Scottish Parliament Region: Highlands and Islands

Case 200503079: Argyll & Clyde Health Board[1]

Summary of Investigation

Category

Health: Hospital; Complaints handling and nursing care

Overview

The complainant (Mrs C) raised concerns about the nursing care received by her late husband (Mr C) in Lorn and Islands District General Hospital (the Hospital).

Specific complaints and conclusions

The complaints which have been investigated are that:

(a) Mr C's medication for Parkinson's disease was not correctly administered in relation to his PEG feeding (*not upheld*);

(b) Mr C's PEG tube was not properly cleaned by nursing staff so as to avoid blockage (*no finding*);

(c) Mr C was not kept satisfactorily hydrated (*not upheld*);

(d) Mr C's feet were not kept elevated when he was sitting in his chair and this resulted in the formation of blisters on his heels (*upheld*);

(e) Mr C was not given adequate physiotherapy in hospital (*not upheld*);

(f) Mr C was not given access to his own oral suction machine and oral suction was not performed sufficiently frequently by staff (*no finding*);

(g) Mr C's torso and head were not kept elevated when he was in bed (*upheld*); and

(h) Mr C was wrongly assessed as fit for discharge as he died shortly later (*not upheld*).

---

[1] Argyll and Clyde Health Board (the former Board) was constituted under the National Health Service (Constitution of Health Boards) (Scotland) Order 1974. The former Board was dissolved under the National Health Service (Constitution of Health Boards) (Scotland) Amendment Order 2006 which came into force on 1 April 2006. On the same date the National Health Service (Variation of the Areas of Greater Glasgow and Highland Health Boards) (Scotland) Order 2006 added the area of Argyll and Bute Council to the area for which Highland Health Board is constituted and all other areas covered by the former Board to the area for which Greater Glasgow Health Board is constituted. The same Order made provision for the transfer of the liabilities of the former Board to Greater Glasgow Health Board (now known as Greater Glasgow and Clyde Health Board) and Highland Health Board. In this report, according to context, the term 'the Board' is used to refer to the former Board or Highland NHS Board as its successor.

Redress and recommendations

The Ombudsman recommends that the Board:

(i) take steps to ensure that relatives are given appropriate information where treatment given in hospital is different from at home;

(ii) apologise to Mrs C for their failure to appropriately manage Mr C's pressure areas; and

(iii) remind relevant staff to be attentive to any physiotherapy advice given on positioning a patient. Furthermore, the Board should apologise to Mrs C for their failure to return Mr C to an upright position after a positional change.

The Board have accepted the recommendations and will act on them accordingly.

Main Investigation Report

Introduction

1. On 9 February 2006 the Ombudsman received a complaint from a woman, referred to in this report as Mrs C, about the standard of care received by her late husband (Mr C) whilst he was a patient in Lorn and Islands District General Hospital (the Hospital). She complained that the response to her complaint to Argyll and Clyde NHS Board (the Board) had not adequately addressed her concerns. Mrs C complained to the Board on 24 August 2005. A meeting was held to discuss her complaint on 12 December 2005. Mrs C received a reply from the Designate Director of the Board on 23 December 2005 and was referred to the Ombudsman on 27 January 2006.

2. Mr C suffered from a variant of Parkinson's disease, multi-system atrophy. He was admitted as an emergency from home to the Hospital on 6 June 2005 with chest symptoms possibly due to aspiration pneumonia. He was known to have severe swallowing problems and was being tube fed via a PEG. Although pneumonia was not diagnosed, he was thought to be at risk of aspiration. He was reviewed by the ward doctor on 14 June 2005 and recorded to be doing well, with no more abdominal pain and tolerating his feeds well. His nursing observations also recorded a stable condition and he was, therefore, discharged home on 15 June 2005.

