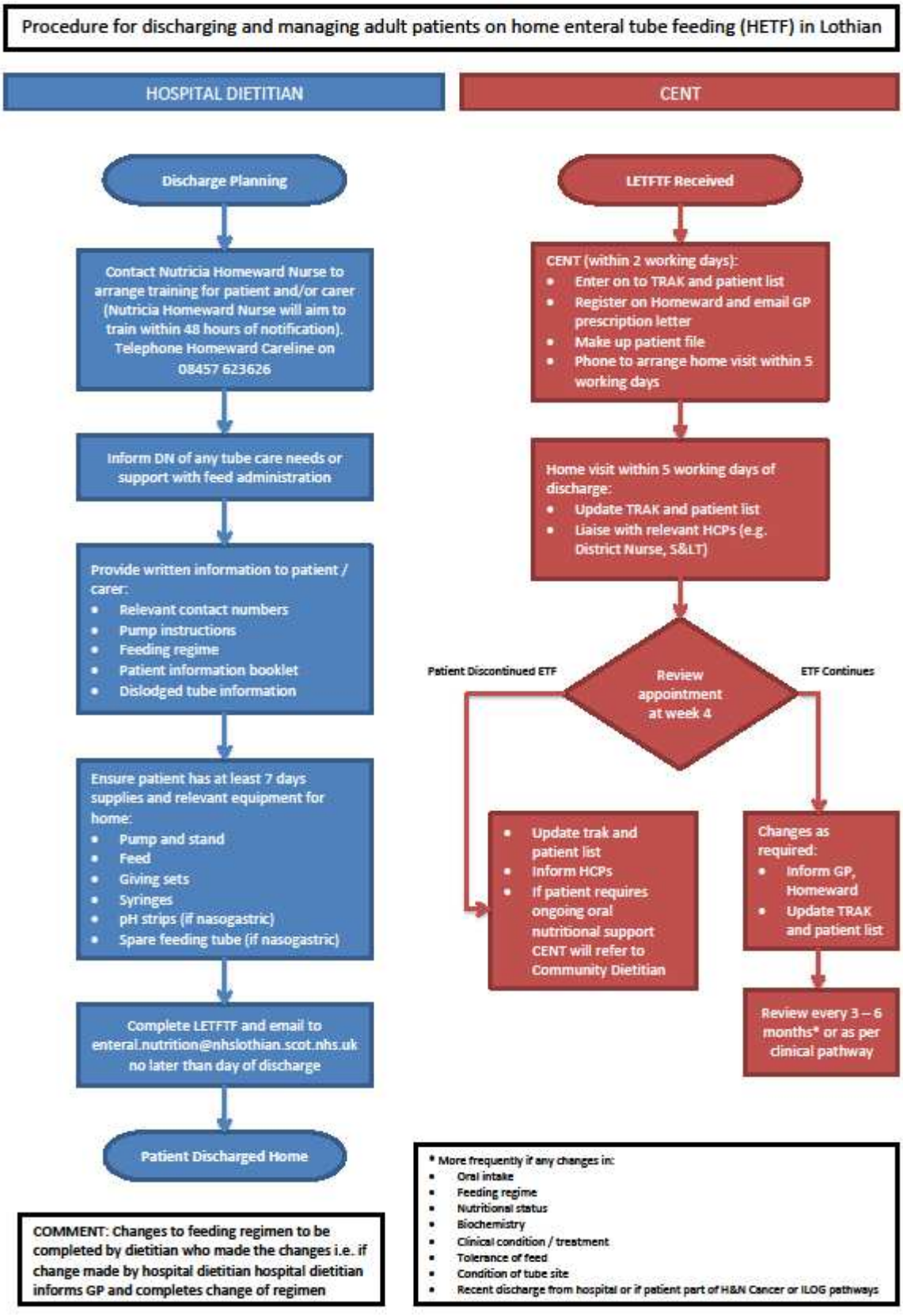
DISCHARGE PLANNING AND MONITORING

ISSUE	STATEMENT	EVIDENCE / REFERENCE
Discharge Procedure	Prior to discharge careful consideration should be given to ensure patients can be discharged home safely on enteral tube feeding. This includes identifying who will be responsible for daily care of tube, set up of the feed and relevant training to patient/parent/carers/care staff should be provided. All paediatric patients will be seen by Childrens' Community Nursing. **Complex patients who require community nursing input should be identified as early as possible in the discharge planning process to ensure the home enteral tube feeding is sustainable.** A multidisciplinary discharge planning meeting may be required including appropriate community staff. **It is essential that all patients/carers are fully aware and have written information regarding the procedure if the feeding tube displaced.** Appendix 1 Adult Discharge Flowchart Appendix 2 Adult Discharge checklist Appendix 3 Paediatric Discharge Planning for Home Enteral Tube Feeding Patients	http://intranet.lothian.scot.nhs.uk/NHSLothian/Healthcare/A-Z/CNT/Protocols/Management%20of%20dislodged%20%20G%20tube%20flowchart%20NPSA%20flowchart%20(PATIENT).xls http://intranet.lothian.scot.nhs.uk/NHSLothian/Healthcare/ClinicalGuidance/Documents/Management%20of%20dislodged%20%20G%20tube%20flowchart%20NPSA%20flowchart%20(STAFF).xls
Monitoring	Healthcare professionals should review the indications, route, risks, benefits and goals of nutrition support at regular intervals Appendix 4 Adult Monitoring in hospital Appendix 5 Adult Post discharge monitoring Appendix 6 Paediatric monitoring guidance	NICE (2006) Nutrition Support for Adults Oral Nutrition Support, Enteral Tube Feeding and Parenteral Nutrition Y Lim, CE Paxton, DC Wilson (2012) Regular nutritional blood test monitoring in children on home enteral tube feeding – is this necessary? Gut 2012; 61 (Suppl. 2): A17.
