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MARSIPAN: Management of Really Sick Patients with Anorexia Nervosa

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MARSIPAN: Management of Really Sick Patients with Anorexia Nervosa

Report from the MARSIPAN group

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Organisations endorsing the report

The following organisations have endorsed the report:

- BEAT (Eating Disorders Association, eating disorders self-help charity)
- British Association for Parenteral and Enteral Nutrition
- Intercollegiate Group on Nutrition
- Specialty Advisory Committee on Clinical Biochemistry of the Royal College of Pathologists



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MARSIPAN Working Group

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- Professor Alastair Forbes** Professor of Gastroenterology and Clinical Nutrition, University College London (UCL) and UCL Hospital, chairman of the European Society for Clinical Nutrition and Metabolism (ESPEN) Education Committee, past chairman of BAPEN
- Professor Alan Jackson** Professor of Human Nutrition at the University of Southampton, chair of the Government's Scientific Advisory Committee on Nutrition
- Dr Simon Lal** Consultant gastroenterologist, Intestinal Failure Unit, Salford, North West Regional BAPEN Representative, member of BAPEN Medical Committee
- Dr Clodagh Loughrey** Consultant chemical pathologist, Department of Clinical Biochemistry, Belfast Health and Social Care Trust, and member of Northern Ireland Eating Disorder Care Network, Royal College of Pathologists' representative on Intercollegiate Group on Nutrition

PHARMACIST

- Lindsay Harper** Pharmacist, NSH Salford Primary Care Trust

DIETICIANS

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Dr Helen Murphy	St George's Hospital Medical School, London
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Dr Trevor Smith	BAPEN
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Nicky Whillan	Carer
Dr Ken Yeow	Consultant psychiatrist in eating disorders, Belfast
Dr Pat Twomey	Consultant chemical pathologist, Ipswich Hospital, Suffolk

Executive summary and recommendations

The MARSIPAN working group arose out of concerns that a number of patients with severe anorexia nervosa were being admitted to general medical units and sometimes deteriorating and dying on those units because of psychiatric problems, such as non-adherence to nutritional treatment, and medical complications, such as re-feeding syndrome. Sometimes overzealous application of National Institute for Health and Clinical Excellence (NICE) guidelines led to death from underfeeding syndrome. In the present guidelines, which emerged from mostly online discussions of the MARSIPAN group, we have provided:

- advice on physical assessment
- advice to the primary care team and criteria for admission to both medical units and specialist eating disorder units as well as non-specialist psychiatric units, and criteria for transfer between those services
- advice on the required members of the in-patient medical team
- medical, nutritional and psychiatric management of patients with severe anorexia nervosa in medical units, including the appropriate use of mental health legislation
- advice for commissioners on required services for this group of very ill patients.

Our group became aware of 12 cases of young people with severe anorexia nervosa who had died on medical units owing to re-feeding syndrome, underfeeding syndrome and other complications of anorexia nervosa and its treatment. We believe that the problem is widespread but as yet not quantified. However, we hope that implementation of these guidelines will help to reduce the number of avoidable deaths of patients with severe anorexia nervosa.

RECOMMENDATIONS

- 1 Medical and psychiatric ward staff need to be aware that adult patients with anorexia nervosa being admitted to a medical ward are often at high risk.
- 2 Physical risk assessment in these patients should include body mass index (BMI), physical examination, including muscle power, blood tests and electrocardiography (ECG).

- 3 Most adults with severe anorexia nervosa should be treated on specialist eating disorder units (SEDUs).
- 4 Criteria for medical admission are the need for treatments (such as intravenous infusion) not available on a psychiatric ward or the unavailability of a suitable SEDU bed.
- 5 The role of the primary care team is to monitor such patients and refer them early.
- 6 The in-patient medical team should be supported by a senior psychiatrist, preferably an eating disorders psychiatrist. If an eating disorders psychiatrist is unavailable, support should come from a liaison or adult general psychiatrist.
- 7 The in-patient medical team should contain a physician and a dietician with specialist knowledge in eating disorders, preferably within a nutrition support team, and have ready access to advice from an eating disorders psychiatrist.
- 8 The key tasks of the in-patient medical team are to:
 - safely re-feed the patient
 - avoid re-feeding syndrome caused by too rapid re-feeding
 - avoid underfeeding syndrome caused by too cautious rates of re-feeding
 - manage, with the help of psychiatric staff, the behavioural problems common in patients with anorexia nervosa, such as sabotaging nutrition
 - occasionally to treat patients under compulsion (using Section 3 of the Mental Health Act), with the support of psychiatric staff
 - manage family concerns
 - arrange transfer to a SEDU without delay, as soon as the patient can be managed safely there.
- 9 Health commissioners should:
 - be aware of the usually inadequate local provision for MARSIPAN patients
 - ensure that robust plans are in place including adequately trained and resourced medical, nursing and dietetic staff on the acute services and specialist eating disorder staff in mental health services.

Introduction

HISTORY OF THE PROJECT

This report grew out of concerns arising in two clinical contexts. Members of the Royal College of Psychiatrists' Eating Disorders Section have been concerned for some time that patients, usually young people with anorexia nervosa, who are sent to medical wards from psychiatric or eating disorder units because they are too ill to manage in a psychiatric service sometimes do very badly and occasionally die. It seemed that the patients' self-destructive behaviour (e.g. turning off drips) may have been contributing to their decline. There has also been concern about the interpretation of the National Institute for Health and Clinical Excellence (NICE) guideline on nutrition support in adults (NICE, 2006), which states:

2.2 Groups that will not be covered

Patients with eating disorders. This is covered in the NICE guideline on eating disorders (p. 38).

Although some clinicians have adopted the 2006 guideline for patients with anorexia nervosa, others have not, leading to worrying variations in practice. We intend to clarify the situation and provide unambiguous advice on the management of this patient group in a number of settings.

In 2008, a case was presented at the annual meeting of the British Association for Parenteral and Enteral Nutrition (BAPEN), illustrating just such a clinical problem. A young woman with anorexia nervosa died after admission to a medical unit in which every effort was made to save her. The discussants at the meeting were two psychiatrists, two physicians, two dieticians and a barrister, and it was concluded that more interdisciplinary work was required in order to meet the considerable clinical challenges presented by these patients. After the meeting it was resolved that a group would be set up to generate guidelines to help manage this situation. A quick survey of physicians and psychiatrists revealed 16 fatal cases in medical settings of mostly young people with anorexia nervosa over the previous few years and this seemed to be an underestimate of those cases known to colleagues. It seemed that some doctors did not feel free to share these events with us, perhaps for fear of criticism. It appeared that the problem was sufficiently common to give rise to serious concern.

Hence, the Management of Really Sick Patients with Anorexia Nervosa (MARSIPAN) group was set up with contributors offering a wide range of skills. We very much hope that this guideline forms the basis of local policies. We hope that it will have the endorsement of a wide range of bodies and so make significant changes in clinical practice.

Anorexia nervosa has one of the highest mortalities of any psychiatric condition, and some fatalities are inevitable. We hope, however, that a

fatal outcome in some young people will be avoided by clearer therapeutic guidelines taking into account the wide range of problems (physiological, psychological and familial) that are encountered, and by clinicians with differing skills collaborating closely in the treatment of people with anorexia nervosa.

PROCEDURE FOLLOWED IN PRODUCING THE REPORT

MEMBERSHIP OF THE GROUP, STAKEHOLDER INVOLVEMENT AND CONSULTATIONS MADE

The initiators of the project were Dr Paul Robinson and Dr Tim Bowling, following the BAPEN conference. They consulted with professional colleagues known to be interested in the topic within the Royal College of Physicians, the Royal College of Pathologists, BAPEN, the Intercollegiate Group on Nutrition and the Royal College of Psychiatrists. A request to provide details of case histories that demonstrated the sort of problem in which we were interested was circulated to BAPEN and the Royal College of Psychiatrists' Eating Disorder Section members. In addition, the latter were asked to fill in a questionnaire (Appendix 3) in which they were asked about their management of patients with severe medical problems in specialist eating disorder units (SEDUs). After a month, the Working Group comprised twelve doctors, including five adult eating disorders psychiatrists, one child and adolescent eating disorders psychiatrist, and six nutrition physicians (including one paediatrician). We recruited from personal contacts one dietician in intestinal failure, one dietician in eating disorders, one medical pharmacist and one intensive care physician.

During the course of the deliberations, we agreed to consult other individuals, including a professor of general practice, a nurse, another psychiatrist, two of the authors of the NICE guideline on nutritional support for adults, the chief executive of the main user and carer organisation in the UK, and two carers. These individuals are listed in the MARSIPAN Working Group, pp. 5–7.

GATHERING INFORMATION

We carried out a Medline search of the literature using the search term anorexia nervosa in combination with (number of citations in brackets) in-patient death (12), medical ward (9), gastroenterology (50), death (228), physician (229) and medical (1372). Guidelines in English were sought.

The results were disappointing. Very little had been written on adverse outcomes of patients with anorexia nervosa on medical wards and this encouraged us to produce this report.

ESTABLISHING THE SCOPE OF THE GUIDELINE

The scope of the guideline was established early on in our discussions and was to apply to:

- patients with severe anorexia nervosa (BMI <15)
- individuals admitted to medical wards or to specialist eating disorder units.

We believed that the main problems were in the medical wards, but wished to discuss the management of patients with serious medical problems in SEDUs, and the issues of liaison and transfer between the two settings. We would also agree that patients losing weight very rapidly and those with severe bulimic symptoms (vomiting and laxative misuse) and extreme over-exercise can have serious nutritional problems at BMI >15. This guideline may be applied to such patients, but they were not our primary focus.

EDITORIAL INDEPENDENCE

Although we are representing to different degrees different bodies, including several medical Royal Colleges, our views are independent. Several of the Colleges have endorsed the guidelines.

THE PROBLEM

The MARSIPAN group came together after clinical experience indicated that patients with severe anorexia nervosa, often young, had been admitted to medical facilities in a seriously ill state and had subsequently deteriorated and died, at times from identifiable causes such as pneumonia and at others from the effects of starvation or the re-feeding syndrome. Some of the cases led to widespread coverage in the media (*BBC News*, 2008; *Daily Telegraph*, 2008), others to serious and untoward incident inquiries. One such inquiry (Scottish Parliament, 2004) concluded that liaison between medical and psychiatric or eating disorders services could be improved. However, messages from individual clinicians suggested that other issues were also important.

In Appendix 1 we reproduce a number of quotes from messages received by our group. They represent cases in which problems in care had often been associated with a fatal outcome. Some had been subject to subsequent inquiry.

The issues that arose when those cases were considered included:

- failure to apply compulsory treatment
- lack of liaison psychiatry support
- collapse of local eating disorder services
- inadequacy of general psychiatry services
- inappropriate palliative care
- problems in medical management
- failure to recognise re-feeding syndrome
- failure to manage eating disorder behaviours
- calorie restriction leading to weight loss owing to overcautious re-feeding.

We hope to address each of these issues in this report. We also need to admit that there is a large amount of information we do not have. Looking at patients who did badly, many had low BMI, but not all, and many patients with lower BMI do not get into a dangerous clinical state. A prospective study of patients with anorexia nervosa admitted to medical wards with a wide range of physical and psychological measures might help us identify those

patients who are likely to be at particular risk. Currently, we can perform a risk assessment but although high scoring on these measures (Box 1, p. 15) seems to increase the probability of physical collapse, it remains a blunt instrument with a weak evidence base.

