Screen and TREAt for Malnutrition (STREAM)

Feasibility Study Protocol

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Protocol authorised by:

Name: Prof. Paul Little **Role:** Chief Investigator

Signature: **Date:** 02.10.17

Confidentiality Statement

This document contains confidential information that must not be disclosed to anyone other than the Sponsor, the Investigator Team, host organisation, and members of the Research Ethics Committee, unless authorised to do so.

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FUNDER

This trial is funded by NIHR PGfAR

Protocol Information

This protocol describes the STREAM feasibility study and provides information about procedures for entering subjects. The protocol should not be used as a guide for the treatment of other subjects; every care was taken in its drafting, but corrections or amendments may be necessary. These will be circulated to investigators in the trial, but sites entering subjects for the first time are

advised to contact the study team at **Primary Care and Population Sciences** to confirm they have the most recent version.

Compliance
This study will adhere to the principles outlined in the International Conference on Harmonisation Good Clinical Practice (ICH GCP) guidelines. It will be conducted in compliance with the protocol, the Data Protection Act and all other regulatory requirements, as appropriate.

Table of Contents

1 List of Abbreviations

BCT	Behaviour Change Techniques
BMI	Body Mass Index
CI	Chief Investigator
CTCAE	Common Terminology Criteria for Adverse Events
DI	Digital Intervention
DMEC	Data Monitoring and Ethics Committee
EQ-5D-5L	'EuroQol – 5 Dimensions – 5 Levels' health status instrument
FFQ	Food Frequency Questionnaire
GDS4	Geriatric Depression Scale, 4 item
GP	General Practitioner
HCP	Healthcare Professional
ICC	Intraclass Correlation Coefficient
ICMJE	International Committee of Medical Journal Editors
MST	Malnutrition Screen and Treat
MUST	Malnutrition Universal Screening Tool
NCI	National Cancer Institute
NHS	National Health Service
NIHR	National Institute for Health Research
PCPS	Primary Care and Population Sciences
PCRN	Primary Care Research Network
PGfAR	Programme Grants for Applied Research
QIPP	Quality, Innovation, Productivity and Prevention
R&D	Research & Development
REC	Research Ethics Committee
SAE	Serious Adverse Event
SF-36	RAND 36-Item Health Survey Instrument
SMD	Standardized Mean Difference
SNAQ	Simplified Nutritional Appetite Questionnaire
SOP	Standard Operating Procedure
SSI	Site Specific Information
TMG	Trial Management Group
TSC	Trial Steering Committee
TUGT	Timed Up and Go test

1.1 Keywords

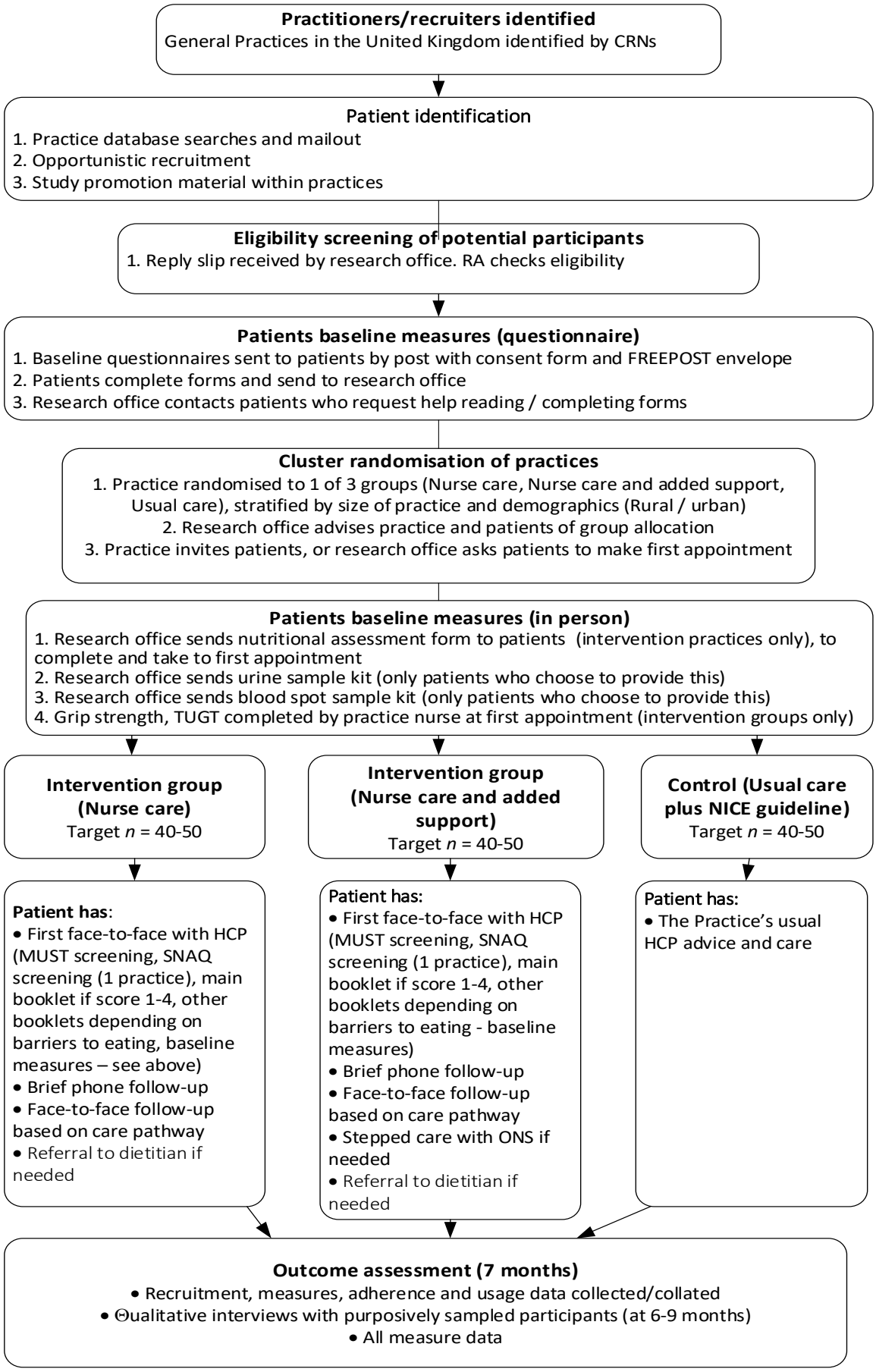
Malnutrition risk, Patient information, Quality of life, Digital intervention, Malnutrition screen and treat