3. Mr C was re-admitted on 16 June 2005 from home with a history from his GP of increasing breathlessness, feverish and a cough 'after vomiting going home in the ambulance' the day before. He was diagnosed as having aspiration pneumonia on this occasion. His condition had improved considerably by 20 June 2005 although some adjustments to his hydration and electrolytes were needed. Mr C's blood tests revealed that he was dehydrated, so the fluid intake via the PEG was increased. On 23 June 2005, Mr C's dosage of co-beneldopa (a drug to treat Parkinson's disease) was increased with good effect. Over the next two days Mr C's electrolytes improved, however, in the early hours of 27 June 2005 it was recorded that Mr C's temperature was raised and he was breathless. An intravenous antibiotic was prescribed. Later that day, Mr C's fever had abated but there were still crackles to be heard in his right lung base. On 28 June 2006 Mr C died and the cause of death was certified as pneumonia and multi-system atrophy.

4. The complaints from Mrs C which I have investigated are that:

(a) Mr C's medication for Parkinson's disease was not correctly administered in relation to his PEG feeding;

(b) Mr C's PEG tube was not properly cleaned by nursing staff so as to avoid blockage;

(c) Mr C was not kept satisfactorily hydrated;

(d) Mr C's feet were not kept elevated when he was sitting in his chair and this resulted in the formation of blisters on his heels;

(e) Mr C was not given adequate physiotherapy in hospital;

(f) Mr C was not given access to his own oral suction machine and oral suction was not performed sufficiently frequently by staff;

(g) Mr C's torso and head were not kept elevated when he was in bed; and

(h) Mr C was wrongly assessed as fit for discharge as he died shortly later.

Investigation

5. In the course of this investigation I examined correspondence between Mrs C and the Board as well as the Board's complaint file on the matter, which includes correspondence, minutes from a meeting held between the Board and Mrs C to discuss the complaint and details of the investigation carried out by the Board. I have obtained and considered Mr C's relevant medical records and have also asked the Ombudsman's nursing adviser (the Nursing Adviser) and Clinical Adviser (the Clinical Adviser) to review Mr C's medical records, the complaint and the Board's response to this matter. I have not included in this report every detail investigated but I am satisfied that no matter of significance has been overlooked. Mrs C and the Board were given an opportunity to comment on a draft of this report.

(a) Mr C's medication for Parkinson's disease was not correctly administered in relation to his PEG feeding

6. Mrs C complained that Mr C was given his medication and PEG feed at the same time and that this should not happen as the protein in the feed interferes with the absorption of the medication and lessens its beneficial effects. Mrs C explained to me that the advice on the administration of co-beneldopa in relation to the PEG feed was given to her by a Parkinson's nurse and by the dietician at the Hospital. She also explained that she had read this advice in literature on Parkinson's disease.

7. In their response to Mrs C, the Board stated that Mr C's fluid charts show a poor indication of the start time for PEG feeds. They stated that all medication

was given as prescribed but that this was not always administered half an hour before feeds were started, as requested by Mrs C. The Board explained that medical advice suggests that the giving of medication with PEG feeds is controversial and that it was discussed with Pharmacy and Dietician staff within the Hospital. They further explained that it is uncertain if feeding with co-beneldopa makes any significant difference to the absorption of the drug, but the co-beneldopa was increased to account for any possible slight reduction in absorption that might have occurred. The Board apologised to Mrs C that her advice with regard to her husband's feed and medication was not taken into consideration.

8. The drug charts for Mr C's first admission on 6 June 2005 are on file and indicate that he received his medication for Parkinson's disease at, or shortly after, 08:00, 12:00, 16:00, 20:00 and 22:00. The Clinical Adviser stated that this would be a reasonable regime and seemed to tie in with the medication/PEG feed regime typed by Mrs C. The feeding chart for 9 June 2005 showed that the regime adopted was for the feed to commence at 13:30 and last 12 hours. This differed from the regime at home in that there his feeds were given in two lots, 500mls at 09:45 to be disconnected at 11:45 and 1500ml at 20:00 for 10 hours overnight. In short, at home the bulk of Mr C's feed was given overnight and in the hospital, the chart indicates it was all given during the day.

9. There is a comment in the nursing notes for 10 June 2005 that states 'feed tolerated, therefore, move to regime that is followed at home – copy in care plan'. It is recorded that Mr C had vomited on 6 and 7 June 2005 and was thereafter commenced on water before recommencing his usual regime. The Nursing Adviser told me this was the reason for deviating from the regime he had been on at home. The Clinical Adviser told me that there was no record of a discussion with Mrs C about the change that was made and that there should have been such a discussion. The notes record that Mrs C told the physiotherapist that Mr C's co-beneldopa dosage was critical in that his mobility was optimal half an hour after this was given.

