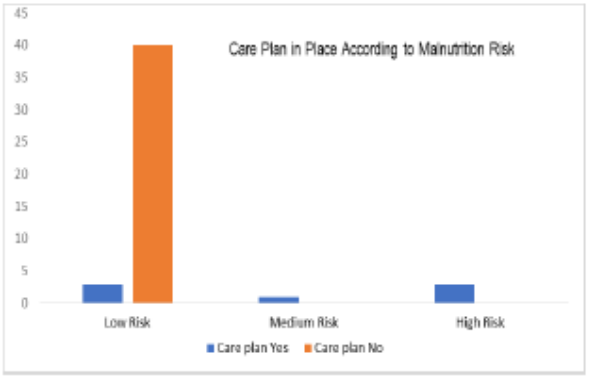
('At risk' is medium and high combined)

Care Plans

Care Plan in place? (%):	YES n7 (15%)
	NO n40 (85%)
Of those that had a care plan in place[2]	
-Food Based plan	7
-ONS based plan	7
-Enteral feed	0

'At risk' individuals only (n4)	
Care Plan in place? (%):	YES n4 (100%)
	NO n0 (0%)
Of those that had a care plan in place[2]:	
-Food Based plan	4
-ONS based plan	4
-Enteral feed	0

[2] *it is possible to have more than 1 type of care plan*



Please consider the sample size in relation to your total population before drawing specific conclusions. If the sample size is small, it is probable that this data may not be representative of your area.

APPENDIX E

Greater London MAW Data Oct 2019

UK Malnutrition Awareness Week 2019

Date of report:	April 2020
Data locality:	Greater London
Data collected:	14-20th October 2019
Number of individuals screened*:	n77

Background Information

Age[1]:	74.2 (118-100) years
Gender:	F n48 (62%) M n29 (38%)
Setting:	
-hospital	20 (26%)
-community hospital	8 (10%)
-own home	26 (34%)
-care home	23 (30%)
Length of Stay[1]:	39.4 (9-180) days
Weight[1]:	53.7 (31.8-104.) kg
BMI[1]:	19.7 (13.7-34.2) kg/m^2

[1] *mean (range)*

Primary Diagnosis:	(n77)
-Neurological	33
-Respiratory	11
-Other	7
-Falls/fractures	6
-Frailty	4
-Cancer	4
-Cardiovascular	4
-Gastrointestinal	4
-Wound Care	2
-No disease	2

Malnutrition Screening ('MUST') Data

'MUST' Criteria	(n77)
BMI Score	
>20kg/m^2 (score 0)	31
18.5-20kg/ m^2 (score 1)	16
<18.5kg/ m^2 (score 2)	30
% Weight loss score	
<5% (score 0)	38
5-10% (score 1)	22
>10% (score 2)	17
Acute disease effect score	
No (score 0)	76
Yes (score 2)	1

'MUST' Classification	(n77)
Malnutrition Risk	
-Low (total score = 0)	17 (22%)
-Medium (total score =1)	17 (22%)
-High (total score ≥ 2)	43 (56%)

'Low risk' of malnutrition 22% (n17)

'At risk' of malnutrition 78% (n60)

('At risk' is medium and high combined)

Care Plans

Care Plan in place? (%):	YES n75 (97%)
	missing n2 (3%)
Of those that had a care plan in place[2]	
-Food Based plan	65
-ONS based plan	50
-Enteral feed	22

'At risk' individuals only (n60)	
Care Plan in place? (%):	YES n60 (100%)
	NO n0 (0%)
Of those that had a care plan in place[2]:	
-Food Based plan	54
-ONS based plan	42
-Enteral feed	11

[2] *it is possible to have more than 1 type of care plan*

*Please consider the sample size in relation to your total population before drawing specific conclusions.
If the sample size is small, it is probable that this data may not be representative of your area.*

APPENDIX F

Hampshire MAW Data Oct 2019

UK Malnutrition Awareness Week 2019

Date of report:	April 2020
Data collection:	14-20th October 2019
Data locality:	Hampshire
Number of individuals screened*:	n75