2 Trial Synopsis

Title:	**Screen and TREAt for Malnutrition (STREAM) Programme Feasibility study**
Sponsor:	University of Southampton
Sponsor Ref Number:	253810
Funder:	NIHR PGfAR
Trial phase:	Intervention feasibility study phase 2/3
Indication:	Risk of Malnutrition
Primary Objective:	An evaluation of feasibility for the planned randomised controlled trial
Subsidiary Objectives:	**An evaluation of feasibility in terms of:** 1. Suitability of recruitment screening methods and estimation of recruitment rates, 2. Acceptability of all trial procedures, including measures and follow-up, 3. Acceptability of the intervention (assessed by uptake, usage, qualitative feedback from patients and HCPs, including factors related to engagement and adherence), 4. Appropriateness and acceptability of HCP support provided to patients (uptake, number of phone / face to face appointments, qualitative feedback from patients and HCPs), 5. Acceptability of leaflet/electronic information given to participants at baseline (qualitative feedback from patients) 6. Suitability of outcome measures at s month follow-up (i.e. which measures to include/remove for the full randomised trial), 7. Analysis of outcomes for power calculation to confirm target sample size for the trial, 8. Identify main resource use, feasibility of collecting main resource use, and testing whether SF36 is good instrument for quality of life measurements. 9. Developing decision analytic model alongside the feasibility study.
Trial design:	Feasibility study with nested qualitative interviews
Sample size (split by treatment group):	1. First tranche: 130-150 participants (40-50 per arm) 2. Second tranche: 750 participants (250 per arm) 3. Third tranche: 225 participants (75 per arm)
Inclusion Criteria:	1. First and second tranche of recruitment: patients will be aged ≥ 65 years AND have one or more of these major medical or social problem(s) increasing nutritional risk: (COPD; cerebrovascular disease; cardiac failure; CKD (stage IIIb/IV/V); chronic liver disease; Crohn's disease; hospital discharge in previous 2-3 months; Parkinson's disease; current depression; living alone). Approximately 80 of these patients will have been identified as at 'high risk' of malnutrition based on their responses to simple screening questions. 2. Third tranche of recruitment: patients will be aged ≥ 75 years AND have one or more of the major medical or social problem(s) increasing nutritional risk outlined above.

Exclusion Criteria:	1. Terminal disease 2. Ongoing primary treatment for cancer 3. Diabetes 4. Established dementia 5. Using oral nutritional supplements (ONS) 6. Established nutritional support 7. Unable to consent
Intervention	Eat well, feel well, stay well intervention
Control Group:	Usual care plus provision of **NICE guideline 32: Nutrition support for adults** to General Practices
Follow up duration	7 months
Total Number of Sites:	Between –20-25 sites (GP surgeries)
Relationship to full trial	The feasibility study quantitative analyses are descriptive. However, providing the trial goes ahead and no extensive changes are made to the intervention or trial procedures following the feasibility study, the data collected could be used retrospectively as an internal pilot, so taken forward for the full trial.

3 Participant flow diagram



4 Schedule of observations and procedures

Measure	Baseline /eligibility screening (Research team)	Baseline at visit 1 (General practice team)	7 month follow-up	After study period
Month	0			6-9 months
Patient socio-demographic measures	X			
HCP demographic measures	X			
Clinical measures: intervention groups at baseline, all groups at follow-up				
Weight		X	X	
Height		X	X	
Timed up and go test (TUGT)		X	X	
Grip strength		X	X	
Clinical measures – all groups				
Urine Sample (optional)	X (self-collect)		X	
Blood spot sample (optional)	X (self-collect)		X	
Patient self-report measures – all groups				
Weight	X		X	
Height	X		X	
Weight loss	X		X	
Number of usual medications	X		X	
Current/recent acute illness	X		X	
Vitamin / supplement use	X		X	
SF36 measure of quality of life	X		X	
SNAQ appetite questionnaire	X		X	
Food Frequency questionnaire	X		X	
Psychological measures (e.g. self-efficacy, outcome expectancy, perceptions of supporter, self-regulation)	X		X	
Patient demographics (after consent)				
Frailty (where available)	X (NR)			

HCP objectively recorded measures				
Usage of training pages				X*
Support provision				X*
Compliance to protocol				X*
Referral to dietician		X		
ONS provision		X		
HCP self-report measures				
e.g. Barriers, self-efficacy, outcome expectations	X		X	
Intervention implementation	X		X	
Confidence in the acceptability of the intervention	X		X	
Economic measures				
Patient quality of life (EQ-5D)	X		X	
Costs of equipment and drugs			X (NR)	
Health professional time			X (NR*)	
Patient time			X (NR*)	
Qualitative process analysis				
Patient experience and views				X**
HCP experience and views of intervention				X**

Key:

NR = Notes review

*Intervention groups only– measured via Lifeguide website and/or support log

**there will be a series of qualitative interviews between 2 and 9 months

5 Lay Summary

About 13% of older people living at home are at risk of malnutrition. This may be because they are not getting enough to eat, or because they are not eating enough of the right food.
We have developed what is known as an 'intervention', to help doctors and nurses in general practice to check if older adults who live at home are at risk of malnutrition. They can then offer support to those who need it. Our intervention, called 'Eat well, feel well, stay well', includes MUST (the Malnutrition Universal Screening Tool), booklets and other materials for older adults, and a support tool for health professionals. The support tool includes guidance about when to see patients and when to use oral nutritional supplements.

MUST was developed by experts at BAPEN http://www.bapen.org.uk/ . The rest of the intervention was developed by experts who looked at previous literature to find what helps or hinders older adults eating well, and what is likely to work best in general practice. The intervention was improved after feedback from people aged over 65 years, patients and healthcare professionals.

In the study, we aim to assess the feasibility and acceptability of the intervention. We will compare two versions of the intervention. One is a brief intervention with MUST screening, patient booklets and follow-up, called 'Nurse care'; the other version is called 'Nurse care and added support'. 'Nurse care and added support' means that patients will have the 'Nurse care' intervention plus oral nutritional supplements (ONS) for short spells when they are unwell. We will also follow a group of patients who have the usual care that is provided by their doctors' surgery. We will assess outcomes including change in eating patterns, weight and quality of life. The results of the feasibility study will help us to design a full trial. We will also compare patients and health professionals' experiences of being in these three different groups.

6 Study background

Malnutrition affects about 13% of older people living at home [1]. Malnutrition Screen and Treat (MST) policies have not been fully tested in primary care, but may be effective and cost-effective.

6.1 The problem: eating patterns and malnutrition

Eating patterns that result in insufficient intake of calories or nutrients can cause ill health, but may also develop due to ill health, particularly among people with long-term conditions [1]. Insufficient calorie and nutrient intake leads to loss of weight and strength, making people more susceptible to infections, falls, heart and breathing problems and worse mental health [1]. The combination of ageing processes and the increased likelihood of having one or more long-term conditions means that malnutrition is most common among older people and rises with age [2]. In 2006, the National Institute for Health and Care Excellence (NICE) noted that malnutrition was increasing as the number of older people increases [3]. A re-analysis of the National Dietary and Nutrition Survey (NDNS) suggested that 6.3% of people over 65 living at home are probably at moderate risk of malnutrition with 5.8% at high risk [4 5]. Nutrition risk and health outcomes were related, and in a 3 month period 58% of patients at low risk, 65.6% of patients at moderate risk and 71.7% of patients at high risk visited their GP. Also, 18.9% of low-risk patients were admitted to hospital over a year compared with 42.6% of people who were at high risk. These comparisons indicate that an effective intervention is needed to address nutrition risk among older people living at home, in order to improve patient outcomes and reduce healthcare use.

6.2 Identifying those at risk of malnutrition: Malnutrition Universal Screening Tool (MUST)

The Malnutrition Universal Screening Tool [6] is a checklist of the type recommended by NICE to identify people at risk of problems related to malnutrition [3]. Screening involves taking brief details of weight and height and calculating body mass index (BMI). People at risk of malnutrition are defined as any of the following:

- BMI less than 18.5 kg/m^2
- Unintentional weight loss greater than 10% within the last 3–6 months
- BMI less than 20 kg/m^2 plus unintentional weight loss greater than 5% within the last 3–6 months.