Procedure for Transition of Paediatrics to Adults	Appendix 7 Transitions procedure	

Appendix 1: Procedure for discharging and managing adult patients on home enteral tube feeding (HETF) in Lothian



Appendix 2

Adult home enteral feeding discharge checklist

Patients Name …… CHI……

Planned Discharge Date …….. Hospital & Ward……..

D = Dietitian N = Ward Nurses P = Pharmacist CN = Company Nurse

	Accountability	Initial	Date
Referred to Enteral Feed Company Nurse	D		
District Nurse referral if appropriate	N		
CENT referral (LETF Transfer form)	D		
Train patient on:			
Infection control e.g:- Hand hygiene	CN/N		
How to check the Nasogastric tube position	CN/N		
Correct positioning for feeding	CN/N		
How to flush their tube	CN/N		
How to administer medication(s)	CN/N		
How to set up their feed – pump or bolus	CN/N		
How to care for their feeding tube	CN/N		
How to care for their stoma site	CN/N		
Mouthcare	CN/N		
Storing feed	CN		
What to do if their tube falls out	CN/D		
Discharge Planning – The patient will require			
Pump and Pump Stand	D		
Feed – 7 day supply	D		
Feeding Regimen	D		
Patient information booklet including contact numbers	CN/D		
Medication Regimen	N/P		
Giving sets – 7 day supply	D		
Enteral syringes – 7 day supply	N/D		
Spare tube – if appropriate	N/CN/D		
pH indicator paper – Nasogastric only	N/D		
Information for delivery of future supplies	CN		
Written information identifying who to contact if their tube is displaced	N/D		

Appendix 3: Paediatric Discharge Planning for Home Enteral Tube Feeding Patients

Decision made by medical staff to commence home enteral tube feeding

Nursing staff in ward area to ensure appropriate teaching guidelines given to families. These must be completed and signed by nursing staff prior to discharge. Some families may require to attend the Special Feeds Kitchen prior to discharge, dietitian to advise.