Background Information

Age[1]:	66.5 (19-99) years
Gender:	F n26 (35%) M n49 (65%)
Setting: -hospital -own home -community hospital -care home	 64 (85%) 11 (15%) / /
Length of Stay[1]:	13.5 (1-289) days
Weight[1]:	76.8 (45-157) kg
BMI[1]:	26.8 (16.1-57.6) kg/m^2

[1] *mean (range)*

Primary Diagnosis:	(n75)
-Cancer	20
-Frailty	18
-Falls/Fracture	1
-Vascular	7
-Respiratory	2
-Wound care	1
-Cardiovascular	7
-Musculoskeletal	5
-Neurological	3
-Other	11

Malnutrition Screening ('MUST') Data

'MUST' Criteria	(n75)
BMI Score	
>20kg/m^2 (score 0)	68 (91%)
18.5-20kg/ m^2 (score 1)	6 (8%)
<18.5kg/ m^2 (score 2)	1 (1%)
% Weight loss score	
<5% (score 0)	58 (77%)
5-10% (score 1)	6 (8%)
>10% (score 2)	6 (8%)
Acute disease effect score	
No (score 0)	68 (91%)
Yes (score 2)	7 (9%)

'MUST' Classification	(n75)
Malnutrition Risk	
-Low (total score = 0)	53 (71%)
-Medium (total score =1)	9 (12%)
-High (total score ≥ 2)	13 (17%)

'Low risk' of malnutrition 71% (n53)

'At risk' of malnutrition 29% (n22)

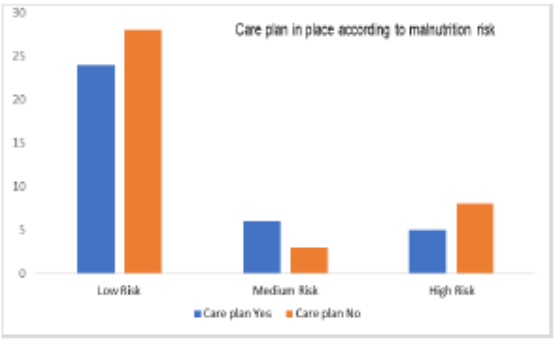
('At risk' is medium and high combined)

Care Plans

Care Plan in place? (%):	YES n35 (47%)
	NO n39 (52%)
Of those that had a care plan in place[2]	
-Food Based plan	16
-ONS based plan	10
-Enteral feed	1

'At risk' individuals only (n22)	
Care Plan in place? (%):	YES n11 (50%)
	NO n11 (50%)
Of those that had a care plan in place[2]:	
-Food Based plan	7
-ONS based plan	5
-Enteral feed	1

[2] *it is possible to have more than 1 type of care plan*



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APPENDIX G

Hertfordshire MAW Data Oct 2019

UK Malnutrition Awareness Week 2019

Date of report:	April 2020
Data date of collection:	14-20th October 2019
Data locality:	Hertfordshire
Number of individuals screened*:	n109

Background Information

Age[1]:	88.3 (69-102) years
Gender:	F n61 (56%) M n48 (44%)
Setting:	
-hospital	/
-community hospital	/
-own home	1 (1%)
-care home	108 (99%)
Length of Stay[1]:	/
Weight[1]:	61.2 (37.8-127.8) kg
BMI[1]:	23.4 (16.1-40.8) kg/m^2

[1] *mean (range)*

Primary Diagnosis:	(n109)
-No disease	93
-Frailty	10
-Other	4
-Neurological/stroke	2

Malnutrition Screening ('MUST') Data

'MUST' Criteria	(n109)
BMI Score	
>20kg/m^2 (score 0)	77
18.5-20kg/ m^2 (score 1)	13
<18.5kg/ m^2 (score 2)	19
% Weight loss score	
<5% (score 0)	84
5-10% (score 1)	18
>10% (score 2)	6
Acute disease effect score	
No (score 0)	108
Yes (score 2)	1