6.3 Malnutrition Screen and Treat (MST) strategies

The review which underpins NICE guideline 32 outlined limited evidence for malnutrition screen and treat strategies, particularly for older people living at home [1]. The reviewers found two controlled

before-after studies in hospital [7,8] and one cluster randomised controlled trial (RCT) in primary care from the USA [9]. In Jordan et al's (2003) study, recording of weight increased, and referral to dietitians decreased with MST, but no patient outcomes were reported [7]. In the other study, MST resulted in weight gains and less hospital acquired infections [8]. In the RCT, there were no improvements in malnutrition detection rate or nutrition intervention by health professionals [9]. The review authors concluded that current evidence is not strong enough to support MST and called for more high quality studies. NICE recommended Malnutrition Screen and Treat (MST) policies for hospitals, but recommended that further studies were needed in primary care [3].

More recent studies have shown promising short-term effects of interventions targeting malnutrition risk factors in the community. Beck and colleagues found that twelve weeks of home visits from dietitians after hospital discharge had a positive effect on functional and nutritional status [10]. In their RCT, Beck et al [11] found that multidisciplinary treatment of nutritional risk factors in older people in nursing homes and receiving home-care could have a positive effect on quality of life, muscle strength, and oral care over 11 weeks. Badia et al's Octabaix study [12], a RCT with 24 month follow-up in primary care in Spain, tested an intervention for older people which targeted potentially modifiable malnutrition risk factors. The intervention had a positive effect on nutritional status, though there were no significant differences in outcome between intervention and control group, longer-term benefits were less certain and the authors highlighted the need for preventive interventions.

6.4 Oral supplements to prevent or treat malnutrition

One intervention that has previously shown promise for malnutrition risk is the prescription of oral nutritional supplements (ONS). A review commissioned by NICE concluded that ONS were effective for older hospital patients, but ONS studies carried out in the community were small, included highly selected patients or were poorly designed, reducing confidence that ONS is effective outside the hospital setting [1].

Since the NICE recommendations [3], more studies have been published which suggest that nutrition interventions may be beneficial for people with eating patterns that put them at risk of malnutrition. An updated systematic review of studies with 3790 mostly older patients in mostly secondary care settings concluded that there were benefits from high protein supplements [13]. Benefits included reduced complications and less hospital admissions. Other benefits were increased weight, grip strength and energy and protein intake.

Two studies in the community have been completed since the NICE review [14,15]. Kim and Lee measured power, balance and strength, and Parsons and colleagues measured dietary intake and

quality of life, but health outcomes were not measured in either study. The researchers found that supplement use seemed to reduce the progression of functional decline [14], and appeared cost-effective in care homes [15]. However, it remains unclear whether supplements are effective for people living in their own homes.

In the UK, Department of Health expenditure on total oral nutrition is rising rapidly [16]. However, limited evidence of variable quality suggests that dietary advice with or without oral nutritional supplements may improve weight, body composition and grip strength [16]. Baldwin and Weekes recommend studies to test the effect of nutritional interventions on nutritional, functional and patient-centred outcomes. In our feasibility study, we will assess whether a stepped ONS protocol, based on patient needs, has any additional effect on patient outcomes when delivered alongside a brief lifestyle intervention in primary care.

6.5 Rationale for the present study

The key question is whether it is effective to screen home-living older people who live alone or have medical problems or have recently left hospital, identify those at high risk of malnutrition and then give them an oral nutritional supplement. Also, it is unclear what type of nutritional support is most effective and cost-effective. Although it may be simplest to give diet advice to patients, giving supplements to those who need them most may have more benefit. Targeted use of ONS would mean first giving supplements when people have less appetite due to illness. This would be followed by more systematic, escalating of regular ONS use as needed. This strategy may cost more but be more effective.

In our feasibility study, we will test an MST intervention delivered by HCPs in primary care. This will target people at low, medium and high risk of malnutrition, thereby addressing the need for prevention as well as treatment. Participants will receive a brief lifestyle intervention, iteratively developed with input from patients and HCPs. The authors of the studies described above provided no evidence of the iterative development needed for complex interventions, and we know how important this is from previous successful studies in our group [17]. In one arm of the study, we will test a targeted and stepped protocol of ONS prescription for patients with acute illness, such as flu, infections and COPD exacerbations. The protocol will allow for escalation or stopping ONS, based on patient needs.

5.6 Using the internet

LifeGuide is an open-source software package for creating interactive web-based interventions to support healthy behaviour [18]. Previous LifeGuide web-based interventions have been successfully

used to provide training for health care professionals to deliver effective interventions to patients, e.g. Antibiotic prescribing [19] and weight reduction [17]. We therefore anticipate that LifeGuide is likely to be an efficient, easy-to-use, acceptable way of providing training for healthcare professionals to deliver the 'Eat well, feel well, stay well' intervention.

The internet is now used successfully by older adults for disease self-management, [20] and may have a role in delivering the intervention materials that we are developing for patients. However, we are currently developing printed materials, as this is likely to be the most accessible medium for a broad older adult population with varying socio-demographic characteristics. We are exploring this assumption with participants during qualitative interviews.

7 Study Objectives

We aim to assess the feasibility of an intervention in primary care to encourage the use of malnutrition screen and treat (MST) policies for older people living in their own homes. The aim of the 'Eat well, feel well, stay well' intervention is to help staff in general practices to support behaviour change and improve the quality of life of older people who are at risk of malnutrition.

Main research question:

- Did the study meet the progression criteria (recruitment targets) set out in the funding proposal for the randomised controlled trial?

Secondary questions:

1. Suitability of recruitment screening methods and estimation of recruitment rates,
2. Acceptability of trial procedures, including measures and follow-up,
3. Acceptability of the intervention (assessed by uptake, usage, qualitative feedback from patients and HCPs, including factors related to engagement and adherence),
4. Appropriateness and acceptability of HCP support provided to patients (uptake, number of phone / face to face appointments, qualitative feedback from patients and HCPs),
5. Acceptability of booklets/electronic information given to participants at baseline (qualitative feedback from patients)
6. Suitability of outcome measures at six month follow-up (i.e. which measures to include/remove for the full trial),
7. Analysis of outcomes for power calculation to confirm target sample size for the trial,
8. Identify and feasibility in collecting main resource use, and testing whether SF36 is good instrument for quality of life measurements.
9. Developing decision analytic model alongside the feasibility study.

8 Study Design

The 'Eat well, feel well, stay well' intervention has been developed for the STREAM programme. 'Eat well, feel well, stay well' is a brief intervention, consisting of dietary advice and support from healthcare professionals in primary care. In the feasibility study we will compare the brief intervention (called 'Nurse care') with the brief intervention plus a stepped ONS protocol (called 'Nurse care and added support'), based on patient needs.

In the feasibility study we will:

1) **Explore the feasibility and acceptability** of the procedure for a planned randomised controlled study. The aim of the RCT will be to assess the effectiveness and cost-effectiveness of the of the 'Eat well, feel well, stay well' intervention vs 'Eat well, feel well stay well' plus stepped ONS vs usual care,
2) **Explore the feasibility** of procedures to identify and collect main resource use, and test whether SF36 is good instrument for quality of life measurements,
3) Develop a decision analytic model alongside the feasibility study to explore the potential implications of costs and cost effectiveness of the interventions,
4) **Undertake a qualitative process analysis study** embedded in the feasibility study.

All study design is provisional and subject to change for the trial, depending on outcomes of the feasibility study.

8.1 Outcome measures

The primary outcome of the RCT is likely to be difference in quality of life between the intervention groups and the usual care group. The appropriateness of this will be tested in the feasibility study, in addition to recruitment, attrition, and proportion of patients deemed at high risk of malnutrition.