Lothian, Glasgow & Argyle, Dumfries, Aberdeen & Forth Valley

Contact Nutrition nurse specialist on 20612, bleep 9313 or GI nurse specialist on 20602, bleep 9034 to arrange pump training. Contact Dietitian to advise 20302. If bolus feeding only and no pump training required, homeward service is not used.

Borders, Fife, Dundee & Lanarkshire patients

Wishaw dependant on follow up RHSC dietitian to clarify

Training on ward provided by **Nutricia**

Training on ward provided by **Abbott**

EQUIPMENT REQUIRED FOR DISCHARGE

Pump/Stand/ Bag – provided by GI/Nutrition nurse, either Z frame or Go frame

Giving sets and containers – 2/7 supply from Nutricia trainer

Feed bag – if using Z frame, ward to supply 7/7, if using Go frame, Nutricia will supply 2/7

A 7/7 supply of 50ml syringes and pH sticks – provided by ward

Tube feed – 7/7 supply provided by Dietitian

Milk Feed – 7/7 supply provided by Dietitian

EQUIPMENT REQUIRED FOR DISCHARGE

Pump/Stand/Bag – provided by Abbott trainer – Freego Pump

Giving sets and containers – 7/7 supply from Abbott trainer

A 7/7 supply of 50ml syringes and pH sticks – provided by ward

Tube Feed – 7/7 supply provided by Dietitian

ONGOING SUPPLIES (Lothian)

GI/Nutrition Nurse Specialists organise on-going supply of equipment and feeds via Homeward
Feed requirements supplied by RHSC dietitian to Nurse Specialists.
RHSC dietitian to write and fax feed prescription to GP

ONGOING SUPPLIES (Glasgow, Aberdeen, Dumfries and Forth Valley)

RHSC dietitian to liaise promptly with local dietitian to organise on-going supply of equipment and feeds via Homeward
RHSC dietitian to write and fax feed prescription to GP

ONGOING SUPPLIES (Fife, Borders, Dundee and Lanarkshire)

RHSC dietitian to liaise promptly with local dietitian to organise on-going supply of equipment and feeds via Abbott
RHSC dietitian to write and fax feed prescription to GP

All patients to have Community Nurse referral completed by ward staff sent to appropriate CCN team prior to discharge

Appendix 4: Guidance on monitoring adult patients who are receiving enteral tube feeding in hospital (Dietetic and Nursing)

Patient monitoring should be multidisciplinary and the healthcare professionals who are involved in different aspects of monitoring will depend on the individual patient.
However it should be clearly documented who is responsible for monitoring each aspect of patients care.

References:

Todorovic & Micklewright (2011) **PENG – A pocket guide to clinical nutrition 4rd edition**
British Dietetic Association

A.S.P.E.N. Enteral Nutrition Practice Recommendations
JPEN J Parenter Enteral Nutr 2009; 33; 122 - originally published online Jan 26, 2009
(Robin Bankhead, Joseph Boullata, Susan Brantley, Mark Corkins, Peggi Guenter, Joseph Krenitsky, Beth Lyman, Norma A. Metheny, Charles Mueller, Sandra Robbins, Jacqueline Wessel and the A.S.P.E.N. Board of Directors)

BAPEN (1999) **Current Perspectives on Enteral Nutrition in Adults**
British Association of Parenteral and Enteral Nutrition