'MUST' Classification	(n109)
Malnutrition Risk	
-Low (total score = 0)	65 (60%)
-Medium (total score =1)	15 (14%)
-High (total score ≥ 2)	29 (26%)

'Low risk' of malnutrition 60% (n65)

'At risk' of malnutrition 40% (n44)

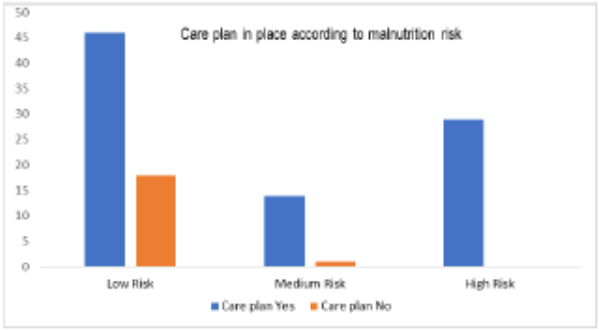
('At risk' is medium and high combined)

Care Plans

Care Plan in place? (%):	YES n89 (82%)
	NO n19 (18%)
Of those that had a care plan in place[2]	
-Food Based plan	33
-ONS based plan	1
-Enteral feed	0

'At risk' individuals only (n44)	
Care Plan in place? (%):	YES n43 (98%)
	NO n1 (2%)
Of those that had a care plan in place[2]:	
-Food Based plan	30
-ONS based plan	0
-Enteral feed	0

[2] *it is possible to have more than 1 type of care plan*



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APPENDIX H

Merseyside MAW Data Oct 2019

UK Malnutrition Awareness Week 2019

Date of report:	April 2020
Data colletion:	14-20th October 2019
Data locality:	Merseyside
Number of individuals screened*:	n87

Background Information

Age[1]:	62.1(21-90) years
Gender:	F n36 (41%) M n51 (59%)
Setting: -hospital -community hospital -own home -MHU	 / / 64 (74%) 23 (26%)
Length of Stay[1]:	60.5 (5-154) days
Weight[1]:	79.0 (43.5-143.8) kg
BMI[1]:	27.8 (17.9-41.7) kg/m^2

[1] *mean (range)*

Primary Diagnosis:	(n87)
-Cancer	64
-Mental Health	15
-Neurological (stroke)	7
-Other	1

Malnutrition Screening ('MUST') Data

'MUST' Criteria	(n87)
BMI Score	
>20kg/m^2 (score 0)	84
18.5-20kg/ m^2 (score 1)	2
<18.5kg/ m^2 (score 2)	1
% Weight loss score	
<5% (score 0)	77
5-10% (score 1)	6
>10% (score 2)	3
Acute disease effect score	
No (score 0)	87
Yes (score 2)	0

'MUST' Classification	(n87)
Malnutrition Risk	
-Low (total score = 0)	76 (87%)
-Medium (total score =1)	7 (8%)
-High (total score ≥ 2)	4 (5%)

'Low risk' of malnutrition 87% (n76)

'At risk' of malnutrition 13% (n11)

('At risk' is medium and high combined)

Care Plans

Care Plan in place? (%):	YES n7 (8%)
	NO n80 (92%)
Of those that had a care plan in place[2]	
-Food Based plan	6
-ONS based plan	6
-Enteral feed	1

'At risk' individuals only (n11)	
Care Plan in place? (%):	YES n3 (27%)
	NO n8 (73%)
Of those that had a care plan in place[2]:	
-Food Based plan	4
-ONS based plan	3
-Enteral feed	0

[2] *it is possible to have more than 1 type of care plan*

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APPENDIX I

Staffordshire MAW Data Oct 2019

UK Malnutrition Awareness Week 2019

Date of report:	April 2020
Data collected:	14-20th October 2019
Data locality:	Staffordshire
Number of individuals screened*:	n197