Postal questionnaires at baseline and 7 month follow-up will take up to 30 minutes to complete. In person baseline measures will be taken by the practice nurse at first appointment. Optional baseline measures will be taken by patients (urine and / or blood spot sample). The **usual care (control group)** will complete questionnaires at baseline and 7 month follow-up, as for the intervention groups (proxy measures of malnutrition risk, SF-36, EQ-5D-5L, SNAQ appetite questionnaire, Food Frequency questionnaire, GDS4, psychological measures).

Feasibility data analysed after 3 months:

- Recruitment: uptake from invitation to screening; yield from flagging notes
- Attrition rates
- Percentage of participants in the high risk subgroup

Feasibility data analysed 7 months after randomisation:

- Recruitment: uptake from invitation to screening; yield from flagging notes
- Attrition rates
- Variance of change in SF-36 (the planned primary outcome for the full trial)
- Estimates of change in relevant behaviours
- Differences between groups of attained weight
- Percentage of participants in the high risk subgroup
- Healthcare professionals' website and / or app usage will be downloaded using Lifeguide software, with prior informed consent (training undertaken)
- Phone and / or face-to-face appointment attendance (from Support log)
- Care recommended (from Support log)
- Healthcare professionals' implementation assessment (online survey)

Baseline measures

Baseline measures: patient-reported:

- Proxy measures of malnutrition risk:
    - Current actual and/or estimated height and weight for BMI calculation,
    - Weight loss (eg. Looser clothing / rings / belts)
    - Current / recent acute illness (eg. Infections, COPD exacerbation, falls)
    - SNAQ appetite questionnaire (4 items) [21]
    - Food frequency questionnaire (20 items) [22]
- Demographic questionnaire, including: ONS (prescribed or over the counter), taking multivitamins, recent hospitalisation, spending on ONS, multivitamins and weekly spending on food,
- SF-36 as a measure of quality of life [23]. It is anticipated that physical quality of life will be the primary outcome in the full trial, but the mental domain of SF-36 will also be measured,
- Geriatric Depression Scale (GDS4) (4 items) [24],
- Psychological measures, informed by the logic model and participant feedback from the development phase of the study, e.g. self-efficacy, outcome expectancy, self-regulation,
- EQ-5D-5L as a measure of health status [25].

Baseline measures: practice nurse at first appointment:

- Timed up and go test (TUGT) [26 27],

- Grip strength, using a handgrip dynamometer (three measurements from both hands) [28]

Optional baseline measures (i.e. only for participants who would like to do this):

- Urine sample – three morning samples self-collected over 10 days and posted direct to lab,
- Blood spot sample (self-collected 1-5 spots on one occasion and posted direct to the lab)

NB. Samples are study outcome measures and results will not be reported to doctors' surgeries for clinical use

Data collected at 7 months follow-up:

Clinical measures: all groups (collected by Independent nurse)

- Weight
- Height
- Timed up and go test (TUGT)
- Grip strength

- Urine Sample (optional, self-collect at home)
- Blood spot sample (optional, self-collect at home)

All groups:

- Proxy measures of malnutrition risk:
    - Current actual and/or estimated height and weight for BMI calculation,
    - Weight change (eg. Looser or tighter clothing / rings / belts)
    - Current / recent acute illness (e.g. Infections, COPD exacerbation, falls)
- Demographic questionnaire, including: taking ONS (prescribed or over the counter over the last year), taking multivitamins, recent hospitalisation, spending on ONS and multivitamins and weekly spending on food,
- SF-36 as a measure of quality of life, particularly whether results correlate with EQ-5D-5L [23]. It is anticipated that physical quality of life will be the primary outcome in the full trial, but the mental domain of SF-36 will also be measured,
- SNAQ appetite questionnaire (4 items) [21]
- Food frequency questionnaire (20 items) [22]
- Geriatric Depression Scale (GDS4) (4 items) [24],
- Psychological measures, informed by the logic model from the development phase of the study (e.g. self-efficacy, outcome expectancy, self-regulation),
- EQ-5D-5L as a measure of health status [25].

Notes review:

- Demographic information: medical problem(s) increasing nutritional risk (COPD; cerebrovascular disease; cardiac failure; CKD (stage IIIb/IV/V); chronic liver disease; Crohn's disease; cystic fibrosis; recent hospital discharge; Parkinson's disease; current depression.
- Frailty (Read codes)
- Health service use covering primary care visits, A&E, outpatient attendance and hospitalisation and drugs, including ONS, details about recent hospitalisation

Additional assessment of the SNAQ questionnaire

There is concern that MUST screening alone does not deal adequately with poor appetite. Although MUST will remain our primary screening tool, it is possible to address the issue of appetite using the brief SNAQ screening questionnaire. We will therefore include the SNAQ questionnaire in the baseline questionnaire data in all practices. This will provide an estimate of how common SNAQ positive individuals (those scoring <+14) are in our cohort.

In addition we will assess the implications of intervening not just for MUST positive individuals (those scoring 1-4) but for individuals who are SNAQ positive. In addition to the main feasibility study practices, two practices will be randomised to use the SNAQ questionnaire at the practice appointment (i.e. in addition to MUST screening) and nutritional intervention will occur for participants who are MUST positive or SNAQ positive.

Thus the aim of using SNAQ is to:

1. Assess whether SNAQ can capture individuals who are at risk of malnutrition (e.g. as an alternative or addition to MUST, when weight/height measures are not possible etc)
2. Capture individuals who may be at risk of malnutrition but are not yet MUST positive

8.2 Assessing acceptability and Feasibility

During the feasibility study all aspects of the protocol will be assessed. This will include (but may not be limited to): study uptake, recruitment and follow-up procedures and patient engagement and adherence. Health care practitioner engagement with the intervention will also be assessed to ensure that essential components of the 'Eat well, feel well, stay well' intervention, such as nurse support and feedback, are acceptable and feasible, and that the health professionals support tool is usable and appropriate to facilitate the ability of staff to deliver the intervention according to the

study protocol. The acceptability and usability of the ONS protocol will also be assessed, from the perspective of patients and healthcare professionals.

8.3 Nested Qualitative Exploration

A sub-study (optional to participants) will provide qualitative data. At consent, patient participants will be asked to indicate whether or not they would be happy for the research team to contact them at a later date to take part in an interview (face-to-face or by phone). Of the participants who agree, 8-10 participants per intervention group (*n* = 24-30) will be purposively sampled (by age and gender) to take part in qualitative interviews after they have been randomly allocated to one of the intervention groups and have taken part in the study for at least 1-2 months. Participants will be invited to participate by the research team by phone or email. For face-to-face interviews, consent will be in person. For phone interviews, consent will be by post.

Interviews will consist of open-ended questions to elicit feedback about experiences of the booklets and the support participants have received. Each interview will last up to 90 minutes. These interviews will enable the research team to further assess acceptability and feasibility of the intervention and trial procedures and generate hypotheses about possible mechanisms of action, to be further assessed in the full trial. Participants in the usual care group will also be invited in the same way to participate in brief interviews to elicit qualitative feedback about any intervention or support they may have received.

We will hold focus group discussions, interviews in practices or phone interviews to elicit views of support providers, GPs and any other primary care staff significantly involved in trial procedures or intervention delivery.