Issues arising in all settings

RISK ASSESSMENT: HOW ILL IS THE PATIENT?

Patients with anorexia nervosa can seem deceptively well. They may have an extremely powerful drive to exercise which sometimes seems to override their lack of nutritional reserve, so that they may appear very energetic right up to a physical collapse. One patient was seen to be going round a medical ward, cheerily waving to other patients through their windows just a few days before collapsing from fatal hypoglycaemia.

Moreover, patients with eating disorders can falsify their weight by drinking water (up to 10 litres in one documented case (Robinson, 2009)) or wearing weights or other objects, and it is accepted that assessment needs to include a range of measures in order to have a chance of detecting those patients whose state is deteriorating but who are attempting to conceal that fact.

There have been several attempts to produce a physical risk assessment schedule including, in the UK, the NICE guideline on eating disorders (National Institute for Clinical Excellence, 2004) and the Royal College of Psychiatrists' guideline on nutrition in anorexia nervosa (Royal College of Psychiatrists, 2005). These measures provide for monitoring of BMI, physical state, blood tests and ECG.

For a basic list of observations to be made to assess risk in patients with anorexia nervosa, see Box 1.

Criteria for different risk levels are hard to apply because of the influence of variables such as rate of onset, chronicity, reserves, other conditions and medication. When deciding on hospital admission, any life-threatening change may trigger the need for an admission and we would not advocate rigid rules, preferring a thorough clinical assessment.

LOCATION OF CARE: WHERE SHOULD THE PATIENT BE MANAGED?

When the decision has been made to admit the patient to hospital, the referrer's actions will be informed by many factors, not all clinical.

The options usually are:

- medical bed
- general psychiatric bed
- SEDU bed, sometimes in the private sector.

The decision rests on the clinical state of the patient as well as the services available locally (Box 2). The patient will have a number of needs,

Box 1 RISK ASSESSMENT IN ANOREXIA NERVOSA

1. Body mass index: weight (kg)/height² (m²)
 - anorexia <17.5
 - medium risk 13–15
 - high risk <13
2. Physical examination
 - low pulse, blood pressure and core temperature
 - muscle power reduced
 - Sit up–Squat–Stand (SUSS) test
3. Blood tests
 - sodium low: suspect water loading (<125mmol/l high risk)
 - potassium low: vomiting or laxative abuse (<3mmol/l high risk)
 - Note: low sodium and potassium can occur in malnutrition with or without water loading or purging
 - raised transaminases
 - hypoglycaemia: blood glucose <3mmol/l (if present, suspect occult infection, especially with low albumin or raised c-reactive protein)
4. ECG
 - bradycardia
 - raised QTc (>450ms)
 - non-specific T-wave changes
 - hypokalaemic changes

all of which must be met. They include treatment for nutritional and other medical problems and management of behaviours which may compromise treatment. The management of these behaviours, which may include food avoidance and concealment, exercising, falsifying weight, excessive water drinking, to name a few, is best achieved on a SEDU. However, the patient may be so physically ill that admission to such a unit may not be possible. In order to determine how to decide whether a particular patient can be admitted to a SEDU or not, the needs of that patient must be matched with what the unit can provide. To investigate this, a survey of SEDUs was performed in which they were asked to indicate what medical services they could and could not provide (Appendix 3).

In this small survey, the services that SEDUs could not usually offer were:

- intravenous infusions
- artificial ventilation
- cardiac monitoring
- central venous pressure (CVP) lines
- total parenteral nutrition (TPN)
- cardiac resuscitation ('crash') team
- treatment of serious medical complications.

Box 2 LOCATION OF CARE

We suggest that in most cases, unless the patient requires medical services that are not provided, patients with severe anorexia nervosa should be cared for in a specialist eating disorders unit (SEDU), if available.

Should a SEDU bed be unavailable, owing to waiting lists or lack of an appropriate facility, the choice is between a medical and a general psychiatric bed. Several variables will influence the decision such as the quality of liaison between medical, psychiatric and eating disorder service, the experience of psychiatric units in managing malnutrition, as well as the clinical state of the patients and requirements for monitoring. In most areas, there will be a SEDU responsible for the population and we suggest that a senior member of the SEDU team consult with medical and psychiatric colleagues in order to develop a local MARSIPAN strategy to address this problem.

Regarding nasogastric feeding (Mental Welfare Commission for Scotland, 2007), this can usually be managed in a psychiatric setting and is quite often provided, for example, for patients unable to eat because of catatonic or depressive stupor. It would be reasonable for a general psychiatric unit or SEDU to ask that a patient's nasogastric tube be placed and position verified in a medical unit and that the initial few days of feeding be provided there, until the danger of re-feeding syndrome has past. However, SEDUs in which experience in this procedure has been substantial may be able to care for the patient from the outset, and as elsewhere in this report, local solutions must be generated to match local provision.

The services that most SEDUs could offer were:

- nasogastric insertion and feeding
- daily biochemistry
- frequent nursing observations
- prevention of symptomatic behaviours (water drinking, absconding, exercising, etc.)
- daily ECG
- sedation of a resisting patient
- use and management of mental health legislation
- treatment of pressure sores
- immediate cardiac resuscitation with presence of 'crash' team.

TRANSFER BETWEEN SERVICES

Patients being transferred from one service to another, whether it is SEDU to medical, vice versa, or from children and adolescent to adult psychiatric services, are vulnerable and special care is required to make sure the transfer is safe. Patients sometimes try and sabotage a transfer (e.g. when they realise that another place has a better chance of achieving weight gain) by engaging in behaviours that result in them becoming so ill that transfer becomes impossible. Moreover, staff in one unit may have information about a patient which may be lost in the transfer. Many of the problems can be avoided by adequate communication (Box 3).

Box 3 TRANSFER BETWEEN SERVICES

When a patient is transferred from one service to another there should be a properly conducted and recorded meeting between representatives of the two services, usually also including the patient and family, so that it is very clear what will happen during and after the transfer of care, and who is responsible for what. Such meetings should be continued until transfer is satisfactorily achieved.

COMPULSORY ADMISSION AND TREATMENT

Some of the information we received during the Working Group consultations, mainly from reports by physicians about their experience on the wards, suggested misconceptions about compulsory treatment.

The Mental Health Act 1983 (2007) allows for compulsory treatment of patients with eating disorders (Box 4).

The tests for compulsory admission and treatment are:

- the presence of a mental disorder (e.g. anorexia nervosa)
- in-patient treatment is appropriate (e.g. for re-feeding)
- the condition presents a risk to the health or safety of the patient.

Box 4 COMPULSORY ADMISSION AND TREATMENT

Eating disorders are mental disorders. Patients with eating disorders may be putting their lives at risk and may require in-patient treatment. They can be admitted under Section 3 of the Mental Health Act and treated against their will, although this should rarely be required. It is essential, however, that it is done when necessary, and for this a qualified psychiatrist, another mental health worker and another doctor are required.

Under the Mental Health Act feeding is recognised as treatment for anorexia nervosa and can be done against the will of the patient as a life-saving measure.

Although a last resort, the decision to apply the Mental Health Act should be considered from the outset, for example, in a patient refusing treatment in an accident and emergency unit. If medical staff suspect that this course of action may be necessary, the psychiatric services should be contacted. If the medical consultant is not satisfied with the opinion given, there should be direct contact between the medical consultant and the consultant psychiatrist and the issue escalated until the patient's treatment is safe.

If psychiatric liaison staff believe that the patient is being denied treatment under the Mental Health Act for any reason, the matter must be similarly escalated between consultants and reasons documented for decisions made.

Medical consultants can no longer be the responsible medical officer for a patient detained under the Mental Health Act. The equivalent role under the amended Act (the responsible clinician) must be an approved mental health professional, in this situation generally a psychiatrist, who should probably be given an honorary contract with the acute trust.

On the other hand, the patient's capacity to accept or refuse treatment needs to be considered (Appendix 4 has details of both the Mental Health Act and the Mental Capacity Act).

We have been made aware of cases in which the psychiatrist has given the opinion that compulsory admission and treatment is not applicable. Although this might be true (for example, in a patient who adheres to treatment), it may well not be. Patients with anorexia nervosa are often extremely persuasive and articulate and may persuade, for example, accident and emergency staff to allow them to go home when this would be against the interests of their health.

Mental health legislation varies across the different jurisdictions of the UK, particularly in relation to the specific processes of detaining patients for involuntary treatment. Nevertheless, the underlying principles of using mental health legislation in the management of this client group are broadly applicable (anorexia nervosa is a serious mental disorder, in-patient re-feeding is at times an essential and direct treatment for this illness and in rare situations, where there is life-threatening physical risk and an unwillingness or inability to agree to treatment, compulsory treatment can and should be instituted). We use the term 'Mental Health Act' for economy of expression and take it to refer to equivalent legislation in other jurisdictions of the UK as well.

POLICIES AND PROTOCOLS

Many of the problems brought to our attention could have been addressed by prior discussion between clinicians in medicine and psychiatry, and management. Examples are the use of the Mental Health Act (Box 4),

Box 5 MEDICAL UNIT POLICIES AND PROTOCOLS TO AGREE IN ADVANCE

We recommend that clinicians and managers from psychiatric and medical services likely to see patients with severe anorexia nervosa should meet and develop a number of protocols in advance of the situations developing. Questions to address are:

- criteria for medical as opposed to psychiatric admission
- special nursing: qualifications and supervision of one-to-one nurses
- Mental Health Act: criteria for its use, identification of responsible clinician (psychiatrist) and responsible manager
- specialist eating disorder unit (SEDU) consultation and referral
- issues around funding (e.g. special nursing or SEDU referral), which may require an approach to the primary care trust
- liaison psychiatry services: training role, involvement of consultants and trainees with patients admitted and consultation with eating disorder specialists
- all local health commissioners should demand that a MARSIPAN group with at least a physician, a psychiatrist, a dietician and a nurse as well as management be set up in their area to advise on services required in medical units.

admission and discharge policies, and policies around supervision and funding of special nursing. There should be a clear and agreed protocol for the use of restraint. The protocol should make it clear exactly what restraints are acceptable and should not use euphemisms such as 'behavioural support'. A policy on advance directives should be in place. Some patients, having experienced nasogastric feeding, may be frightened of the procedure and when less ill may be willing to indicate what sort of approach they would prefer (e.g. requesting the use of a narrower nasogastric tube if possible). The question of the validity of advance directives, such as a request not to apply nasogastric feeding, needs to be evaluated with psychiatric, medical and legal help in each case as the issue arises (Box 5).

Management in different sectors

MANAGEMENT IN PRIMARY CARE

Patients with anorexia nervosa can deteriorate quickly or arrive already very unwell. Some are referred late and in some cases diagnosis could be earlier. Any patient with weight loss with or without amenorrhoea may have anorexia nervosa, especially if there are signs of weight preoccupation, lack of concern about weight loss or compensatory behaviours such as vomiting. Height, weight and BMI should be measured, and followed on a graph, and BMI centile charts should be used for those aged under 18. Differential diagnosis includes psychiatric and physical conditions (e.g. depression, infectious mononucleosis); eating disorders may coexist with other disorders.

Initial assessment should include general examination and baseline blood tests (Connan *et al*, 2000) with an ECG for those with BMI <15. It should be noted that some drugs (e.g. antipsychotics, often prescribed in patients with anorexia nervosa) can lengthen the QTc and hence enhance the cardiac ill-effects of malnutrition.