Background Information

Age[1]:	70.1 (20-98) years
Gender:	F n110 (56%) M n87 (44%)
Setting: -hospital -community hospital -own home -care home	 197 (100%) / / /
Length of Stay[1]:	13.6 (1-254) days
Weight[1]:	73.4 (31.6-177) kg
BMI[1]:	26.9 (15.2-59.4) kg/m^2

[1] *mean (range)*

Primary Diagnosis:	(n197)
-Cancer	36
-Cardiovascular	36
-Gastrointestinal	36
-Frailty	17
-No disease	14
-Other	14
-Neurological	13
-Respiratory	12
-Falls/fracture	12
-Renal	7

Malnutrition Screening ('MUST') Data

'MUST' Criteria	(n197)
BMI Score	
>20kg/m^2 (score 0)	176
18.5-20kg/ m^2 (score 1)	10
<18.5kg/ m^2 (score 2)	11
% Weight loss score	
<5% (score 0)	175
5-10% (score 1)	12
>10% (score 2)	5
Acute disease effect score	
No (score 0)	184
Yes (score 2)	13

'MUST' Classification	(n197)
Malnutrition Risk	
-Low (total score = 0)	158 (80%)
-Medium (total score =1)	15 (8%)
-High (total score ≥ 2)	24 (12%)

'Low risk' of malnutrition 80% (n158)

'At risk' of malnutrition 20% (n39)

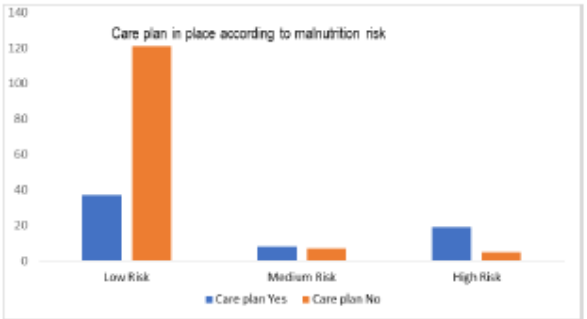
('At risk' is medium and high combined)

Care Plans

Care Plan in place? (%):	YES n64 (83%)
	NO n133 (67%)
Of those that had a care plan in place[2]	
-Food Based plan	40
-ONS based plan	48
-Enteral feed	16

'At risk' individuals only (n39)	
Care Plan in place? (%):	YES n27 (69%)
	NO n12 (31%)
Of those that had a care plan in place[2]:	
-Food Based plan	17
-ONS based plan	22
-Enteral feed	3

[2] *it is possible to have more than 1 type of care plan*



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If the sample size is small, it is probable that this data may not be representative of your area.*

APPENDIX J

Surrey MAW Data Oct 2019

UK Malnutrition Awareness Week 2019

Date of report:	April 2020
Data collected:	14-20th October 2019
Data locality:	Surrey
Number of individuals screened*:	n72

Background Information

Age[1]:	77.6 (32-97) years
Gender:	F n47 (65%) M n25 (35%)
Setting:	
-hospital	72 (100%)
-community hospital	/
-own home	/
-care home	/
Length of Stay[1]:	11.9 (1-101) days
Weight[1]:	62.6 (35.5-132.0) kg
BMI[1]:	22.8 (13.9-42.1) kg/m^2

[1] *mean (range)*

Primary Diagnosis:	(n72)
-Neurological	12
-Cancer	12
-Gastroenterology	11
-Cardiovascular	10
-Frailty	9
-Other	6
-Respiratory	5
-No disease	5
-Endocrinology	1
-Falls/fractures	1

Malnutrition Screening ('MUST') Data

'MUST' Criteria	(n72)
BMI Score	
>20kg/m^2 (score 0)	44
18.5-20kg/ m^2 (score 1)	10
<18.5kg/ m^2 (score 2)	18
% Weight loss score	
<5% (score 0)	37
5-10% (score 1)	19
>10% (score 2)	13
Acute disease effect score	
No (score 0)	62
Yes (score 2)	10