8.4 Stop/Go Criteria for Main Trial

As specified in the research proposal and approved by the trial steering committee, although all aspects of feasibility will be considered, the provisional proposal is that progression for the randomised controlled trial will occur based on recruitment criteria:

- If recruitment exceeds 70% of the recruitment predicted, the main trial goes ahead (i.e. 10% agreeing of those invited or 40 patients entering the intervention trial)
- If recruitment is 50-70% of the recruitment predicted, then a discussion with PGfAR is instituted and, assuming a plan for increasing recruitment is credible, the trial proceeds with monthly recruitment updates, and withdrawal of funding should recruitment not pick up.

- If recruitment is <50% predicted there should be a discussion with the PGfAR Board and unless there is a very strong and credible plan to increase recruitment, progression to the main trial should be halted.

9 Participant Identification and Recruitment

We will recruit 140-150 patients (now adjusted to 750-800 patients),, including 80-100 patients 'at high risk' (i.e. with a MUST score of 1-4 based on proxy measures from baseline questionnaires). Eligible patients will be identified from around 20-25 general practices found by primary care research networks (PCRN). Practices will be selected to ensure that small and large, rural and urban, and practices with lower Index of Multiple Deprivation scores are represented. Lead GP(s) or nurse(s) will be identified at each site. Before any practice can begin recruitment a Lead GP or nurse must be identified.

The following documents must be in place and copies sent to the STREAM Trial Coordinator (TC) (contact details on page 2):

- A signed Study Agreement (PI and sponsor signature)
- Completed Delegation log outlining Roles and Responsibilities

Once the above documents are received and we are ready for the practice to start, the STREAM TC will send a green light email to the lead GP or nurse. A copy of this email must be filed in each centre's Site File. The practice will be able to begin recruiting patients in to the study once the providers have completed the online STREAM training components.

9.1 Practice and HCP identification

Screening

- Practice databases will be searched for eligible patients (see inclusion/exclusion criteria). Lists will be screened by GPs for exclusion criteria prior to mail out,
- Patients may be identified opportunistically during GP or nurse consultations,
- To aid opportunistic identification, staff may flag items relevant to the inclusion criteria in patients' notes,
- Study advertisements will be displayed in practices to alert eligible carers, or people they care for, about the study. Patients responding to the study advertisements will ask practice reception staff, or phone or email the research team, for further information. Patients who would like one,

will then be given or sent a study information pack (invitation letter, participant information sheet and reply slip) to complete and return to the research team.

9.2 Inclusion criteria

1. First and second tranche of recruitment: Patients aged ≥ 65 who are living alone or more major medical or social problem(s) known to increase nutritional risk. These are: Chronic Obstructive Pulmonary Disease (COPD); cerebrovascular disease, including stroke; cardiac failure; Chronic Kidney Disease (stage IIIb/IV/V); chronic liver disease; Crohn's disease; recent hospital discharge; Parkinson's disease; current depression).
   Third tranche of recruitment: Patients aged ≥ 75 who are living alone or more major medical or social problem(s) known to increase nutritional risk, as listed above.
2. English needs to be good enough to understand the study materials, as funding for the feasibility trial does not allow for translation.

9.3 Exclusion Criteria

Participants will be excluded if they:

- Are using ONS,
- Have terminal disease,
- Are having ongoing primary treatment for cancer,
- Have diabetes
- Have established dementia (this group would be substantially different mandating involvement of the carers, and different outcomes),
- Are receiving established nutritional support,
- Are unable to consent.

10 Registration and Randomisation Procedures

10.1 Screening and Eligibility Assessment

Letters of invitation, participant information sheets and reply slips will be sent from the practice via Docmail (a mail-merge style service) to potential participants. Further screening for eligibility is conducted by the research team if the participant decides to participate and returns the reply slip, (which includes brief eligibility screening criteria). The duration between participants being informed of the study and their consenting will be at least as long as it takes for the reply slip to be returned and the questionnaire pack to be sent out. If participants do not want to be sent further information, they will have the option to indicate their reasons on the reply slip. If participants would like help to

complete study documents (e.g. consent form or questionnaires), they will have the option to indicate this on the reply slip.

Anonymised demographic data (age, gender, post-code) on non-responders will be collected from GP practices to allow us to check whether participants are representative of our target population.

10.2 Consent

Consent will be sought from participants by post, unless they indicate on the reply slip that they would like help with the form, in which case a research assistant will phone participants to talk through the consent form. Consent forms, along with baseline questionnaires will be sent to eligible participants who indicate on their reply slip that they would like to take part. A research assistant will phone participants who have requested help to complete forms, and talk through the baseline questionnaire with them. Participants will be asked to contact the research team if they have any questions (clear contact details will be included in study documents). Participants will be asked to return the completed consent form to the research team with a completed baseline questionnaire.

The consent form will include three optional statements:

1. Agreement that participants may be contacted later by the research team for nested qualitative interview participation. Patients who agree to take part in the interviews will be asked to sign a further consent form prior to the interview, after they have had any questions answered by a researcher.
2. Agreement that participants would like to provide 3 urine samples over a week, at baseline and at 7 months
3. Agreement that participants would like to provide 1-5 blood spot samples on one occasion at baseline and at 7 months.

10.3 Randomisation, blinding and code-breaking

Cluster randomisation of Practices will be carried out systematically once patients' completed baseline questionnaires are received by the research office, to reduce the likelihood of selection bias.

Practices will be allocated to one of the three arms:

1. Brief 'Eat well, feel well, stay well' intervention (this arm is called 'Nurse care')
2. Stepped care intervention (Brief 'Eat well, feel well, stay well' plus ONS according to protocol), (this arm is called 'Nurse care and added support'),
3. Usual care.

Participants will be stratified by age (e.g. 65-74; 75-84; and ≥ 85) and gender, as we anticipate there may be differences in how the intervention works for younger and older elderly people, and men and women. At the point of consent patients will be blind to Practice allocation. All patients who consent at one Practice will receive the same intervention.

The research team will contact participants by letter, email or phone about which group they are assigned to. Patients assigned to one of the two intervention arms will also be sent a nutritional assessment form to complete and take to their first appointment. The research team will also alert the patient's GP surgery. The research team or surgery will contact patients by letter, email or phone, to arrange appointments, or the patient will be asked to make an appointment with their GPs surgery. Where possible staff will address barriers to attendance. For example, patients can be offered a screening appointment at home if they are unable to attend the doctor's surgery and if it is practicable for the practice to offer this.

10.4 Baseline questionnaire

If participants return an incomplete baseline questionnaire, the research team will request by letter that at least the eligibility screening questions and the primary outcome measure are completed. Participants will be offered phone support if needed. If the questionnaire is not returned, the research team will phone once to ask if the participant has any questions or if help is needed.

10.5 Follow-up measures

All high risk participants will be asked for a 7 month follow up. All other participants will be randomly selected to participate in the follow ups. Anyone not selected will get a letter thanking them for their participation but stating that no further information is needed.
Those Participants selected to be followed up, will be reminded to complete follow-up measures by the research team by letter, email or phone or will be contacted by the surgery. Participants will receive up to three reminders to complete the follow-up measures, after which it will be assumed that they no longer wish to participate in the study if they do not respond. If the participant indicates that they would not be willing to complete further measures, no further contact will be made regarding follow-ups.

Each participant that is followed up will be sent a £10 high street gift voucher with the initial reminder to complete the 7-month follow-up questionnaire. They will receive the voucher regardless

of further participation. The usual care group will be given access to the patient leaflets and other materials after the end of follow-up.

11 Intervention and Group Details

The intervention is branded: “Eat well, feel well, stay well”.