10. The drug chart for Mr C's second admission used the same chart as the first admission. The Clinical Adviser stated that this is not good practice as confusion about doses could have arisen. The dietician recorded the 'usual feeding regime at 1500mls at 150mls/hr overnight starting at 20:00 he also gets 500mls at 200mls/hr either in the morning or afternoon'. She referred the nursing staff to the 'regime in the back of the nursing care plan'.

11. The Clinical Adviser explained that there is value in timing the medication for Parkinson's disease to a regular and consistent pattern, so as to provide an optimal, smooth response and avoid the so-called 'on-off syndrome' when the patient's mobility fluctuates widely. He stated that there is also variability in dose-response if high protein meals are given within an hour of medication. However, in Mr C's case this would not have been such a problem as his feeds were only slowly dripped into his stomach over several hours rather than whole meals taken over half an hour, at intervals.

(a) Conclusion

12. It is clear that Mrs C was very involved in her husband's care and was naturally concerned that the care provided in the Hospital should be of a high standard. She provided detailed information about the regime which she expected staff to follow in relation to medication and feeding. In these circumstances, it would have been appropriate to have kept Mrs C informed about the different regime being followed by the Hospital and the reasons for it. I can fully understand why Mrs C was upset at her comparative lack of involvement in the hospital setting. The Board have apologised to Mrs C for their failure to take her advice into account.

13. The Board have acknowledged that medication was not always given half an hour before feeds started as requested by Mrs C. The Clinical Adviser stated that the medication and feed regime followed was reasonable and that the medication would not have been affected by the feed in Mr C's case as the feed was being slowly dripped into his stomach. Although the medication was administered differently from Mr C's home regime, the Hospital regime was acceptable. For this reason, I do not uphold this complaint.

(a) Recommendation

14. The Ombudsman recommends that the Board take steps to ensure that relatives are given appropriate information where treatment given in hospital is different from at home, especially in circumstances where those relatives are the principal carers; such relatives should be involved in the planning of care and kept informed of decisions thereafter.

(b) Mr C's PEG tube was not properly cleaned by nursing staff so as to avoid blockage

15. Mrs C told me that the flushing of the PEG tube with water before and after each feed and medication was not always carried out as per advice from the dietician, PEG feeding instruction manual and medical advice. She explained that she and her husband's two carers both witnessed that the PEG tube was very seldom flushed with water before and after medication. She told me that her husband had advised her that the tube had been blocked on more than one occasion and that she had observed that the tube often did not appear to have been flushed.

16. The Board, in their response, explained that it is standard practice with PEG tubes to flush the tube with at least 50mls of water before and after each feed or as directed by the dietician. They stated that this ensures potency of the tube, prevents blocking and contributes to the patient's hydration. The Board acknowledged that Mr C's fluid balance charts do not demonstrate an adequate record of the recommended flushing of the tube.

17. The Clinical Adviser agreed that the flushing of the PEG tube with water was not well recorded although it was stipulated in the feeding regime to 'give plenty of water either as a bolus or through the pump'. It is only recorded on 8 and 9 June 2005 that water was given at specific times. There is no record after that, other than a comment on 10 June 2005 stating 'water in progress'. In neither admission is there any record of the tube being blocked at any time. The Clinical Adviser stated that any evidence that Mr C's PEG tube was regularly flushed as it should have been on the ward is absent and that this reflects ill on the diligence of the nurses.

(b) Conclusion

18. Due to the lack of documentation in Mr C's records about the flushing of the PEG tube with water, it is not possible to ascertain whether or not this was carried out appropriately. There is also no evidence in the medical or nursing records that Mr C's PEG tube became blocked during his stay in the Hospital. Owing to the lack of evidence on this matter, I am unable to reach a conclusion on this complaint and have made no finding. However, I do consider that the documentation about this aspect of care was inadequate.

(b) Recommendation

19. The Board informed me that, in response to this complaint, staff were reminded of the importance of appropriately documenting the care and treatment given to patients. The Ombudsman does not have any other recommendations to make.