If weight loss is rapid or BMI has fallen below the threshold for anorexia nervosa (17.5), referral to specialist services should be considered and urgent referral should be considered when BMI <15. The referral letter must include current weight and height as well as other relevant information so that a risk assessment can be performed at the specialist clinic. Extensive and time-consuming physical investigations should be avoided.

Rapid re-feeding in the community (e.g. through bingeing) can risk re-feeding syndrome. Take blood daily for electrolytes, phosphate and magnesium in this situation.

Until the patient is seen in the specialist clinic, they should be seen regularly for weight monitoring and SUSS (Sit up-Squat-Stand, muscle strength) test (Appendix 2, p. 42), have their bloods checked and ECG performed (Box 6).

Box 6 MANAGEMENT OF ANOREXIA IN PRIMARY CARE

1. Rapid exclusion of other conditions.
2. Risk assessment: BMI, SUSS test, bloods, ECG.
3. Refer if rapid weight loss or BMI <17.5, urgently if BMI <15.
4. If rapid re-feeding in the community, check electrolytes, phosphate and magnesium daily.
5. Monitor until appointment.

MANAGEMENT IN IN-PATIENT MEDICAL SETTINGS

DEVELOPING EXPERTISE IN THE MEDICAL SERVICE

All medical units to which a severely ill patient with anorexia nervosa could be admitted should have an identified eating disorders psychiatrist available for consultation. Part of the role of SEDUs is to be available to medical units and particularly nutrition support teams to provide training for staff who might be called upon to treat these patients.

IDENTIFYING AN EATING DISORDERS NUTRITION PHYSICIAN

We recommend that every hospital to which a patient with severe anorexia nervosa could be admitted should identify a consultant physician who should have all of the following qualities:

- an interest in managing patients with anorexia nervosa
- expertise in clinical nutrition and nutrition support and be capable of leading a multidisciplinary nutrition support team
- access to in-patient beds
- an association with a specialist in eating disorders psychiatry
- training in the clinical problems (medical and psychiatric) of patients with severe anorexia nervosa, and their management.

This individual would be made aware whenever a patient with an eating disorder is admitted to the hospital, would consult as soon as possible and take over care in selected cases in which re-feeding is a significant part of treatment. In hospitals where a nutrition support team is established, the individual would normally be a part of that team.

PSYCHIATRIC INPUT

INADEQUATE PSYCHIATRIC SUPPORT

Many physicians feel that once a patient with anorexia nervosa has been admitted to a medical ward, support from the psychiatric service is either missing or inadequate.

PARTNERSHIP BETWEEN PHYSICIAN AND PSYCHIATRIST

Patients with anorexia nervosa admitted to a medical ward should have the full and ongoing support of a consultant psychiatrist who should form a partnership with the physician. Input from psychiatric trainees is welcome, but must be backed by involvement of the psychiatrist and regular contact between the two consultants. It is essential that psychiatrists providing support in this way be fully conversant with severe eating disorders and their management through specific training and experience.

THE LIAISON PSYCHIATRY SERVICE

The psychiatric liaison service in an acute hospital can have a major impact on care, especially if there is limited access to a specialist in eating disorders psychiatry. The current proposed curriculum for liaison psychiatry has a

substantial section on eating disorders, which is to be welcomed. The Faculty of Liaison Psychiatry at the Royal College of Psychiatrists recommend that:

- regular staff meetings need to be held to ensure a consistent approach and minimise the risk of splitting (e.g. playing off some staff against others)
- a sheet of straightforward guidelines should be produced on medical management of low-weight patients aimed primarily at junior medical staff
- a similar brief guide for nursing and medical staff on supporting patients and families should be prepared.

We fully endorse the active involvement of liaison psychiatry staff in the management of patients with anorexia nervosa and encourage them to contact the nearest eating disorders psychiatrist for additional advice.

DIETETIC INPUT

Generally, a nutrition team will contain a dietician skilled in re-feeding. Such teams are not universal, however, and we recommend that dieticians in all hospitals potentially receiving a patient with anorexia nervosa make contact with the dietician in the nearest SEDU, develop a protocol for re-feeding such patients and consult together when such a patient is admitted. It is essential that any hospital admitting patients with anorexia nervosa have a dietician trained to provide dietetic care to such patients.

NUTRITION SUPPORT TEAMS

As indicated, nutrition support teams are common but not universal. We believe that they greatly improve the chances of adequate care being provided to individuals with these complex clinical problems, and recommend that all acute trusts caring for patients with severe anorexia nervosa aspire to provision of such a team within a defined time frame.

SOME PRACTICAL CONSIDERATIONS

There is support for patients with anorexia nervosa to be nursed in a single room, with en-suite bathroom. This ensures privacy for someone in a disturbed mental state and may limit disruption to the rest of the ward. However, it also gives the patient opportunities to exercise, dispose of nutrients and purge, which would be more difficult in an open ward. We anticipate that all patients coming under the MARSIPAN category will need special psychiatric nursing and single-room accommodation makes this even more necessary.

NASOGASTRIC AND OTHER ROUTES OF FEEDING

The preferred route of feeding is oral. However, some patients fail to gain weight when fed orally. Some may opt for nasogastric feeding as they may feel less responsible for the weight gain, rendering it more acceptable. Others may resist weight gain by any means and in them compulsory treatment (always under mental health legislation) using nasogastric intubation and

feeding may be necessary. This should certainly occur if poor nutritional intake is life threatening. Insertion of a nasogastric tube against the will of the patient usually requires the presence of mental health nurses trained in safe control and restraint techniques, and psychiatric advice should be sought before embarking on this procedure.

RECOGNISING AND AVOIDING RE-FEEDING SYNDROME AND UNDERFEEDING SYNDROME

Re-feeding syndrome is a potentially fatal condition (World Health Organization, 1999; Winston *et al*, 2000; Crook, 2001; Casiero & Frishman, 2006; Mehanna *et al*, 2008) that occurs when patients who have had their food severely restricted are given large amounts of food via oral or nasogastric re-feeding as well as during TPN. It has been noted in out-patients with anorexia nervosa who have suddenly increased their food intake after several weeks of starvation (Case study 1).

CASE STUDY 1

A patient with a BMI of 14.5 had been eating almost nothing. Her psychiatrist told her that unless she could reverse the weight loss she might find herself in hospital. Terrified by this prospect, she began to overeat (binge) to gain weight. Within 3 days her serum phosphate level had fallen to 0.4mmol/l and she required oral phosphate supplements to correct this abnormality.

Re-feeding syndrome is characterised by rapid reductions in certain electrolytes, such as phosphate and potassium, caused by rapid transport into cells, and the resulting cardiac effects can be fatal. Avoidance of the syndrome can be achieved by gradually increasing nutritional intake.

There is substantial variation in opinion about the level at which to start re-feeding a patient with anorexia nervosa. Some units follow NICE (2006) guidelines for adult nutrition support, which recommend starting at 5kcal/kg/day for a patient weighing 32kg. Although the guidance excludes eating disorders, it is considered by some to be relevant to patients with severe anorexia nervosa. However, there is wide variation in its application, some physicians and dieticians applying it strictly and others regarding it as not applicable to this patient group. One of the very few published guidelines in this area from the USA, referring to the treatment of children with anorexia nervosa (Sylvester & Forman, 2008, p. 393), advises:

Patients start on 1250–1750 calories, depending on the patient's intake prior to hospitalization and severity of malnutrition, and advance by 250 calories daily. For patients with very low weight (<70% average body weight), the protocol is altered and caloric intake requirements may be decreased to avoid re-feeding syndrome, and advancement takes place over a longer period.

(For a 14-year-old at the 50th percentile for height, 70% average body weight is around 35kg.)

Opinions in the MARSIPAN group were divided between physicians, who were particularly concerned to avoid re-feeding syndrome by beginning

re-feeding slowly, and psychiatrists, who were concerned to avoid further weight loss in a very underweight patient, having sometimes been aware of patients who had deteriorated and died after being given very low calorie diets. The psychiatrists had not usually run into problems with re-feeding syndrome in their patients. From the physicians' experience, one case of the syndrome was noted in a patient given 2000kcal/day from the outset.

One physician in the group suggested that it was perhaps less harmful to risk re-feeding syndrome, which can be monitored and corrected, than brain damage and death caused by low glucose in a patient with hypoglycaemia. It was also commented that if higher calorie levels were thought to be essential (e.g. to correct low glucose), a critical care approach with constant monitoring and correction of abnormalities should be considered.

The different views of the psychiatrists and physicians can be attributed to a number of factors. First, most of the psychiatrists were aware of patients who had been underfed for several days on medical wards (a condition some have been tempted to call underfeeding syndrome), whereas most of the physicians were aware of patients who had died from re-feeding syndrome with higher calorie intakes. Second, the NICE (2006) guidelines for nutrition support in adults suggested starting with a low calorie intake, which has been applied by some dieticians and physicians in clinical nutrition. Last, and perhaps most importantly, the population of patients in medical beds compared with the psychiatric population was almost certainly more unwell, with lower BMI and greater comorbidity including cardiac, hepatic and electrolyte dysfunction. These patients would be more at risk for re-feeding syndrome than those without comorbidity. After extensive discussion the compromise documented in Box 7 was reached, and was acceptable to all members of the group.

Avoidance of re-feeding syndrome can also be encouraged by restricting carbohydrate calories and increasing dietary phosphate. When patients are prescribed oral or enteral nutritional supplements, consideration should be given to the use of high-calorie supplements (e.g. 2kcal/ml) as they have lower levels of carbohydrate and may therefore be less likely to produce re-feeding syndrome. Moreover, the diet should be rich in phosphate (e.g. milk) to help avoid the syndrome. The total fluid intake can easily exceed safe levels, and the recommendation is 30–35ml/kg/24h of fluid from all sources.

Box 7 MANAGEMENT OF RE-FEEDING

1. In eating disorder settings, a starting calorie intake of 20kcal/kg/day appears to be safe. However, electrolytes and clinical state need careful monitoring and transfer to a medical unit may be required if, for example, phosphate falls to <0.4mmol/l.
2. In medical in-patient settings it is sometimes prudent to use lower starting intakes (e.g. 5–10kcal/kg/day), especially in the presence of severity indicators (Appendix 5).
3. If low initial calorie levels (5–15kcal/kg/day) are used, clinical and biochemical review should be carried out twice daily, with calories increased in steps to 20kcal/kg/day within 2 days unless there is a contraindication.
4. The decision to initiate low-calorie feeding should be made in consultation with an expert physician in clinical nutrition and a nutrition support team. Minor or even moderate abnormalities of liver function (e.g. alanine transaminase up to four times the upper limit of the normal range) should not delay increased feeding.

BEHAVIOURAL MANAGEMENT OF PATIENTS WITH EATING DISORDERS ON MEDICAL WARDS

Behavioural problems are among the most difficult and urgent to sort out. A key factor is the provision of adequate psychiatric and medical nursing staff to manage the challenging and risky behaviours in which patients with eating disorders often engage (Box 8).