'MUST' Classification	(n72)
Malnutrition Risk	
-Low (total score = 0)	21 (29%)
-Medium (total score =1)	18 (25%)
-High (total score ≥ 2)	33 (46%)

'Low risk' of malnutrition 29% (n21)

'At risk' of malnutrition 71% (n51)

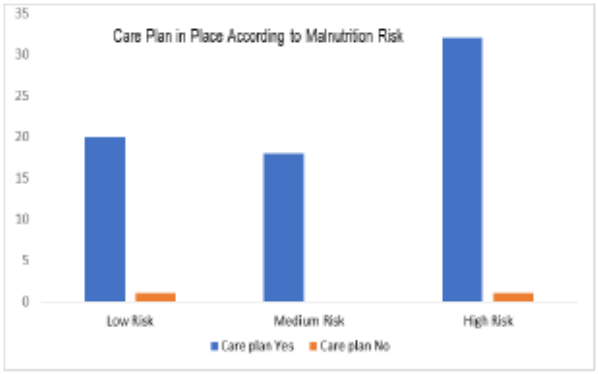
('At risk' is medium and high combined)

Care Plans

Care Plan in place? (%):	YES n70 (97%)
	NO n2 (3%)
Of those that had a care plan in place[2]	
-Food Based plan	64
-ONS based plan	55
-Enteral / Parenteral feeds	11 / 1

'At risk' individuals only (n51)	
Care Plan in place? (%):	YES n50 (98%)
	NO n1 (2%)
Of those that had a care plan in place[2]:	
-Food Based plan	46
-ONS based plan	43
-Enteral / Parenteral feeds	1 / 1

[2] *it is possible to have more than 1 type of care plan*



Please consider the sample size in relation to your total population before drawing specific conclusions. If the sample size is small, it is probable that this data may not be representative of your area.

APPENDIX K

Tyne and Wear MAW Data Oct 2019

UK Malnutrition Awareness Week 2019

Date of report:	April 2020
Data collected:	14-20th October 2019
Data locality:	Tyne and Wear
Number of individuals screened*:	n440

Background Information

Age[1]:	78.6 (18-101) years
Gender:	F n270 (61%) M n170 (39%)
Setting: -hospital -care home -own home	 241 (55%) 168 (38%) 31 (7%)
Length of Stay[1]:	19.5 (0-195) days
Weight[1]:	63.5 (29.5-135) kg
BMI[1]:	23.7 (10.6-56.3) kg/m^2

[1] *mean (range)*

Primary Diagnosis:	(n440)
-Frailty	188
-Neurological/stroke	68
-Cancer	50
-Respiratory	28
-Cardiovascular	21
-Gastro-intestinal	19
-Falls/fractures	17
-No disease	15
-Endocrine (e.g. diabetes)	8
-Other	26

Malnutrition Screening ('MUST') Data

'MUST' Criteria	(n440)
BMI Score	
>20kg/m^2 (score 0)	293
18.5-20kg/ m^2 (score 1)	46
<18.5kg/ m^2 (score 2)	101
% Weight loss score	
<5% (score 0)	315
5-10% (score 1)	59
>10% (score 2)	45
Acute disease effect score	
No (score 0)	383
Yes (score 2)	57

'MUST' Classification	(n440)
Malnutrition Risk	
-Low (total score = 0)	204 (46%)
-Medium (total score =1)	58 (13%)
-High (total score ≥ 2)	178 (41%)

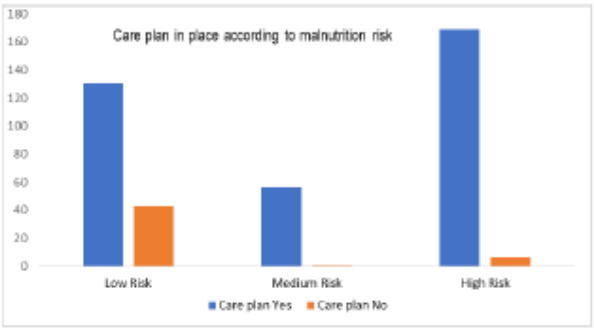
'Low risk' of malnutrition 46% (n204)