(c) Mr C was not kept satisfactorily hydrated

20. Mrs C explained that she had noted that Mr C's urine was very concentrated and that output was low. Furthermore, she told me that Mr C complained of being thirsty. She stated that, as Mr C had a catheter fitted, it was important that he have sufficient fluid to help prevent urinary tract infection. She told me that at home Mr C had never had this problem previously and that she kept daily records of input and output.

21. The Board responded that Mr C's urinary output via his catheter was variable but improved when water supplements were given via his PEG tube. The Board stated that this was documented in the nursing notes but that output was not always adequately or clearly documented on Mr C's fluid balance chart. They commented that nursing staff did record problems with Mr C's urinary output and did record giving water supplements via the PEG tube to help his hydration. They told Mrs C that all staff had been reminded of the importance of recording fluid intake and output.

22. The Clinical Adviser told me that there was no evidence Mr C became dehydrated during his first admission. He stated that the drug infusion charts on the second admission showed that, from 16 to 20 June 2005, the intravenous fluid input of 100mls with the antibiotic was regularly checked but there did not appear to be any other intravenous fluids given, as he was getting 1000mls of water in 24 hours via the PEG tube and this was doubled on 22 June 2006 when Mr C's kidney function tests showed some dehydration. Intravenous antibiotics were again commenced on 25 June 2005 when Mr C's condition deteriorated. The Clinical Adviser advised that he believed Mr C may have been dehydrated for a short period between 20 and 22 June 2005 based on the blood results on 22 June 2005. He stated that there was evidence that Mr C's fluid input had been reasonable up to that time and according to the regime planned by the dietician. He went on to advise that it was not a fault in the nursing care that Mr C became dehydrated by 22 June 2005. The Clinical Adviser stated that he was unable to find a reason why this happened but that it was corrected with appropriate adjustment of Mr C's fluid input.

(c) Conclusion

23. Mr C may have been dehydrated for a short period although his fluid input was reasonable. It is not possible to determine why this occurred but no fault can be attributed to the nursing care which Mr C received. When it was detected that Mr C was dehydrated, appropriate adjustments were made to his fluid input. This aspect of Mr C's care was appropriate and I, therefore, do not uphold this complaint.

(d) Mr C's feet were not kept elevated when he was sitting in his chair and this resulted in the formation of blisters on his heels

24. Mrs C explained that on 26 June 2005, she noticed that Mr C's bare feet were resting on the floor and that he had a large blister covering the whole of each heel. Mrs C stated that she spoke to a member of staff and that Mr C's feet were placed on a pillow.

25. In their response to Mrs C, the Board accepted that care given to provide pressure relief was not acceptable.

26. Mr C's records state that the chair he was given on admission on 6 June 2005 was unsuitable but there is no mention of whether his chair was changed for a more suitable one. Mr C's Waterlow score on admission was 22, indicating a high risk of pressure sores. The Clinical Adviser stated that there is no evaluation of Mr C's seating or mattress requirements in the first admission and that he would have expected one to have been carried out, given the high risk score. On Mr C's second admission, he was very unwell and was less mobile. His Waterlow score was 17, indicating moderate risk. The care plan was re-evaluated twice following his admission but no repeat Waterlow score was recorded. On 18 June 2006, two days after his admission, Mr C's heels were noted to be discoloured and his mattress was changed to a pressure relieving mattress. On 22 June 2006, a nurse recorded that his heels had blisters with white skin. The Clinical Adviser stated that this was evidence of serious skin damage, but that there was no record of precautionary measures being taken. A doctor noted the pressure sores on Mr C's heels on 24 June 2005 and commented that he required 'pressure relieving precautions at night in bed'.

27. The Clinical Adviser advised that even if Mr C's legs had been elevated, this would have put pressure on the heels as well and would have needed some

precaution. He stated that it looked as though the nurses did not assess his pressure sore risk adequately or take preventative measures. He advised that mitigation may be offered in view of Mr C's serious chest infection due to aspiration having a deleterious effect on circulation and, therefore, predisposing him to pressure sores. He stated that this does not, however, excuse the fact that nursing staff did not manage his pressure areas appropriately.