Patients with anorexia nervosa are subject to an extreme compulsion to pursue thinness. This compulsion has been likened to addiction to heroin and patients will take terrible risks in order to satisfy it. They may deny that they have the compulsion, to others and sometimes to themselves, and hardly be aware of their behaviours. These behaviours include falsifying weight by means such as drinking water before weighing, wearing weights or other items and gripping the weighing machine with long toes to increase weight. They may engage in obsessive exercise such as running up and down hospital towers (following notices often displayed on hospital stairs encouraging exercise to promote health), standing, wiggling toes and generally walking around. They may wear very little clothing in order to shiver. They may sabotage attempts at feeding by disposing of food, running nasogastric feed into the sink or a pillow and turning off drips. They may try and run away. They may vomit in the toilets. They may recruit friends and relatives to dispose of food or provide it for binges. A patient engaging in these behaviours can be very difficult to manage. At the same time, such behaviours may contribute to deterioration and sometimes death. Discovering that a patient is doing these or other things sometimes leads to a sense of exasperation and anger (not to mention emotional stress) among staff, particularly as they may feel they might be criticised as a result. The patient should be regarded as being under an irresistible compulsion and unless their mental state changes, they are powerless to alter their behaviour. They may

BOX 8 BEHAVIOURAL MANAGEMENT OF PATIENTS WITH EATING DISORDERS

1. If weight gain is less than expected, suspect that something untoward is going on.
2. Early in the admission schedule a meeting between the medical consultant, medical nurse, psychiatric (SEDU) consultant or, if not available, liaison psychiatry consultant to decide on how to achieve treatment aims. Document the meeting clearly in the notes. Schedule regular follow-up meetings including the consultant psychiatrist.
3. If a nutrition support team (physician, nurse, dietician, pharmacist, clinical biochemist) is available, appropriate members of the team should meet with the psychiatric team (consultant, trainee psychiatrist, psychiatric nurse) to plan and monitor care.
4. Involve the patient and (usually) family in a further discussion to explain the treatment plan.
5. Ideally, employ a nurse from the SEDU to supervise and train one-to-one nurses who usually should be registered mental health nurses aware of the problems occurring in patients with eating disorders.
6. Write a management plan to be transferred between nurses with proper handover.
7. Members of the psychiatric and medical team should meet regularly (one to two times per week) to discuss progress and revise the plans. If there are clear problems, another meeting of senior team members should be scheduled and the plan revised.
8. Be prepared to use the Mental Health Act if necessary.

promise to stop, but are likely to break that promise. Staff on psychiatric units are used to patients, especially if detained under the Mental Health Act, disagreeing with treatments and attempting to sabotage them by spitting out tablets and absconding from the ward. On medical units the set up is aimed at providing essential treatment to generally willing and cooperative patients with, usually, inadequate staff numbers. The seriously ill patient with anorexia nervosa has a potentially fatal condition and also is subject to behaviours which sabotage treatment.

These problems are not straightforward to deal with. Staff working on SEDUs attempt to address them by increasing staff numbers, agreeing a 'contract' with the patient, by confining patients to areas that can be more easily observed, by locking toilets and bedrooms and by observing patients during therapeutic activities such as group therapy. Patients who continue to sabotage their care may be observed one to one (occasionally a higher ratio is required) for 24 hours a day. This is also used for suicidal patients. The most important factor contributing to the success of one-to-one observation is training and experience of the staff involved. A staff member, often from an agency, who knows neither the ward nor the issues encountered in eating disorders is unlikely to be successful in preventing a patient from engaging in all behaviours alluded to earlier. The most successful examples brought to the attention of the MARSIPAN group were those in which there was close collaboration with the SEDU (Case study 2).

CASE STUDY 2

On the whole, our patients who are transferred to the medical ward do well, and don't have the opportunity to sabotage their treatment because of the system we have of working with one particular physician, with clear protocols and one-to-one nursing by a registered mental health nurse experienced in eating disorders. (Eating disorders psychiatrist)

WHO SHOULD PAY FOR SPECIAL NURSING?

One issue that comes up repeatedly is the question of who should pay for the nursing. All managers will agree if someone else picks up the tab. However, the costs can be very high, some patients requiring long-term one-to-one or sometimes two-to-one nursing. In some units the SEDU budget is used for special nursing on medical wards, in others the medical ward budget pays. Given that this is a relatively uncommon and potentially life-threatening situation that involves two or three services, it would not be unreasonable to ask the primary care trust or other funding body to pay for the extra costs involved rather than leaving it to one service to cope with a substantial hit on its budget. This will need to be negotiated locally and preferably in advance.

FAMILIES

Family members of severely ill patients with anorexia nervosa can be even more distressed than relatives of patients with non-psychiatric life-threatening conditions. This may in part be caused by the common feelings of guilt and anger experienced by relatives that can cause them to become extremely upset and sometimes angry with staff.

The problem that many families report is lack of information. In psychiatric units and SEDUs this often arises from overenthusiastic defence of confidentiality. Even if the patient has said they do not want their family to be given information, the family can still be seen and counselled in general about any issue they wish to raise, as long as information coming from the patient is not divulged. On medical wards the communication problem seems more likely to be caused by limited availability of staff. Although time consuming, it is always worthwhile to hold a meeting with a family member, a senior member of the medical team and a relevant member of the psychiatric or eating disorders team (Case study 3).

CASE STUDY 3

A young man with anorexia complicated by a nutritionally induced psychosis was in a general medical ward. His mother contacted the ward several times a day and made complaints against several nurses, including allegations that they were sexually interfering with her son. A meeting with her, the ward manager and the eating disorders psychiatrist was held every week to discuss his progress. Although his mother's anxiety continued to be high, it was more contained and as issues were addressed in the meeting, her complaints reduced.

Sometimes, the best efforts of staff to explain and reassure fail, and relatives' behaviour threatens to harm the patient's treatment (Case study 4).

CASE STUDY 4

A young woman of 18 was admitted to a clinical nutrition unit with severe anorexia nervosa. Her mother frequently smelt of alcohol and there were major arguments on the ward between the patient and her parents, who were fighting each other for custody of the patient. The grandfather (a doctor) made private arrangements for her to be seen by another doctor and also disclosed to the patient a distressing piece of information regarding her family. In this chaotic atmosphere direct communication between the team and the family was very difficult.

In this (eventually fatal) case (Case study 4) clear boundaries needed to be drawn to separate warring parties and individuals should be seen alone to answer questions and establish rules. The presence of an eating disorders specialist or another psychiatrist can be very helpful, but the process is time consuming and difficult on a busy medical unit. Such a patient may well need to be placed under Section 3 of the Mental Health Act (e.g. to provide nasogastric feeding against the patient's will or prevent them from exercising) and the nearest relative may well disagree and object. In such a case, the social worker can apply to the county court for the nearest relative to be set aside and the Section 3 can then go ahead. Relatives and others can also be excluded if their presence is deemed to be counter-therapeutic.

More often, however, the family is consumed by concern over the health of the patient and regular meetings can keep them informed and allow them to influence treatment in an extremely helpful way (Case study 5).

CASE STUDY 5

A young woman was admitted to an in-patient unit with severe malnutrition and self-harm. Her parents were seen regularly as a couple so that they could remain informed about her progress and provide information helpful to the team. The patient was aware of the meetings and agreed to them. She gradually improved and when more physically healthy was able to join family meetings and begin to address some of the family issues.

CRITERIA FOR TRANSFER BACK TO THE SEDU

It is extremely important that patients do not stay in medical settings longer than necessary because of the ever-present possibility that they may sabotage treatment, especially as they feel a bit better owing to rehydration and improvement in electrolytes. Every time the team meets, the question should be asked of whether a particular patient presents clinical problems demanding resources that are not available on the SEDU. If the answer is no, the patient should usually be transferred back to the SEDU without delay. This should occur even if an unexplained abnormality (such as abnormal thyroxine or liver function tests) has been discovered. The abnormality can be handed over and followed up in the psychiatric setting with the help of the eating disorders liaison physician.

It should be added, however, that SEDU beds are not always immediately available and the management of the patient may need to be continued on the medical ward for longer than ideal. Under these circumstances we recommend the procedure described in Box 9. General psychiatric units should be open to the possibility of patients awaiting a SEDU bed being treated in their unit. This may involve continuing nasogastric feeding, in which case the continued support of the medical team is essential.

Last, patients are sometimes admitted to a medical bed in a poor physical state (e.g. BMI = 12, K = 2.5 mmol/l). We are aware of many cases in which such a patient has been discharged home as soon as the potassium is in the normal range. We regard this as a dangerous practice which is often motivated by the need to clear beds rather than by the clinical needs of the patient.

We advise that a patient with severe anorexia nervosa (BMI <15) should not be discharged without the physician in charge consulting with an eating disorders psychiatrist, or, if not available, with a liaison or general adult psychiatrist to assess physical and psychiatric risk factors.

PATIENTS ADMITTED TO INTENSIVE CARE OR HIGH-DEPENDENCY UNITS

Patients in intensive care or high-dependency unit settings can become a little easier to manage in one way, because their treatment-sabotaging behaviours can become less apparent, perhaps because they are more physically ill. The need for a multidisciplinary approach remains, however, and regular meetings between medical staff (including all members of the nutrition support team if one exists) and psychiatric, preferably eating disorders, staff should continue. As patients improve, their problematic behaviours can return and this will need to be watched for carefully by staff dealing with the patient, as psychiatric nurses may not be employed at this

Box 9 TRANSFER OF PATIENTS FROM MEDICAL WARDS

1. Criterion for transfer: clinical problems can be managed on a SEDU.
2. If SEDU bed is not immediately available,
 - obtain an opinion from the eating disorders specialist on management of the patient's psychological and behavioural problems, especially those that might sabotage weight gain; this opinion should be followed up by regular visits to continue until the patient can be taken over
 - establish a regular meeting between medical and nursing ward staff and liaison psychiatry staff, initially to establish and then to implement the eating disorder specialist's advice and to decide what to do if the patient's state is deteriorating
 - establish a clear procedure for supervising 'special' (one-to-one) nurses which identifies when supervision is failing to prevent damaging behaviours
 - consultant physicians and psychiatrists in the medical, liaison psychiatry and the SEDU should have each other's contact details and be in touch especially if the patient's state gives rise to substantial concern
 - if physical state allows, consider transfer to a psychiatric in-patient bed, with nasogastric tube in place if appropriate and ongoing support from the medical team, for instance in the event that the nasogastric tube is pulled out.
3. When not to discharge/transfer:
 - if one risk factor (e.g. low potassium) has improved, but others (e.g. low BMI) remain
 - continue to assess risk as in Box 1 (p. 15).

stage. Transfer back to the general ward may be a time of increased risk. The level of treatment-sabotaging behaviours can increase and it is at this point that psychiatric nursing must be reintroduced and closely monitored.

THE ROLE OF COMMISSIONERS IN SUPPORTING MEDICAL IN-PATIENT SERVICES FOR MARSIPAN PATIENTS

We recommend that medical in-patients who require it should have access to a physician with special expertise in nutrition, backed by a nutrition support team and associated with and supported by a specialist in eating disorders psychiatry. It is difficult to estimate how many such beds should be available and the need might vary depending on local eating disorder services. We appreciate that not all acute hospital trusts will be able to reach the level of provision we recommend, and suggest that one or two hospitals be identified within each strategic health authority area (average population in England – 5 million) so that patients can be transferred if required.