'At risk' of malnutrition 54% (n236)

('At risk' is medium and high combined)

Care Plans

Care Plan in place? (%):	YES n387 (88%)
	NO n51 (12%)
Of those that had a care plan in place[2]	
-Food Based plan	220
-ONS based plan	155
-Enteral / Parenteral feeds	47 / 1



'At risk' individuals only (n236)	
Care Plan in place? (%):	YES n226 (96%)
	NO n10 (4%)
Of those that had a care plan in place[2]:	
-Food Based plan	157
-ONS based plan	120
-Enteral / Parenteral feeds	35 / 1

[2] *it is possible to have more than 1 type of care plan*

**Please consider the sample size in relation to your total population before drawing specific conclusions. If the sample size is small, it is probable that this data may not be representative of your area.*

APPENDIX L

West Midlands MAW Data Oct 2019

UK Malnutrition Awareness Week 2019

Date of report:	April 2020
Data collected:	14-20th October 2019
Data locality:	West Midlands
Number of individuals screened*:	n104

Background Information

Age[1]:	75.6 (2-98) years
Gender:	F n59 (57%) M n45 (43%)
Setting:	
-hospital	92 (88%)
-community hospital	12 (12%)
-own home	/
-care home	/
Length of Stay[1]:	31.9 (1-208) days
Weight[1]:	68.9 (41.6-114.3) kg
BMI[1]:	25.4 (17.3-41.3) kg/m^2

[1] *mean (range)*

Primary Diagnosis:	(n104)
-Neurological	49
-No disease	13
-Falls/Fracture	10
-Frailty	7
-Respiratory	7
-Wound care	7
-Cardiovascular	4
-Musculoskeletal	3
-Other	3
-Cancer	1

Malnutrition Screening ('MUST') Data

'MUST' Criteria	(n104)
BMI Score	
>20kg/m^2 (score 0)	89
18.5-20kg/ m^2 (score 1)	9
<18.5kg/ m^2 (score 2)	6
% Weight loss score	
<5% (score 0)	98
5-10% (score 1)	5
>10% (score 2)	1
Acute disease effect score	
No (score 0)	104
Yes (score 2)	0

'MUST' Classification	(n104)
Malnutrition Risk	
-Low (total score = 0)	84 (80%)
-Medium (total score =1)	14 (14%)
-High (total score ≥ 2)	6 (6%)

'Low risk' of malnutrition 80% (n84)

'At risk' of malnutrition 20% (n20)

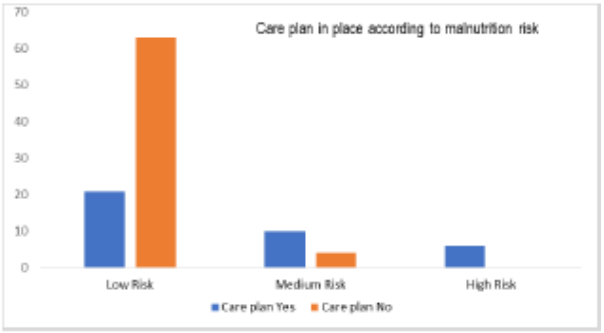
('At risk' is medium and high combined)

Care Plans

Care Plan in place? (%):	YES n37 (36%)
	NO n67 (64%)
Of those that had a care plan in place[2]	
-Food Based plan	28
-ONS based plan	23
-Enteral feed	2

'At risk' individuals only (n20)	
Care Plan in place? (%):	YES n16 (80%)
	NO n4 (20%)
Of those that had a care plan in place[2]:	
-Food Based plan	14
-ONS based plan	13
-Enteral feed	1

[2] *it is possible to have more than 1 type of care plan*



*Please consider the sample size in relation to your total population before drawing specific conclusions.
If the sample size is small, it is probable that this data may not be representative of your area.*

Putting patients at the centre of good nutritional care

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