Monitor	Suggested Frequency		Rationale
Nutritional intake	Acute	Stable	
• Calculate nutrient intake from enteral nutrition and normal diet. • Determine actual volume of feed delivered.	Daily	As clinically indicated	Compare intake with requirements. Facilitate transition between various forms of support
Anthropometric			
• Weight	Weekly	Weekly	Assess changes in tissue mass, reflecting adequacy of energy provision
• BMI and Height	Start of feeding	BMI weekly	Important for calculating nutritional requirements
• Mid arm circumference	Monthly	Monthly	Useful surrogate for weight when it cannot be measured, or not accurate due to oedema.
• Tricep skinfold thickness	If clinically indicated	If clinically indicated	Simple accessible indirect measure of body fat
Biochemical			
• Urea and electrolytes (Creatinine, Sodium, Potassium, Magnesium, Phosphate) as per Enteral Feeding order set on TRAK	Start of feeding, daily If refeeding risk twice weekly thereafter.	As clinically indicated e.g. change of condition, feed tolerance.	Assess hydration status. To ensure the patient is metabolically stable and that enteral feeding is meeting requirements. Abnormalities should be noted and corrected by oral/enteral or intravenous supplementation.
• Blood glucose	Four hourly in ICU. Daily on the ward. As clinically indicated in known Diabetes	In relation to Diabetic medication	To detect hypo- or hyperglycaemia To ensure that enteral feeding and insulin regime are optimising blood sugar control
• Haemoglobin, Iron , Ferritin	Establish baseline	As clinically indicated	Useful indicator for metabolic stress when calculating nutritional requirements
	Monitor acute	As clinically	Low albumin levels indicate high risk of morbidity

• CRP	phase response	indicated	and mortality. **It does not reflect protein status, but may help identify patients in need of nutritional support**
• Albumin	Twice weekly	If indicted e.g. oedema	
• Vitamins e.g. Vit B12, Vit B2, Vit B6, Vit C	Not indicated due to effects of acute phase response on plasma micronutrients	If clinically indicated	As required – patient specific.
Clinical			
▪ General condition and appearance, including swallowing and NBM status. Presence of safety device e.g. Nasal bridle, Posey mitts	Daily	If clinically indicated	To establish that the patient is tolerating the enteral feeding. Assess most appropriate route of access for enteral nutrition. Establish the safety of the enteral feeding .
▪ Ensure that the head of the patients bed is elevated to a minimum of 30 degrees during the administration of feeds	At all times	At all times	Minimising the risk of pulmonary aspiration of feed
▪ Temperature, pulse, respiration rate	Daily	Weekly	To monitor for infection. Can aid evaluation of hydration status. Pyrexia increase protein and energy requirements.
▪ Fluid balance	Daily	Weekly	To prevent under/over hydration. To compare prescribed feed with feed volume delivered
▪ Medicines and drug / nutrient interaction	Daily	As clinically indicated	Note that enteral feeds can reduce absorption of some medicines and this may be clinically important for medicines with narrow therapeutic ranges. (See best practice statement for further information).
Gastrointestinal function			
• Gastrointestinal function e.g. stool charts	Daily	Weekly	Altered bowel habit is common in enteral tube feeding
• Gastric residual volumes (GRV) where clinically indicated e.g. low conscious levels	Four hourly when establishing feed in ICU/HDU situation	As clinically indicated	GRV can be used to assess gastric emptying. Gastroparesis may increase the risk of oesophageal reflux and pulmonary aspiration
• Nausea and vomiting	Daily	Daily	To ensure tolerance of enteral nutritional support

Feeding Devices			
• Position of nasogastric tube feeding tube. Note positional marking of tube at nose.	Prior to administration of feed, fluids and medicines	Prior to administration of feed, fluids and medicines	Prevention of aspiration pneumonia pH <5.5 indicates gastric placement **(see Nasogastric Decision Tree)** Check that position of nasogastric tube has not become displaced.
• Nasal passages (when nasogastric Tube is in situ)	Daily	Daily	To check for nasal ulceration/irritation
• Condition of enteral feeding tube	Daily	Daily	To observe for cracks/leaks in the tube, To observe for movement in the tube. Additional monitoring will be required for Jejunostomies and Gastrostomies. **(refer to relevant section of Best Practice Statements)**
• Stoma site	Daily	Daily	Observe for redness, inflammation or over granulation
• Type of feeding device and retention method	At the start of feeding and any subsequent changes noted	When changed	Ensure that all feeding devices are correctly monitored

Review team:
Senior Dietician Neurosciences, Senior Dieticians, Dieticians and Senior Charge Nurses.