11.1 Staff support tool

The brief training provided by the support tool will be completed by all staff before delivering the intervention. The tool will be accessed online using Lifeguide software [29] [18] [30]. Components include a malnutrition screen and treat (MST) care pathway, how to carry out screening using MUST, the CARE approach to support and encourage patients [31], and when and how to prescribe oral nutritional supplements (ONS). An MST kit will be provided, including charts to use with MUST, printouts of key pages from the support tool, and folders, leaflets and other materials to offer to patients.

11.2 Usual care group

Participants will continue to have the normal existing medical support provided by their GP surgery. The Practice will be provided with a link to the online version of NICE guideline 32, ‘Nutrition support for adults: oral nutrition support, enteral tube feeding and parenteral nutrition’. Practices will be alerted if the guidelines are updated.

11.3 Brief intervention group (called ‘Nurse care’)

Patients will be screened by a health professional using the Malnutrition Universal Screening Tool (MUST). Patients with a MUST score of 1-4 will be assessed for underlying problems using a nutritional assessment proforma, and referred where necessary. In one Practice, patients will also be screened using the Simplified Nutritional Appetite Questionnaire (SNAQ). Patients with a SNAQ score of ≤14 will be assessed for underlying problems using the nutritional assessment proforma.
Patients will be offered printed booklets addressing their needs, a brief phone follow-up, and brief face-to-face appointments with a practice nurse at intervals, depending on their MUST score.
Patients may be referred to a dietitian for further assessment, depending on their MUST score, health and eating status.

Patient booklets

Six patient booklets will be available:

1. Main booklet to encourage change in eating patterns,

2. Goal booklet, with techniques to support patients in planning, carrying out and maintaining change in eating patterns,
3. Four optional booklets, targeting specific barriers to making a change in eating patterns that have been identified from qualitative studies and interviews with older people.

Health professionals will provide all patients with a MUST score of 1-4 with the main booklet and goal booklet. They will also support patients in choosing optional booklets most relevant to their circumstances, and support patients in thinking about and carrying out the advice provided in the booklets.

11.4 Brief intervention with stepped approach to prescribing oral nutritional supplements (ONS)) (called 'Nurse care and added support')

11.5

Participants in the stepped care group will have the brief intervention as described in 11.3 and will also be prescribed oral nutritional supplements (ONS) if needed, based on a protocol. For example, patients with a MUST score of 3 and an acute illness such as an infection or COPD exacerbation will be prescribed ONS for two weeks; patients with a MUST score of 4 (high risk) will be prescribed ONS for three months, and the prescription will be reviewed at their next Practice appointment. The ONS we use will be a 'complete high protein supplement' from one of the established suppliers to healthcare organisations, care homes and supermarkets (supplier to be confirmed). This type of supplement is produced to help people who have difficulty eating enough nutritious food, for example when they are unwell. In one Practice, patients will also be screened using the SNAQ.

See Appendix A for a detailed diagram, incorporating TiDIER guidelines [32].

11.6 Serious Adverse Events

11.6.1 Definitions

Adverse Event (AE): any untoward medical occurrence in a patient or clinical trial subject which does not necessarily have a causal relationship with trial treatment or participation.

Serious Adverse Event (SAE): any untoward medical occurrence or effect that at any dose:

- Results in death
- Is life-threatening – refers to an event in which the subject was at risk of death at the time of the event; it does not refer to an event which hypothetically might have caused death if it were more severe
- Requires hospitalisation, or prolongation of existing inpatients' hospitalisation
- Results in persistent or significant disability or incapacity
- Is a congenital anomaly or birth defect

Medical judgement should be exercised in deciding whether an AE is serious in other situations. Important AE that are not immediately life-threatening or do not result in death or hospitalisation but may jeopardise the subject or may require intervention to prevent one of the other outcomes listed in the definition above, should also be considered serious.

11.6.2 Causality

Assignment of causality to trial procedures of any serious event should be made by the investigator responsible for the care of the subject using the definitions in the table below.

If any doubt about the causality exists the local investigator should inform the STREAM trial coordinator who will notify the Chief Investigator. Other clinicians may be asked for advice in these cases.

In the case of discrepant views on causality between the investigator and others, all parties will discuss the case. In the event that no agreement is made, the Ethics Committee will be informed of both points of view.

Relationship	Description
Unrelated	There is no evidence of any causal relationship
Unlikely	There is little evidence to suggest there is a causal relationship (e.g. the event did not occur within a reasonable time after following suggestions in the intervention). There is another reasonable explanation for the event (e.g. the subject's clinical condition, other concomitant treatment).
Possible	There is some evidence to suggest a causal relationship (e.g. because the event occurs within a reasonable time after following suggestions in the intervention). However, the influence of other factors may have contributed to the event (e.g. the subject's clinical condition, other concomitant treatments).
Probable	There is evidence to suggest a causal relationship and the influence of other factors is unlikely.
Definitely	There is clear evidence to suggest a causal relationship and other possible contributing factors can be ruled out.

11.6.3 Reporting procedures

Any AE that meets the serious criteria should be reported.

11.6.4 Non-serious Adverse Events

Pre-planned hospitalisation e.g. for pre-existing conditions which have not worsened or elective procedures for a pre-existing condition will not be classed as an SAE.

11.6.5 Serious Adverse Events (SAEs)

The assessment of whether or not an SAE is an expected consequence of receiving the intervention will be provided by the Chief Investigator (or Clinical Reviewer Delegate), it will not be provided by the Investigator responsible for the care of the participant. **All serious adverse events should be reported**. Depending on the nature of the event, the reporting procedures outlined in this protocol should be followed. Any queries concerning serious adverse event reporting should be directed to the trial coordination centre in the first instance. Reporting procedures are as follows:

- GPs or nurses will be asked to **notify us via an SAE form** if a participant experiences any SAEs.
- The Sponsor and main Research Ethics Committee (REC) will be informed of all related SAEs occurring during the trial according to the following timelines, where day zero is defined as the date the SAE form is initially received:
    - Events which are fatal or life-threatening will be reported no later than 7 calendar days after the sponsor is first aware of the reaction. Any additional relevant information must be reported within a further 8 calendar days.
    - Events that are non-fatal or non-life-threatening will be reported within 15 calendar days of the sponsor first becoming aware of the reaction.
- All Investigators will be informed of all related SAEs occurring throughout the trial. Local Investigators should report any SAEs as required by their Local Research Committee and/or Research and Development Office.

11.7 Assessment and follow-up of participants

Measures will be administered for all participants at baseline and 7 months, unless otherwise stated (see Schedule of Observations and Procedures). Clinical outcomes will be assessed by the practice nurse or healthcare assistant at baseline and by an independent research nurse at 7 months. Patient-reported outcome measures will be completed and returned to the research office by post. Non-respondents will receive three reminders by post, email or phone. Website usage (STREAM measures) will be recorded automatically in Lifeguide.

An independent research nurse, blind to study allocation will complete the in-person follow-up assessments. All patients (including withdrawn participants who have consented to follow-up appointments) will follow the procedure outlined below:

- Approximately three weeks before the follow-up appointment is due, the patient will be sent a letter by the research team encouraging them to arrange an appointment with the research nurse. Patients will be either asked to ring the study co-ordinator or the research nurse will ring the

patient directly, to arrange the follow up appointment. Appointments may be scheduled to take place in the patients' home or usual GP practice. At the 7-month follow-up, this letter will also include a £10 participation voucher.