MANAGEMENT IN SPECIALIST EATING DISORDER UNITS

MEDICAL EXPERTISE ON THE SEDU

Medical, nursing and dietetic staff on SEDUs have a clear responsibility to gain and maintain the appropriate level of knowledge of nutritional

problems and their avoidance and treatment. For doctors this means medical knowledge at a higher level of sophistication than is usually encountered or required in psychiatry. Medical eating disorders staff should, as part of their postgraduate training, attend a course in clinical nutrition, such as that organised by the Intercollegiate Group on Nutrition. Areas of expertise include assessment of nutritional state, clinical risk, prevention and treatment of re-feeding syndrome and management of oral and nasogastric feeding. Our view is that, because of the difficulty of addressing behavioural problems on a general medical unit, patients should be treated on a SEDU unless services required in their management are not available. This means that for some units, more medically ill patients will be treated in the SEDU than before and medical expertise among SEDU staff may therefore need to be at a higher level. Some patients will need transfer, for example to evaluate potentially serious symptoms. However, they should be returned to the SEDU as soon as possible as long as the medical services they require are available there (Appendix 3).

DEDICATED PHYSICIAN TO THE SEDU

To maximise medical expertise in the SEDU, we advise that a specific consultant physician, preferably with an interest in nutrition, is identified as a link for the SEDU. Ideally, a service-level agreement should be negotiated between trusts for a specified number of sessions of a consultant physician who would have the role of advisor to the SEDU staff and also be available for teaching and discussion, as well as consultation about individual patients. The physician should be available to discuss abnormal results, and to supervise and teach on-call doctors who may be placed in the position of advising SEDU staff.

CRITERIA FOR TRANSFER TO A MEDICAL UNIT

Patients who do not require the specialist expertise and equipment available on medical units but not on SEDUs should in general be transferred back to the SEDU. The decisions will need to be taken with reference to local provision as well as the clinical state of the patient. Facilities not generally available on SEDUs are listed in Box 2 (p. 16), whereas those that should be provided are listed in Box 10.

PRACTICAL CONSIDERATIONS

The majority of patients in SEDUs have their own rooms. However, medically compromised patients may require some modifications so as to allow special beds (with a ripple mattress, facilities for raising foot and head, and other features), drip stands, at least for nasogastric feeding, special flooring (e.g. wooden to protect against spilt feed) and similar alterations.

SEDATION OF RESISTING OR AGITATED PATIENTS

Sedation may be a difficult problem in a resisting patient (for general guidance see Fricchione *et al*, 2008). It is rare for a severely ill patient to engage in active resistance to attempts to feed them, but it does happen.

There are many medical problems that could arise when a dose of a sedative drug is given to a severely nutritionally compromised patient.

Box 10 SERVICES PROVIDED BY THE SEDU

We suggest that SEDUs be ready to provide all of the following services, which were found to be provided in the majority of the SEDUs that we surveyed:

- nasogastric insertion and feeding
- daily biochemistry
- frequent nursing observations
- prevention of symptomatic behaviours (water drinking, absconding, exercising, etc.)
- daily ECGs (and expertise at reading them)
- sedation of a resisting patient
- use and management of the Mental Health Act
- treatment of pressure sores
- immediate cardiac resuscitation.

We understand that some units would need to extend their range to meet these requirements. For example, some units currently do not accept patients under the Mental Health Act, but we would not regard this as acceptable in a service which may be the only specialist unit in a particular part of the country.

We requested information on practice by eating disorders psychiatrists and received a number of responses from different units (Appendix 6). Overall, the practice can be summarised thus:

- drugs used include oral and parenteral benzodiazepines and oral olanzapine
- concerns are to use the lowest dose possible because of the risk of physical complications, especially hypotension and respiratory arrest, in a profoundly malnourished patient
- frequent monitoring in medical intensive care for the most severely compromised patients
- some units have reported using two or three nurses continuously to restrain a resistant patient (e.g. continually pulling out a percutaneous endoscopic gastrostomy (PEG) tube)
- close working between psychiatrists, physicians and anaesthetists is essential.

TREATMENT OF CHILDREN AND ADOLESCENTS UNDER 18

This report has concentrated on the needs of seriously ill adults with anorexia nervosa. However, the needs of children cannot be fully separated. Some medical units are admitting children as young as 14 and their adult-oriented physicians require help from both psychiatric and paediatric services to manage them appropriately. Moreover, several SEDUs admit patients as young as 13 and their needs are often being managed by clinicians with adult-oriented training. Many of the issues will be similar but some, such as the rate of physical deterioration, can be frighteningly different. Moreover, the

legal issues attending the involuntary treatment of children are substantially different from those relevant to adults. We recommend that an equivalent report, concentrating on the issues that apply to the under-18 age group, should be produced by clinicians dealing primarily with younger patients.

AREAS WITH LIMITED LOCAL EATING DISORDER PROVISION

RESPONSIBILITIES OF HEALTH COMMISSIONERS

The Royal College of Psychiatrists' (2000) report on eating disorders recommended:

Purchasers should establish adequate local services, shared with other purchasers when appropriate, led by consultant psychiatrists, to meet locally identified need. A ratio of one full-time equivalent (FTE) consultant post per million population should be provided for eating disorders in adults... We recommend the provision of six beds (or a combination of fewer beds and intensive day places) per million population, together with two or three local out-patient clinics, for patients over 16 years of age. The total cost of this per million population is likely to reach approximately £1m (p. 7).

The report is under review and further advice on provision will be made. However, we urge all purchasers to ensure as soon as possible that people living in their areas have access to a specialist eating disorders service with a consultant psychiatrist in eating disorders who can act as a source of support for both general and liaison psychiatry services and physicians providing care for patients in the MARSIPAN category.

RESPONSIBILITIES OF LOCAL PROVIDERS

Lack of accessible specialist eating disorders provision is a substantial problem for sparsely populated areas, for those separated from the mainland as well as those far from the nearest SEDU.

We propose the following principles of service provision.

- 1 Identify a local psychiatrist with training in eating disorders and a local physician with training in nutrition.
- 2 If either is unavailable, the primary care trust or equivalent should identify suitable consultants and arrange for them to be trained by a recognised expert. They should be joined by a dietician and a nurse to form a local MARSIPAN group.
- 3 Develop a clear local policy on MARSIPAN cases, to include identification, resuscitation and preparation for transfer to a suitable unit with experience in the field.
- 4 In places such as Northern Ireland, requiring air travel to access SEDUs, acute medical units require help to deal with patients who are at risk of sabotaging their treatment. There should be a high level of eating disorders input with frequent visits from a doctor or nurse from a specialist eating disorders service, and active supervision of any nurses providing one-to-one observation of the patient to make them fully aware of behaviours to look for and what to do if they observe them.

- 5 Use of air ambulance: there is some limited experience in places such as Northern Ireland with no SEDU available. Patients are admitted to a suitable bed and medically stabilised before transfer by air ambulance to a unit on the mainland. It is clear, however, that because these patients are so frail, they cannot be allowed to sabotage their treatment, so use of the Mental Health Act and combined medical treatment and psychiatric monitoring and restraint may be required. Owing to the rarity of this situation, such intensive care is not usually available and this is a substantial gap in provision which could have very serious consequences for the individual involved. We recommend that occasional high-dependency care should be available, funded separately by the local National Health Service (NHS) funding body, to provide intensive medical and psychiatric care for such patients.
- 6 On the mainland, given the exposure to cold that may accompany air ambulance travel, the advantage of a shorter journey should be weighed against the safer environment of a road ambulance with a longer journey time.

Audit and review

CASE REPORTING

We would welcome the introduction of a case reporting system for patients such as those described here.

The Royal College of Psychiatrists, Eating Disorders Association BEAT and National Patient Safety Agency wish to collate information on all deaths from eating disorders so that the maximum possible can be learnt from these tragic events. The contact for this is Dr John Morgan (john.morgan@leedspft.nhs.uk). All clinicians are urged to provide information, as many cases are missed because the eating disorder may not be cited on a death certificate.

QUALITY REVIEW OF SERVICES AVAILABLE

The Royal College of Psychiatrists is embarking on a nationwide quality network in which SEDUs will be assessed for quality of service provision. It may be possible to include arrangements for medical care of patients seen in SEDUs in the quality network assessment.

LOCAL GOVERNANCE

Each medical and eating disorders unit must monitor quality of provision for management of severely ill patients with anorexia nervosa. A clear policy should be generated jointly and available in each setting. Any serious incident or 'near miss' should be investigated jointly and a report issued which highlights changes in psychiatric or medical services or in liaison which should take place. Such recommendations should be followed up within a reasonable time frame, for instance 3–6 months, to establish that the changes have occurred.

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Appendix 1

Some cases reported to the MARSIPAN group by colleagues

We reproduce below extracts from messages received from a number of colleagues. In each case we propose the likely problem that caused the outcome reported.

FAILURE TO USE THE MENTAL HEALTH ACT

'A few years ago a male patient died, most likely related to his anorexia nervosa. He had been assessed by two psychiatrists and the team looking after him were advised he couldn't be force-fed.' (Physician)

'I am ... concerned at that 'grey' area when a severely anorexic patient ends up in accident and emergency, refusing treatment, food or indeed even liquid. I wonder if your group (MARSIPAN) would be able to secure more willingness to admit these patients against their will by medical teams? We have had our daughter in accident and emergency for 24 hours on one occasion, 11 of those hours waiting for the duty psychiatrist who then said he couldn't section her despite a cannula being inserted ready for her imminent collapse/coma.' (Parent of young woman with anorexia nervosa)

This shows that some clinicians (including psychiatric staff) are unaware that compulsory treatment is sometimes (albeit rarely) indicated in order to save the life of a patient with anorexia nervosa.

PHYSICIAN AND GENERAL PRACTITIONER APPARENTLY PROVIDING PALLIATIVE CARE FOR A PERSON WITH SEVERE ANOREXIA NERVOSA

'I would be grateful for opinions on a patient with anorexia nervosa who has a BMI of 9.4 currently under the care of a physician. She is in her mid-fifties with anorexia nervosa since adolescence. She has somehow in the past evaded and refused specialist psychiatric input. She is not being referred to our service as she is essentially being treated by the physician and general practitioner (GP) as having a terminal condition.' (Eating disorders psychiatrist)

This indicates that some clinicians take the view that palliative care is sometimes indicated in anorexia nervosa when the patient has not had a course of intensive treatment.

PSYCHIATRY SEEMS TO DISAPPEAR FROM THE SCENE

'Two to three times a year I get a frantic phone call about keeping some young girl alive. We have had two deaths in 10 years from memory. The problem is that the ward is full of patients with Crohn's disease and the general medical component has lots of heavy-nursing-dependent elderly patients. Also, psychiatry seems to disappear from the scene once the patient is in such a poor physical shape.' (Physician)

This shows that treating patients with anorexia nervosa in medical wards is difficult and that physicians sometimes feel unsupported by psychiatric colleagues.

FAILURE TO CONTROL EATING-DISORDERED BEHAVIOURS CAN BE FATAL

'A 24-year-old female, BMI 11, on a general medical ward, who prior to a planned move to an eating disorders unit exercised by standing and wiggling her toes and fingers for the whole weekend, day and night, in front of two 'special nurses', before collapsing and dying from hypoglycaemia on the Monday morning.' (Eating disorders psychiatrist)

This indicates that severity of physical state can be underestimated and that non-specialist psychiatric nurses may be unprepared to challenge behaviours (such as micro-exercising, as here) in patients with anorexia nervosa that can contribute to a fatal outcome.