Appendix 5 Adult Dietetic post discharge monitoring

Monitor	Suggested Frequency	Rationale
Logistics • Competency of patient/carer • Additional training needs • Storage facilities for feed • Position of pump and power point • Assist with problem solving • Problems with feeding pump (if applicable)	Initial Home Visit At each review appointment	To ensure that the practicalities of feeding are achievable.
Nutritional • Calculate nutritional intake and compare to nutritional requirements. • Recent dietary and fluid intake using a 24-hour recall or food diary • Compare prescribed feed versus actual feed taken • Reason why feed not given • Tolerance of feeding regime	At each review appointment	To ensure that the individual is receiving the amount of nutrients prescribed to meet the nutritional requirements and that the methods of feeding are still the most appropriate.
Anthropometric • Weight, Height, BMI • Changes in weight • Skinfold thickness, mid arm circumference if appropriate.	At each review appointment	To assess ongoing nutritional status, determine whether nutritional goals are being achieved (e.g. maintain or improve nutritional status). To take into account both body fat and muscle.
Biochemical • Urea and electrolytes • Liver function tests • Albumin • CRP • Haemoglobin, Iron & Ferritin • Trace elements e.g. zinc, magnesium • Vitamins e.g. Vit B12, Vit B2, Vit B6, Vit C	As clinically indicated *****	To ensure the patient is metabolically stable and that enteral feeding is meeting requirements. Abnormalities should be noted and where possible the enteral feed altered to correct them. Where this is not possible they should be corrected by oral or intravenous supplementation. **Biochemical indicators should be assessed in conjunction with other markers of nutritional status and not in isolation.**
Clinical • General condition and appearance • Gastrointestinal function • Fluid balance • Problems with feeding tube and stoma site if appropriate • Pharmacological therapy and drug/nutrient interactions • Care of feeding tube and stoma site	At each review appointment	To establish that the patient is tolerating the enteral feeding and that the route of administration and treatment remain appropriate. Note that enteral feeds can reduce absorption of some medicines and this may be clinically important for medicines with narrow therapeutic ranges.

*** Factors that may indicate the need for more frequent monitoring**:

- Any biochemical abnormalities during recent hospital admission.
- Poor feed tolerance leading to the patient regularly receiving less than prescribed volume
- Presence of malabsorption
- Patients who are receiving additional electrolytes and vitamins
- Patients who are receiving feeding regimens that do not provide the Recommend Daily Amounts for vitamins and minerals.

NICE (2006) Nutrition support for adults Oral nutrition support, enteral tube feeding and parenteral nutrition. Clinical Guideline 32

Appendix 6 Paediatric monitoring

Monitoring of growth parameters and nutritional requirements of paediatric patients on home enteral nutrition is based primarily on individual patient need. There are no evidence-based guidelines regarding biochemical, growth and clinical monitoring in this patient group. The following consensus guidelines, developed in a paediatric tertiary referral centre, are based primarily upon clinical experience.

Biochemical monitoring

Any child receiving at least 50% of their daily nutritional requirements as enteral tube feeds should have blood collected for the following biochemical tests:

Baseline evaluation:
Urea and electrolytes, creatinine, glucose, liver function tests
Calcium/phosphate/magnesium
Albumin/protein
C-reactive protein, full blood count
Zinc, copper, selenium (2ml LiHep in tube with push-on cap)
Vitamins A/D/E (2ml LiHep)
PTH (1ml EDTA)
Vitamin B12 / folate (1ml plain)
Ferritin (0.5ml LiHep)

It is recommended that the above bloods are repeated at 6 months after baseline and then annually thereafter.
If biochemical imbalances or deficiencies/excessive levels of individual nutrients are identified, then closer intervals for reassessment may be appropriate.