- If the patient does not contact the research team to arrange an appointment within two weeks of the letter being sent the patient will be followed up by telephone.
- The research team or research nurse will send confirmation of the follow-up appointment to the patient.
- If the patient indicates that they would not be willing to complete a follow-up, no further contact will be made with the patient regarding the follow-up appointment.

11.7.1 Discontinuation/Withdrawal of Participants from Study

Participants have the right to withdraw from the study at any time. In addition, the Investigator may discontinue a participant from the study at any time if the Investigator considers it necessary for any reason including:

- Withdrawal of consent,
- Loss to follow up (i.e. no further contact when attempting to alert participant to follow-up measure timeframe),
- Terminal illness, diagnosis of dementia, diagnosis of diabetes.

If a participant withdraws having completed the baseline questionnaires, their data will be retained to evaluate potential differences and reasons for attrition.

All patients who withdraw from the intervention will be asked if they are prepared to do one or more of the following: attend a follow-up appointment with the research nurse; complete self-report follow-up measures at the end of the study; take part in a qualitative interview; allow their notes to be included in a notes review. If they agree to any of these activities, they will be invited according to the follow-up procedure.

11.7.2 Definition of End of Study.

The end of study is the date of the last follow-up of the last participant.

12 Statistics and Analysis

12.1 Description of Statistical Methods

SPSS, Stata and Excel software will be used to evaluate outcomes.

12.2 The Number of Participants

A formal sample size is not required for a feasibility study. However, we will aim to recruit 41-50 participants per group (usual care, brief intervention, stepped care intervention). This will provide sufficient data in order to assess the progression criteria and to check the assumptions underlying the sample size calculation for the larger planned trial including the number of patients recruited per practice and the variability of the proposed primary outcome measure.

12.3 Analysis of Outcome Measures/Endpoints

The primary analysis will determine whether the study has met the Stop-Go criteria and will therefore describe the proportion of participants recruited. The method of recruitment (opportunistic versus mail-out) will also be described.

Data for the secondary analyses will be explored descriptively and graphically for the other key feasibility outcomes including the intervention uptake, adherence, attrition, retention and the number of participants recruited per practice. We will explore the sensitivity to change of the key outcome measures, including any relevant subscales, and estimate the variability for the proposed primary outcome measure, the SF-36.

The feasibility study **is not** currently planned as an internal pilot, as there are several uncertainties that need to be assessed before confirming the content of the planned full trial. However, provided that the Stop/Go criteria have been met and the proposed trial goes ahead with few changes compared to the feasibility study, data collected during the feasibility study could be considered for inclusion in the analysis of the full trial data.

All participant data will be analysed, including those who have withdrawn, unless the participant specifically requests that their data be removed from the data set. All participants will be analysed on an intention to treat basis, i.e. as randomised. The analysis will be of complete cases only and missing data will not be imputed. The pattern and frequency of missing data will be explored descriptively in the feasibility context to determine whether there are whole instruments or items on instruments that participants opted not to complete.

12.4 Health economic analyses

The health economic study will focus on the following four aspects:

1. Estimating the costs of the interventions,
2. Identifying and feasibility of collecting resource usage data,
3. Testing feasibility of using SF36 to measure quality of life in the study patient groups,

4. Developing a decision analytic model.

It aims to develop and refine the methods for collecting resource use. The main resource usage will focus on costs of screening, costs of assessments and potential resource implication for the NHS including primary care visits, outpatient attendance, A&E visits and hospitalisation. The former will be collected and identified through qualitative studies with staff and patients, the latter will be extracted through case note review. Societal costs will be collected through a questionnaire covering informal care and out-pocket spending related to malnutrition conditions. This questionnaire will be developed and tested during the feasibility study. Quality of life will be measured by SF36 and we will translate it to SF6D. Utility scores will be derived from the SF6D. We will also measure quality of life with the EQ-5D-5L instrument, to help decide whether SF-36 and / or EQ-5D-5L should be used in the definitive trial.

The economic analysis of both costs and quality of life will be mainly descriptive and will be presented as means and standard deviations. Correlation of utility scores with MUST score bands will be analysed to see if there is evidence of sensitivity in the quality of life scores with the main outcomes. The focus will be the direction of correlation and spread and confidence intervals. Such information will allow us to estimate the costs of intervention and also investigate the most relevant resource use of information.

For the modelling based study, we will develop a decision analytic model alongside the feasibility study. The modelling will composite two stages. The initial stage will be a decision tree representing screening and assessment. The second stage will be a microsimulation model based on Markov Modelling framework. Health states will be defined by MUST scores as indicated in the patient's treatment pathway. Individual patients will carry their baseline characteristics (age, gender, comorbidities and initial MUST score as defined in the trial population). Patients will face different probabilities whether they will stay in the same MUST score bands or improve, worsen to next bands. The transitional probabilities from one state to another states will be derived from the trial. At a given health state (MUST score band), patient will face different risks of dying and hospitalisation. Information which is not available from the feasibility study will be extracted from literature review. The model will be develop and redefined during the feasibility study. The model will indicate the potential costs and costs effectiveness of the interventions compared with control group at difference levels of support and ONS supplement.

12.5 Qualitative Transcription and analysis

Feasibility study interviews and focus groups will be audio-recorded (where applicable) and transcribed verbatim to allow for fidelity checks, to ensure the acceptability and feasibility of support, and to inform potential intervention modification before the main trial. At this point the transcriptions will be anonymised (identifiable data removed) and participants' transcripts will be given pseudonyms so that they can be easily discussed between team members while protecting participants' identities. To ensure that we remain open to and grounded in users' perspectives we will carry out inductive thematic analysis of all textual data [33], triangulated where appropriate with diary and web usage data, and with discussion among team members (including our PPI representatives) to reach inter-rater agreement on themes and elaborate our interpretations [33], of the acceptability of this intervention and changes that should be made to improve it. Themes will then be related to the theoretical frameworks informing our intervention planning (i.e. Normalisation Process Theory and the Behaviour Change Wheel).

13 Data Management

13.1 Access to Data

Access will be granted to authorised representatives from the Sponsor or host institution for monitoring and/or audit of the study to ensure compliance with regulations.

13.2 Data Recording and Record Keeping

Data collection will be via file download from secure websites (Lifeguide). Manual data will be input into secure databases by research staff, and filed in locked filing cabinet(s) in a locked room at University of Southampton. Anonymised data will be retained for a period of 10 years after publication and thereafter destroyed. Data with personal information will be deleted after the study period and write-up are complete (maximum 3 years after study end).

14 Quality Assurance Procedures

The study may be monitored, or audited in accordance with the current approved protocol, relevant regulations and standard operating procedures.

15 Ethical and Regulatory Considerations

As with many intervention studies, there is the potential to cause distress simply by raising worrisome topics. In this particular intervention, we will focus on diet-related issues, which may be sensitive for some people. To address this, there is a statement in the participant information suggesting that if participants feel distressed, they can talk to a friend, family member, their GP or a charity such as Age UK. Participation and engagement with the intervention are optional and participants can avoid it if they choose to.

Another potential concern is that some participants may change their behaviour in an unhealthy manner (e.g. too much poor quality food). As with any intervention, there is the potential for participants to do too much, or, 'overdo' the ideas and tasks supplied. Therefore, the designers of the content have included encouragement to set realistic goals which are tailored to the needs of the individual. In the booklets patients are also advised to discuss changes with their GP or nurse.

Before starting the study, participants are informed that they can withdraw at any time without giving a reason. Usual care practices (and therefore participants) will be given access to 'Eat well, feel well, stay well' once their study participation has ended.