'A 19-year-old female patient (BMI 10) with renal failure on a medical ward who turned off her dextrose drip, intended to rehydrate her and restore renal function, because having read the bottle she thought it had too many calories. She died within a few hours.' (Eating disorders psychiatrist)

This shows how powerful the drive for thinness can be.

COLLAPSE OF LOCAL EATING DISORDER SERVICES

'We meet a lot of these cases and indeed have just submitted a case series of 14 seen in 1 year to the British Society of Gastroenterology as an abstract. One of these died but nearly all had quite severe electrolyte disturbances, renal failure, etc. The high number may reflect the fact that our local eating disorders services have pretty much collapsed in the past couple of years.' (Physician)

This points to problems with local eating disorder services as well as the major medical problems faced by patients with severe anorexia nervosa.

COLLABORATIVE RELATIONSHIPS CAN IMPROVE THE OUTCOME

'If any anorexic is admitted for any reason to the trust...the site manager...directs the admission to the gastroenterology ward. I am made aware of the patient and usually take over. I have a very good working relationship with the eating unit psychiatrist and we always talk about emerging medical problems.' (Physician)

This shows that the systems can work.

SHORTCOMINGS IN MEDICAL MANAGEMENT

'She was looked after by the general physicians who had no clue as to the severity of her illness (despite an abnormal ECG, abnormal biochemistry and a BMI that must have been about 12). They did virtually nothing and the family said they were "discriminatory" against her...The cause of death was given as septicaemia but I doubt this.' (Physician)

This indicates that medical management of patients with severe anorexia nervosa in medical wards is sometimes less than satisfactory.

FAILURE TO RECOGNISE RE-FEEDING SYNDROME

'An 18-year-old female who died after admission with re-feeding syndrome undetected by the medical team. The general psychiatric team had refused referral to a specialist service.' (Eating disorders psychiatrist)

Failure to recognise re-feeding syndrome and possible mismanagement by the psychiatric team.

OVERCAUTIOUS RE-FEEDING

'We have someone with BMI around 10 at the moment and the dietician wanted to start with 220 calories per day – the medical consultant and I both over-ruled and started with around 1000, because she was having repeated severe hypoglycaemia.' (Eating disorders psychiatrist)

This indicates the very difficult balance between providing enough calories to prevent hypoglycaemia and weight loss, yet not provoking a dangerous re-feeding syndrome.

'A female patient of 20 years with BMI of 13 was transferred from the eating disorders ward to a local accident and emergency because of chest pain. In accident and emergency cardiac causes were excluded but she was admitted to a medical ward where she was given a very low calorie intake, around 200 calories per day. She remained in the ward while mild liver abnormalities were investigated and died after 5 days in hospital.' (Eating disorders psychiatrist)

This shows that inappropriate investigation of mildly abnormal test results can lead to inappropriately prolonged general hospitalisation and that very low calories without early and frequent monitoring and review may contribute to a fatal outcome in patients with anorexia nervosa (underfeeding syndrome).

SELF-INDUCED RE-FEEDING SYNDROME

'A male anorectic in his mid-thirties was admitted because of critical further weight loss and some mild electrolyte abnormalities on a Friday afternoon. He had a weight of 36 kg, a BMI of about 13 and had lost about 3 kg in the past 2 weeks with very little recent food intake. His potassium was 3.1, his phosphate was 0.6 and my nutrition support team felt he was at very high risk of re-feeding problems. They recommended that he be started on just 10 kcal/kg/day, i.e. a target of 350 kcal in 24 hours, but with blood tests on Saturday morning to check on K, Mg and PO₄ levels so that this could be doubled if no problems had arisen. The team wanted to do this via controlled nasogastric feeding but he refused, although he was happy to accept 30 ml of 1 kcal/ml sip-feed administered and observed to be drunk by the nurses 2-hourly, day and night. He was also given high oral doses of phosphate and potassium supplements. On Saturday morning, he was well and his blood tests showed normal K, MG and PO₄ levels and his 2-hourly sip-feeds were increased to 40 ml as planned, with the aim to repeat the same process on Sunday morning. However, he was found dead in bed at about 6 am on Sunday morning, apparently having persuaded the night staff to let him have more sip-feed since he 'had decided to take more so that he could get out of hospital quickly'. They had thought it was helpful to agree to his wishes. We think he had consumed two cartons sometime between 11.00 pm and his death.' (Nutrition physician)

Correct management of the patient's re-feeding risk was sabotaged by the patient who increased his initial intake beyond a safe level.

FATAL RE-FEEDING SYNDROME INDUCED AT 15 KCAL/KG/DAY

'A 37-year-old alcoholic with chronic pancreatitis but no liver disease presented with about 20% weight loss over 3 months and a BMI of 16. Her recent intake had been very poor due to pain and probably included a lot of alcohol. She had diabetes but did not have hyperglycaemia on admission. Her intestinal absorption was probably poor. Her amylase on admission was normal as were her urea and electrolytes, but nevertheless it was recognised that she was dehydrated since her urea was normal rather than very low. Her phosphate was 0.8, her magnesium was not measured.

The case preceded the publication of the NICE guidance and she was not reviewed by a senior dietician or the nutrition support team. A nasogastric tube was inserted and she was commenced on approximately 15 kcal/kg/day. She was also given intravenous normal saline. However, 8 hours after commencing her feed she became breathless and over 20 minutes she became hypoxic and had a cardiac arrest in ventricular fibrillation from which she could not be resuscitated. A blood sample taken during the first few minutes of her acute decline was later reported as showing potassium 2.0 and phosphate 0.2. Her blood glucose was 5.0.' (Nutrition physician)

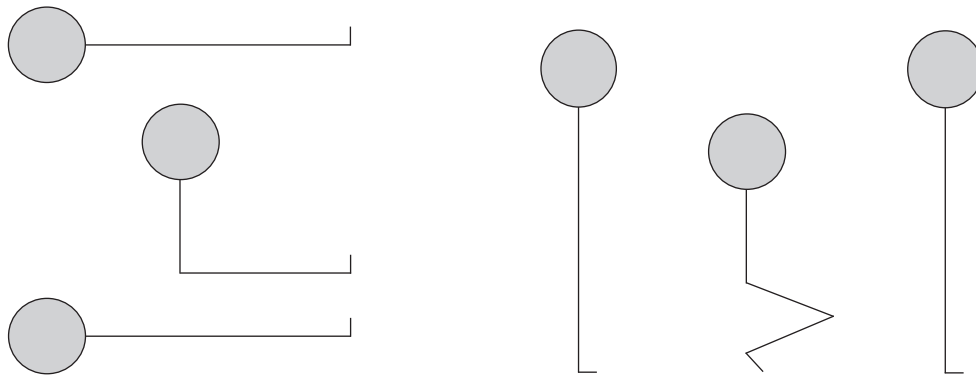
This is a case of a patient with multiple pathologies in whom a very slow introduction of nutrition might have averted a fatal outcome.

Appendix 2

Modified Newcastle guideline for MARSIPAN cases

GUIDELINES FOR THE MANAGEMENT OF REALLY SICK PATIENTS WITH ANOREXIA NERVOSA (MARSIPAN) ON GENERAL PSYCHIATRIC WARDS OR MEDICAL WARDS

- 1 Introduction
 - 1.1 This protocol has been developed to offer guidelines in the care of a recently admitted patient with severe anorexia nervosa (defined as body mass index less than 15) for the physicians, psychiatrists, nursing staff and dieticians involved in their care.
 - 1.2 Nasogastric feeding is associated with significant physical risks, including re-feeding syndrome. Therefore, nasogastric feeding should usually be commenced on a medical ward. Once medically stable, the patient can be transferred to a psychiatric ward. The timescale for this can vary, but because of the difficulties managing patients' behaviour on medical wards it should not normally extend beyond a few days. Some special eating disorders units (SEDUs) may be able to initiate nasogastric feeding if adequate medical monitoring can be provided.
 - 1.3 By the nature of their illness, MARSIPAN patients require care from various professionals and regular multidisciplinary review is vital to coordinate this care.
- 2 Physical health issues (joint medical and nursing care)
 - 2.1 On admission
 - 2.1.1 Physical examination – a comprehensive physical examination is required including checking for bradycardia and postural hypotension, hepatomegaly and the SUSS test (Fig. 1). Abnormalities in any of these clinical signs are important indicators of physical risk.
 - 2.1.2 Physical investigations – these are outlined in Table 1. On the ECG prolongation of the QTC interval to more than 450ms and bradycardia of <40bpm are thought to be important risk factors.



1. Sit-up: patient lies down flat on the floor and sits up without, if possible, using their hands.

2. Squat-Stand: patient squats down and rises without, if possible, using their hands.

Scoring (for Sit-up and Squat-Stand tests separately)
 0: Unable
 1: Able only using hands to help
 2: Able with noticeable difficulty
 3: Able with no difficulty

Fig. 1 Sit up–Squat–Stand test (Robinson, 2006, p. 63).

Table 1 Physical investigations for seriously ill patients with anorexia nervosa during re-feeding

Baseline	FBC Urea and electrolytes Phosphate, calcium, magnesium, albumin, CRP LFTs Glucose (by POCT on a glucose meter on the ward and/or laboratory method) Zinc, copper, selenium Iron profile, vitamin B12 and folate Vitamin A/E and carotene Vitamin D Thyroid function Weight – early morning weight after voiding ECG
Daily	Urea and electrolytes, phosphate, calcium, magnesium – daily for 1 week, then twice weekly Glucose by POCT method before main meals
Twice weekly	FBC LFTs Weight
Monthly	Copper Zinc ECG

CRP, c-reactive protein; ECG, electrocardiogram; FBC, full blood count; LFT, liver function test; POCT, point of care testing

2.1.3 Nursing assessment and care plan formulation

- Bed rest: required in view of compromised physical state of patient.
- Fluids: often patients drink large amounts of fluid causing dangerous overloading and electrolyte disturbance, therefore fluid balance should be carefully monitored and excessive intravenous provision avoided.
- Supervise showers and washes: owing to patient's compromised physical state, to monitor for abnormal behaviours.
- Toilet supervision: owing to patient's compromised physical state, to monitor for abnormal behaviours.
- Meals: patients should be encouraged to take an appropriate diet, in consultation with dietetic staff, alone and to supplement nasogastric feeding.
- Leave: patients not under the Mental Health Act cannot legally be prevented from leaving the ward. However, it should be recognised that they may be using these opportunities to exercise and in other ways sabotage weight gain.
- Physical observations: patients are vulnerable to hypothermia and hypoglycaemia; as well as carrying out physical observations, ensure room is kept warm (Table 2).