Urinary sodium and creatinine will often be a useful measurement in infants with stomas, short bowel syndrome, gastroschisis and cystic fibrosis. The frequency should be based on individual patient need.

References:
Johnson TE, Janes SJ, MacDonald A, Elia M, Booth IW (2002) An observational study to evaluate micronutrient status during enteral feeding Archives of Diseases in Childhood 86 411-415

Jones M, Campbell KA, Duggan C, Young G, Bousvaros A, Higgins L, Mullen E (2001) Multiple micronutrient deficiencies in a child fed an elemental formula Journal of Paediatric Gastroenterology and Nutrition 33 602-60

Growth parameters

Infants (<2years)
Naked weight, length and head circumference should be measured and plotted on an appropriate centile chart and corrected age for prematurity should always be used for infants born <37/40 until 2 years:

Enteral feeding tube placement
2 weeks
2 monthly until 12 months
3-6 monthly thereafter

2 years - Adolescents
Weight and height should be measured and plotted on an appropriate centile chart at the following intervals:

Enteral feeding tube placement
1 month
3-6 monthly thereafter

Clinical monitoring
At the above time intervals (for growth parameters) a full clinical assessment should be undertaken to include the following:

- Nutritional assessment
    - intake from enteral feeds and oral diet
    - nutritional requirements adjusted for weight/ age/ stress factors/ physical activity

- General condition, appearance, energy levels

- Gastrointestinal function
    - vomiting / reflux
    - bowel frequency / consistency
    - abdominal distension / pain

- Check fluid status
    - include feed, water flushes, oral diet, medicines

- Infusion rate and pump

- Medicines and medicine / nutrient interactions

- Check feeding tube and stoma site

Appendix 7

PROCEDURE FOR TRANSITION OF HETF CLIENTS FROM PAEDIATRIC TO ADULT SERVICES

TIME	PERSON	ACTION
When client is 15 ½ years	Community Children's Nurse (CCN)	Send transfer information using Transition form CCN to District Nurses, and: • CENT Dietitian • Relevant District Nurse • Paediatric Dietitian • Nutrition Nurse • Patient/Carer • Lead Paediatric consultant • School Nurse • Dept of Community Child Health • GP • Others as appropriate Give patient information leaflet
Between 15 ½ - 16 years	Community Children's Nurse CENT Dietitian	• Joint Home visit to discuss equipment requirements and ongoing supply arrangements
Between 15 ½ - 16 years	CENT Dietitian	• Set up ongoing supply arrangements. Feed and giving sets, syringes, tubes from Home Delivery Company. • Change funding information with Home Delivery company • CENT Dietitian provides written information regarding supplies (using tube feed supplies form) and send to Patient/carer, CCN, District Nurse and GP, Paediatric Dietitian, Paediatric Budget Holder and Transitions Co-ordinator (email or post).
16 years	Paediatric Dietitian CENT Dietitian	Joint consultation to: • Meet client and carers • Review dietetic care • Growth charts • Diagnosis Location either home visit/clinic/school CENT dietitian will use LETFTF and Initial home visit sheet for documentation.
17 years	Paediatric Dietitian CENT Dietitian	Joint consultation to: • Review dietetic care • Growth charts Location either home visit/clinic/school
17 ½ years	Paediatric Dietitian CENT Dietitian	Joint consultation to: • Review dietetic care • Growth charts Location either home visit/clinic/school
18 years or on leaving school	Paediatric Dietitian CENT Dietitian	Joint consultation to Discharge into Adult Dietetic Service: • Review dietetic care • Growth charts Location either home visit/clinic/school If adult consultant known write to consultant

		informing them of dietetic care.

NOTES:

- This applies to Transition clients within NHS Lothian
- This does not include Cystic Fibrosis clients
- For clients who require residential/ day care placement the Paediatric Dietitian will inform the CENT Dietitian as soon as notification of placement has been received.
- The CENT Dietitian will organise training for residential care settings as required.
- This procedure is for guidance each client will be assessed on an individual basis.