15.1 Declaration of Helsinki

The Investigator will ensure that this study is conducted in accordance with the principles of the Declaration of Helsinki.

15.2 Guidelines for Good Clinical Practice

The Investigator will ensure that this study is conducted in accordance with relevant regulations and with Good Clinical Practice.

15.3 Approvals

The protocol, informed consent form, participant information sheet and any proposed advertising material will be submitted to appropriate Research Ethics Committees (REC), Health Research Authority (HRA) and host institution(s) for written approval. The Investigator will submit and, where necessary, obtain approval from the above parties for all substantial amendments to the original approved documents.

15.4 Reporting

The CI shall submit once a year throughout the study, or on request, an Annual Progress report to the REC Committee, host organisation and Sponsor. In addition, an End of Study notification and final report will be submitted to the same parties.

15.5 Participant Confidentiality

The study staff will ensure that the participants' anonymity is maintained. The participants will be identified only by initials and a participants ID number. All documents will be stored securely and only accessible by study staff and authorised personnel. The study will comply with the Data Protection Act, which requires data to be anonymised as soon as it is practical to do so.
There will be no storage of samples so The Human Tissue Act will not be applicable.

15.6 Expenses and Benefits

Practice staff will receive staff support costs for their time spent supporting patients during this study. The online training module for practice staff will be supplied free of charge to those taking part in the research. Patient participants will receive a £10 gift voucher with their follow-up reminder. Participants who also take part in the qualitative interviews will each receive a further £10 gift voucher for their time.

16 Finance and Insurance

16.1 Funding

Funding for this study is provided by the NIHR.

16.2 Insurance

The University has a specialist insurance policy in place which would operate in the event of any persons suffering harm as a result of their involvement in the research.

17 Publication Policy

The Investigators will be involved in reviewing drafts of the manuscripts, abstracts, press releases and any other publications arising from the study. Authors will acknowledge that the study was funded by the NIHR. Authorship will be determined in accordance with the ICMJE guidelines and other contributors will be acknowledged.

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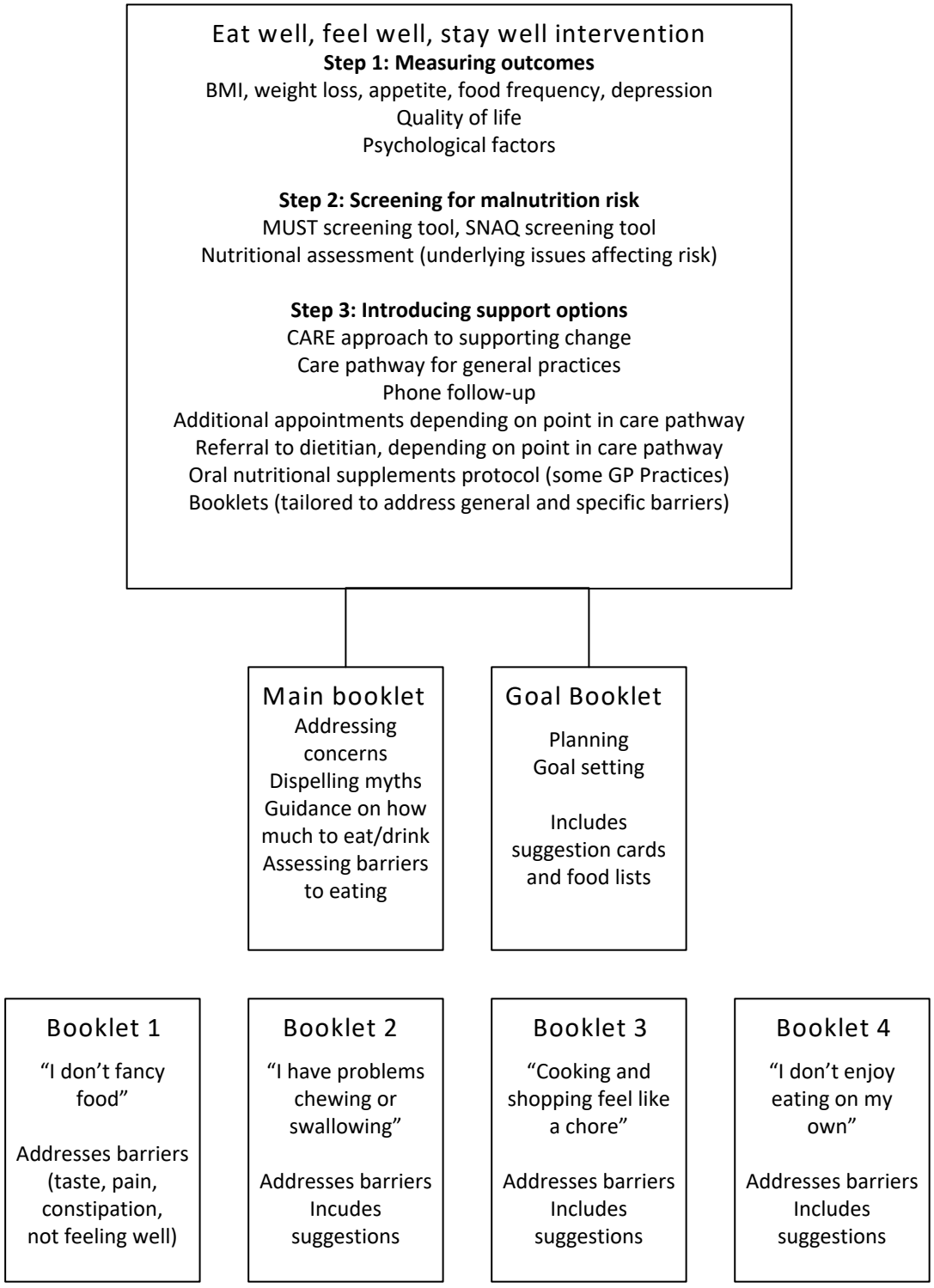
20 Appendix A: Eat well, feel well, stay well Intervention Outline



21 Appendix B: Timeline for Eat well, feel well, stay well: Feasibility study

Updated 11 November 2018

	Dec 2017	**Jan 2018**	**Feb 2018**	**Mar 2018**	**Apr 2018**	**May 2018**	**June 2018**	**July 2018**	**Aug 2018**	**Sept 2018**
	Month 1	*Month 2*	*Month 3*	*Month 4*	*Month 5*	*Month 6*	*Month 7*	*Month 8*	*Month 9*	*Month 10*
Practice recruitment (1st tranche)										
Search and mail-out (1st tranche)										
Patient recruitment (1st tranche)										
Intervention live										
6 month outcome measures start										
Qualitative interviews (patients)										
Qualitative interviews (Health professionals)										

	Oct 2018	**Nov 2018**	**Dec 2018**	**Jan 2019**	**Feb 2019**	**Mar 2019**	**Apr 2019**	**May 2019**	**June 2019**	**July 2019**
	Month 11	*Month 12*	*Month 13*	*Month 14*	*Month 15*	*Month 16*	*Month 17*	*Month 18*	*Month 19*	*Month 20*
Practice recruitment (2nd tranche)										
Search and mail-out (2nd tranche)										
Patient recruitment (2nd tranche)										
Intervention live (continued)										
6 month outcome measures										
12 months feasibility study ends (1st tranche of participants)										
Qualitative interviews (patients)										
Qualitative interviews (Health professionals)										
Post-study										
Summarising data										
Reporting trial										
Planning / ethics for main trial										