Table 2 Points to consider in care plan formulation

	Severe anorexia nervosa	
	BMI <13 high risk	BMI <15 moderate risk
Bed rest	24 hours for most patients (consider deep vein thrombosis prophylaxis) Risk assessment for tissue viability Liaise with tissue viability nurse regarding a special mattress	Periods of bed rest may be introduced Rest in social settings
Fluids	Input and output to be measured (supervised) Liaise with dietician Water supply in room to be turned off to reduce fluid overloading if this is problematic	Liaise with dietician regarding fluid balance May need to consider turning off water to reduce fluid overloading
Showers/washes	Supervised washes ONLY within bedroom area recommended	Supervised showers recommended to monitor physical well-being and activity
Toilet	Supervised to ensure physical safety and accurate fluid balance	Unsupervised (but fluid balance monitoring may be required)
Nutrition	Liaise with dietician regarding nasogastric feeding Supervised (and up to 30 minutes post-meal supervision) All meals to be advised by dietician Monitor for effects of re-feeding syndrome	Supervised (and up to 30 minutes post-meal supervision) All meals to be advised by dietician
Leave	No leave when on medical ward	Short periods in wheelchair where appropriate (depending on physical well-being) No unaccompanied leave
Physical observations	Blood pressure, pulse and core temperature (four times daily) Blood glucose four times daily before meals using BM machine and finger prick	Blood pressure, pulse and temperature (twice daily) Blood glucose (daily – depending on physical well-being)

BM, blood glucose

3 Mental health issues

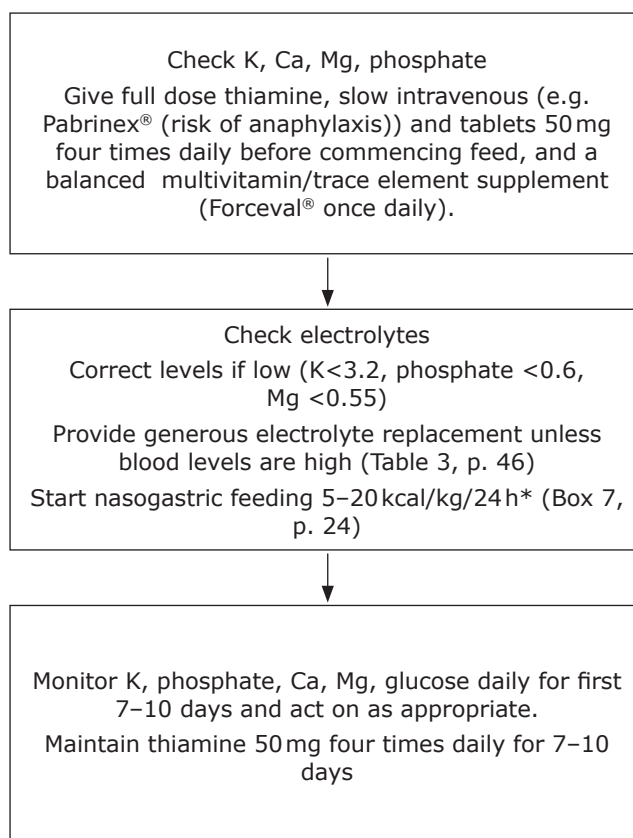
- 3.1 On admission, mental state examination is required, focusing on ideas of self-harm and/or suicide as well as ideas and behaviours aimed at weight loss. Mental state examination should be kept under review throughout the patient's treatment.
- 3.2 Professionals are aiming for a collaborative stance in the management of the patient and aiming for the patient to be able to manage their own physical health needs, including adequate nutrition as a long-term aim.
- 3.3 The Mental Health Act Commission Guidance Note is a useful reference guide (Mental Health Act Commission, 1997; Care Quality Commission, 2008). Anorexia nervosa is a mental disorder within the terms of the Mental Health Act. For patients with severe anorexia nervosa who are physically ill and who are refusing treatment, use of the Mental Health Act should be considered.
- 3.4 Eating disorders often co-occur with depression and/or obsessive-compulsive disorders. Common practice in the treatment of these comorbid illnesses is the use of selective serotonin reuptake inhibitors (SSRIs). However, if the patient is already on alternative treatment to which they are responding well, this need not be altered as long as their cardiac function is stable, as well as their liver function tests. If a patient is not already on psychotropic medication, it is recommended not to start treatment until they are medically stable. It may also be appropriate to consider use of the Mental Health Act when there is comorbid depression, including significant risk of suicide.
- 3.5 Indications for liaison with psychiatric colleagues regarding the necessity for constant nursing observation may include:
 - tampering with feed or infusion
 - self-harm
 - extreme distress
 - aggression
 - excessive exercise (including covert behaviour and 'micro-exercising').
- 3.6 Patients on constant observation can be very challenging to nurses. Behaviours such as falsifying weight, disposing of feed and exercising on the bed must be identified and addressed effectively by staff.

4 Re-feeding of patients

Nasogastric feeding (Fig. 2) is associated with significant physical risks, including re-feeding syndrome. Re-feeding syndrome is characterised by fluid and electrolyte shifts, the consequences of which include hypophosphataemia, hypokalaemia, hypomagnesaemia and altered glucose metabolism. This may affect many body systems and even cause death. Hence, nasogastric feeding should be commenced on a medical ward unless adequate monitoring and treatment is available on a SEDU. Advice on the safe implementation of nasogastric feeding can be found on the National Patient Safety Agency website (National Patient Safety Agency, 2005, 2009).

NOTES ON INTRAVENOUS ELECTROLYTE REPLACEMENT

- Intravenous electrolyte infusions should always be given via an electronic infusion pump.
- ECG monitoring may be indicated.
- All serum electrolytes should be measured at least daily in patients receiving intravenous replacement and dosages should be adjusted accordingly.
- Intravenous replacement should usually be carried out under the supervision of a physician.
- Specialist medical or biochemical advice may be required in cases of severe electrolyte depletion.
- Beware of possibility of renal impairment with only modestly elevated urea and creatinine, and danger of serious electrolyte disturbance during rehydration.



*First 24 hours, limit calorie intake to between 5 and 20kcal/kg/day, depending on clinical risk factors. For initial feeding at over 15kcal/kg/day, increase energy intake by 10–20% every 2–3 days until basal metabolic requirement (BMR) intake is achieved. If low initial calorie levels are used (5–15kcal/kg/day, Box 7, p. 24), clinical and biochemical review should be twice daily with calories increased in steps to 20kcal/kg/per day within 2 days unless there is a contraindication. Once BMR intake is established and the patient is physically stable, it is recommended that 10% is added if bed-bound and 15–20% if mobile. Once this is achieved, an extra 400kcal can be added to facilitate weight gain. Careful monitoring of blood glucose is essential during this period. Note that hypoglycaemia, pyrexia or hypothermia, and either a rise or fall in white blood count may indicate hidden infection rather than lack of food.

Fig. 2 Nasogastric re-feeding in patients with severe anorexia nervosa.

Table 3 Examples of electrolyte replacement therapy¹ (equivalents to the proprietary preparations named may be available; the examples here do not constitute recommendations of specific brands)

	Oral	Intravenous (only if severe)
Hypokalaemia	Sando-K [®] 4–8 tablets per day, or equivalent	For example, potassium chloride 20–40 mmol in sodium chloride 0.9% 500–1000 ml, as required. Higher doses (e.g. 20 mmol over 2–3 hours) may be required in severe cases but should only be given with ECG monitoring and under appropriate medical supervision
Hypophosphataemia ²	Phosphate-Sandoz [®] 4–6 tablets daily, or equivalent	Phosphates (e.g. Addiphos ^{®3}) 10 mmol phosphate over 12 hours for phosphate <0.5 mmol/l
Hypomagnesaemia	Maalox [®] suspension 10–20 ml daily, or equivalent	30 mmol MgSO ₄ in 500 ml 5% dextrose or saline over 24 hours if Mg < 0.4 mmol/l; ECG monitoring must be available
Hypocalcaemia	Calcichew [®] 1–3 tablets daily, or equivalent	Calcium gluconate injection (10%) 10 ml (if Ca < 1.8 mmol/l)

ECG, electrocardiogram

1. Use oral as the preferred route unless medically indicated

2. The serum calcium may drop during phosphate supplementation

3. Clinicians should be aware that Addiphos contains 30 mmol of potassium per 20 ml. It must be given adequately diluted. The infusion bag should be shaken well before hanging, and during administration, to ensure that potassium remains adequately mixed with the infusion fluid.

Appendix 3

Survey questionnaire sent to members of the Eating Disorders Section electronic mailing list

Dear Colleague,

These questions are addressed to those of you who work in specialist in-patient eating disorder services and come from MARSIPAN, a multi-Royal College, multiprofessional group looking at the problems of managing the sickest patients with anorexia nervosa (the acronym stands for Management of Really SICK Patients with Anorexia Nervosa). We were asked by the Eating Disorders Section of the Royal College of Psychiatrists and the British Association for Enteral and Parenteral Nutrition (BAPEN) to come up with some advice in this area.

One of our issues is how to determine when a patient cannot be managed in an eating disorders unit, but needs transfer to a medical ward. The problem is that when they get transferred, their behaviour sabotages treatment and they sometimes die, in spite of the best efforts of the medical team. We know of at least a dozen young people who have died in this way. To reduce the death rate, changes may need to be made in both eating disorders units and medical services. We wish, therefore, to give realistic thresholds for transfer to medical services, based on what eating disorders units can cope with.

For each of these services, please say Y for Yes, N for No, and M for Maybe. If you put M, please say what the decision would rest upon (e.g. availability of nurses, more equipment, training). It would be particularly useful to know what extra resources you would need in order to look after sicker patients.

Please answer as quickly as you can (many will be able to answer the questions from your experience without much reference to documentation).

1. Nasogastric tube insertion and feeding []

2. Intravenous infusion []

3. Artificial ventilation []

4. Frequent (e.g. daily) biochemical monitoring []

- 5. Frequent nursing observations []
- 6. Prevention of symptomatic behaviours (exercise, vomiting, pulling out tubes, etc.) []
- 7. Cardiac monitoring with rapid detection of abnormalities []
- 8. Central venous line: insertion and management []
- 9. Intravenous nutrition (total parenteral nutrition) []
- 10. Sedation of resisting patient []
- 11. Application and management of the Mental Health Act []
- 12. Treatment of pressure sores []
- 13. Immediate treatment of cardiac arrest []
- 14. Cardiac resuscitation ('crash') team []
- 15. Management of serious medical complicating illness (e.g. lobar pneumonia) []

Additional comments (extra services I have missed out, your views on what is required):

Name of unit

Address

Trust/organisation

email address@.....

Name of informant

Thank you so much. This will both help us provide better guidance and help to identify centres around the country where patients could be sent if local services cannot cope.

RESULTS OF SURVEY

Of ten eating disorder units in the UK, the number able to provide the medical and psychiatric care as stated in the questionnaire was:

- 1 nasogastric insertion and feeding: 8

- 2 intravenous infusion: 3
- 3 artificial ventilation: 0
- 4 daily biochemistry: 10
- 5 frequent nursing observations: 10
- 6 prevention of symptomatic behaviours (e.g. water drinking, absconding, exercising): 9
- 7 24-hour cardiac monitoring: 1
- 8 central venous line: 1
- 9 total parenteral nutrition: 0
- 10 sedation of a resisting patient: 9
- 11 use and management of the Mental Health Act: 8
- 12 treatment of pressure sores: 8
- 13 immediate cardiac resuscitation: 9
- 14 cardiac resuscitation ('crash') team: 4
- 15 treatment of serious medical complications, such as pneumonia: 0
- 16 daily electrocardiograms (not in the questionnaire, but mentioned by 6 respondents): 5

Appendix 4

Compulsory treatment

THE MENTAL HEALTH ACT

Different acts and procedures pertain to Northern Ireland and Scotland and appropriate guidance should be consulted there, see the Mental Health Act Code of Practice.

Some of the information we received suggested misconceptions about compulsory treatment.

The Mental Health Act 1983, for which an amended version has now been introduced, allows for compulsory treatment under Section 3 of the Act on the grounds that:

(a) he is suffering from [mental disorder] of a nature or degree which makes it appropriate for him to receive medical treatment in a hospital; and

(c) it is necessary for the health or safety of the patient or for the protection of other persons that he should receive such treatment and it cannot be provided unless he is detained under this section.

Section 3 requires a recommendation from a psychiatrist, a second recommendation from another doctor (generally the GP or another psychiatrist) and an application from an approved mental health practitioner (formally an approved social worker).

Moreover, a patient already in hospital (e.g. in a hospital medical ward) can be detained under Section 5(2) by the doctor in charge of their care for up to 72 hours, while assessment under Section 2 or 3 is arranged.

A person who is a voluntary patient in hospital can be legally detained there if a registered medical practitioner provides the Mental Health Act managers with an appropriate report.

It has been clarified in the Mental Health Act that anorexia nervosa is a mental disorder (Mental Health Act Commission, 1997) and that feeding (including nasogastric feeding and a nasal loop to impede removal if required) is regarded as treatment for the disorder, and so is permissible against the patient's will under the Act. Such treatment is lawful under Sections 2 and 3. Under other circumstances it may be necessary to administer urgent life-saving treatment under common law.

It is sometimes difficult to accept that a highly intelligent and articulate young person who promises to adhere to treatment may in fact be completely unable to do so as a result of a potentially fatal drive for thinness. In fact, English law is more inclusive than law in other countries, such as

Italy where patients with anorexia nervosa have to be virtually moribund to be compulsorily detained.

When a patient is on a medical ward, the consultant physician, before the 2007 amendments, used to be able to act as the responsible medical officer, to be in charge of compulsorily detained patients on a medical ward. This is no longer the case. The professional (now termed the responsible clinician) in charge of a detained patient needs to be an approved clinician. This role is only open to psychiatrists and certain other professions after special training and experience. This means that to have a detained patient in a medical ward, a responsible clinician has to be appointed. If this does not occur, the detention is illegal and the ward staff could be sued for assault if any treatment is enforced. A responsible clinician (in this context, in practice, a consultant psychiatrist) can be recruited in one of two ways:

- 1 When the patient is placed on the section, the bed is found within the mental health trust and the patient is immediately sent on leave (under Section 17 of the Mental Health Act) to the medical ward. The responsible clinician is now one of the mental health trust consultants and advises on treatment while the patient is in the acute trust on Section 17 leave.
- 2 A psychiatrist from the mental health trust admits the patient to the medical ward under their consultant care, perhaps jointly with a medical consultant. This psychiatrist could be (and would preferably be) a specialist in eating disorders psychiatry but could also be, for example, a consultant liaison psychiatrist or the catchment area consultant psychiatrist, responsible for the patient's home address or GP area. This option would require that the consultant psychiatrist is granted an honorary contract with the acute trust.

Both solutions would require that the psychiatrist attend the ward to see the patient and consultant with the ward staff as often as necessary to manage care effectively.

MENTAL CAPACITY AND CONSENT

The Mental Capacity Act 2005 is distinct from the Mental Health Act. In the latter, the question is: Does the patient suffer from a mental disorder that is both harmful and requires in-patient care? In consideration of mental capacity the question is: Can this patient make an informed decision about proposed treatment at present?

The following is adapted from the Code of Practice to the Mental Capacity Act 2005 (Department for Constitutional Affairs, 2007). It applies to people over 16, but see the Code (para. 12.8–12.20) for 16- and 17-year-olds.

- Stage 1: Does the person have an impairment of or a disturbance in the functioning of their mind or brain?
 - 1 Mental illness is one of the listed causes of impairment. Anorexia nervosa is a mental illness and so it could lead to loss of capacity.
- Stage 2: Does the impairment or disturbance mean that the person is unable to make a specific decision when they need to?

A person is unable to make a decision if they cannot:

 - 1 understand information about the decision to be made
 - 2 retain that information in their mind

- 3 use or weigh that information as part of the decision-making process, or
- 4 communicate their decision (by talking, using sign language or any other means).

Assuming the patient is conscious, they are likely to meet tests 1, 2 and 4. However, because of the patient's mental disorder which may cause extreme drive for thinness, even if life-threatening, capacity to meet test 3 may be impaired. Thus, the patient may not have the capacity to decide whether or not to accept treatment (e.g. nasogastric feeding).

Note that capacity is assessed by whoever is providing the intervention (a physician, dietician or psychiatrist in the case of nasogastric feeding). However, if capacity is uncertain, a formal evaluation of capacity by, for example, a psychiatrist or a psychologist may be required.

Patients refusing treatment may appear to possess capacity if judgements are made using the same framework as might be applied in schizophrenia or dementia. However, capacity assessments need to consider the values and beliefs of the individual with considerable subtlety, and this can be challenging for psychiatrists not used to assessing capacity in individuals with eating disorders. As a result, there can be considerable variation in practice across the UK. Where doubt exists, seeking a second opinion from an eating disorders specialist is strongly recommended.

CONSENT TO TREATMENT IN YOUNG PEOPLE

Young people under 16 are sometimes admitted to adult wards, although this is usually discouraged. Assessing competence is informed by the 'Gillick decision':

'For many years the criteria that have been referred to as the test for Gillick competence have provided clinicians with an objective test of competence. This identifies children aged under 16 who have the legal capacity to consent to medical examination and treatment, providing they can demonstrate sufficient maturity and intelligence to understand and appraise the nature and implications of the proposed treatment, including the risks and alternative courses of actions' (Wheeler, 2006).

Further discussion of the complex area of consent for children is outside the scope of this report and includes the Children Act 1989, parental consent and the application of the Mental Health Act to children.

Appendix 5

Use of initial low-calorie feeding rates in anorexia nervosa

We asked physicians and psychiatrists on the MARSIPAN group as well as others from the Eating Disorders Section electronic mailing list to indicate how many calories they would provide for a patient with anorexia nervosa weighing 32kg, who had not eaten for 3 weeks before admission. The mean (s.e.m.) results were:

- a those working on medical units: 412.3 (66.4)kcal/day (13kcal/kg/day)
- b those working on eating disorder (psychiatric) units: 825 (65)kcal/day (25.8kcal/kg/day).

This issue has not been fully resolved. It emerged that for doctors working in specialist eating disorder units, an average starting intake of 20kcal/kg/day had been found to be safe. However, for those working in medical wards, that starting intake had sometimes been associated with fatal re-feeding syndrome, and a lower starting intake commencing at 5–10kcal/kg/day was suggested with early review (12 to maximum 24 hours) to ensure that any problems generated are corrected and allowing feeding rates to increase. That rate must increase to 15–20kcal/kg/day within 48 hours unless there are continuing biochemical and clinical problems that preclude such an increase.

The view was expressed that lower calorie intakes were sometimes appropriate under the following circumstances:

- significant ECG abnormalities
- substantial electrolyte abnormalities at baseline (before feeding starts)
- active comorbidities, infections etc.
- significant comorbidities, especially cardiac, including heart failure
- very low initial weight (BMI <10) may require fewer calories initially
- patient has not yet started thiamine and other vitamin replacements
- when beginning enteral (e.g. nasogastric) feeding.

Appendix 6

Drug treatment during assisted nutrition in patients extremely agitated and resistant to treatment

General points:

- drug uses specifically for assisted nutrition should be kept to a minimum
- benzodiazepines are the drug of first choice; other drugs may have significant effects on blood pressure and cardiac rhythm
- wherever possible, drugs should not be prescribed on a regular or long-term basis but for specific occasions
- a drug regime should be tailored to avoid the development of tolerance (short-term use, drug holidays etc); drug use should be closely monitored and formally reviewed at least weekly.

Individual units reported the following use of medication:

■ **Unit 1**

- Chlorpromazine 100–200 mg four times daily oral, plus diazepam building up to 15 mg four times daily
- For patients with lower BMI use only diazepam because of hypotension risk

■ **Unit 2**

- Benzodiazepines
- Olanzapine 2.5 mg daily on intensive therapy unit

■ **Unit 3**

- Lorazepam intramuscular or nasogastric, 0.25–5 mg up to four times daily
- Sometimes add haloperidol
- Olanzapine oral

■ **Unit 4**

- Intramuscular lorazepam 1 mg
- As required clonazepam oral
- Olanzapine oral

■ **Unit 5**

- Clonazepam up to 4 mg oral
- Olanzapine up to 20 mg oral

■ **Unit 6**

- Oxazepam +/- olanzapine oral
- Titrate the dose carefully against response and conscious level
- Use one-to-one or two-to-one nursing
- In intensive therapy/high-dependency unit can use intravenous benzodiazepines.

Appendix 7

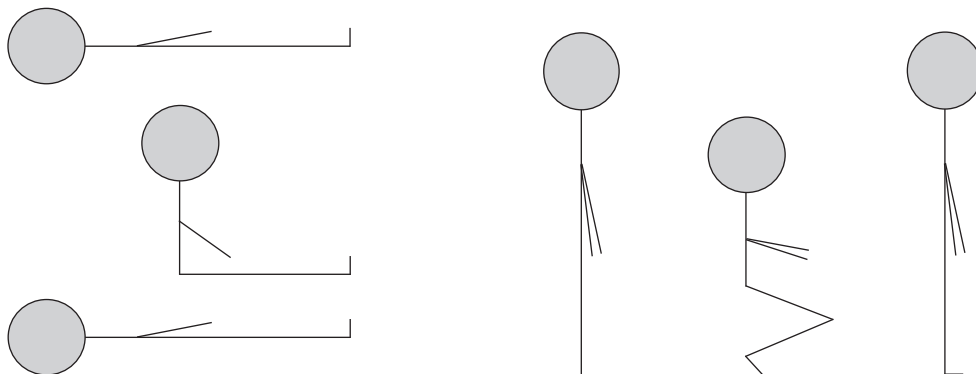
MARSIPAN – Management of Really Sick Patients with Anorexia Nervosa: key points for hospital staff

Overleaf is a photocopiable page for hospital staff.

KEY POINTS FOR HOSPITAL STAFF

- 1 Physical assessment
 - patients near to death often look well
 - BMI range: <13 high risk
 - physical examination, including muscle power (Sit up–Squat–Stand test, below)
 - blood tests: especially electrolytes, glucose, phosphate, Mg, liver function tests, full blood count
 - electrocardiogram, especially QT interval.
- 2 Nutritional issues
 - consult a medical expert in nutrition
 - replace thiamine early and prescribe a vitamin and mineral supplement
 - avoid re-feeding syndrome by slow re-feeding and close monitoring in vulnerable patients
 - avoid underfeeding syndrome by frequent (12-hourly) reassessment and increasing calories as soon as safe.
- 3 Psychiatric issues
 - transfer to a specialist eating disorders unit (SEDU) if possible
 - regular liaison with a psychiatrist
 - be aware of sabotaging behaviour such as falsifying weight, water drinking, exercising
 - use only experienced and trained nurses to observe
 - ask psychiatrist to consider Mental Health Act section if patient fails to improve.

SIT UP–SQUAT–STAND TEST (TO DETECT MUSCLE WEAKNESS)



1. Sit-up: patient lies down flat on the floor and sits up without, if possible, using their hands.

2. Squat–Stand: patient squats down and rises without, if possible, using their hands.

Scoring (for Sit-up and Squat–Stand tests separately)

0: Unable

1: Able only using hands to help

2: Able with noticeable difficulty

3: Able with no difficulty

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