(d) Conclusion

28. Nursing staff did not manage Mr C's pressure areas appropriately and this contributed largely to the fact that Mr C developed pressure sores on his heels. The Board have acknowledged that the care given to provide pressure relief was not acceptable. It was also unacceptable that Mr C's bare feet were resting on the floor in this condition. I, therefore, uphold this complaint.

(d) Recommendation

29. The Board informed me that, as a result of this complaint, relevant staff were given training on pressure area care and prevention. The Ombudsman recommends that the Board apologise to Mrs C for their failure to appropriately manage Mr C's pressure areas.

(e) Mr C was not given adequate physiotherapy in hospital

30. Mrs C told me that she considered that the lack of physiotherapy had contributed to Mr C's physical decline. She told me that, before being admitted to hospital, Mr C had been able to walk unaided and to manage stairs on his own. Mrs C explained that it was her recollection that Mr C had only received physiotherapy on 23 June 2005 after she had requested this for him. She told me that on that date, the physiotherapist and her assistant helped Mr C onto his feet to take a few steps with a walking aid. She stated that the session only lasted a few minutes but that the results were good and that it was decided that Mr C would get further treatment, however, that this did not happen.

31. The Board stated that physiotherapy was arranged for Mr C on 17 June 2005. They explained that physiotherapy is arranged as soon as possible but acknowledged that this did not happen in Mr C's case. The Board apologised for this.

32. There are no records of a physiotherapist being involved with Mr C on his first admission. The Clinical Adviser stated that this was because there was no chest infection at that stage. On Mr C's second admission, there were separate

physiotherapy records. A physiotherapy referral for his chest was made the day after his admission and he was assessed that day. The physiotherapist gave advice about sitting Mr C upright to aid his coughing and the requirement for regular suctioning, as well as lying him on his right side to assist drainage of secretions. Emergency call-out for physiotherapy was offered and agreed with the charge nurse. A physiotherapy referral was again made on 23 June 2005, for an assessment of Mr C's mobility before discharge. The Clinical Adviser advised that before this, Mr C had been rather too unwell for walking practice, so it was reasonable to not undertake physiotherapy treatment. On 23 June 2005 Mr C walked six steps with a walking aid but needed further practice. However, by the following day, he required 3 people to mobilise him and then was too unwell again.

33. The Clinical Adviser stated that he believed Mr C had received appropriate physiotherapy treatment when this was within his capabilities but that his illnesses debilitated him to the point where he could not benefit.

(e) Conclusion

34. Mrs C, not unnaturally, felt that Mr C became less mobile because he was in hospital and not receiving physiotherapy. The Clinical Adviser explained that Mr C was already a frail, poorly man with Parkinson's before he became ill with infection. It was Mr C's severe symptoms for which he was admitted which precluded his having physiotherapy treatment. I, therefore, do not uphold this complaint.

(f) Mr C was not given access to his own suction machine and oral suction was not performed sufficiently frequently by staff

35. Mrs C explained that when she visited Mr C, she noted that on most occasions he had a very thick discharge coming from his mouth which was often green in colour. She told me that the suction equipment was not within Mr C's reach and that he was, therefore, not being suctioned very often. Mrs C stated that a member of staff had told her that Mr C was suctioned two or three times daily. She told me that, at home, Mr C had his own suction machine that he used himself once or twice every hour. Mrs C stated that she considered that her husband was certainly capable of using a suction machine himself. She also informed me that on one occasion she had sat with her husband for 12 hours and he had not been suctioned during that period.

36. The Board stated that Mr C's deteriorating condition made it less practical for him to perform oral suction so the nursing staff performed this procedure. They explained that the record in the notes indicated that oral suction was not performed as frequently as at home but that staff performed suction when required. The Board apologised 'if Mrs C was of the understanding that it was not performed frequently'. Mrs C strongly disagrees with the Board's assessment that Mr C was unable to perform oral suction himself and that he was suctioned sufficiently frequently.

37. The Clinical Adviser explained that it was difficult to answer this complaint unequivocally as there is, as acknowledged by the Locality Manager in her response to Mrs C, inconsistent recording of the frequency of suctioning. The Nursing Adviser told me that routine suctioning may not always be recorded but that excessive suctioning may have been recorded. She noted that the notes recorded suction at night on some occasions and informed me that Mr C may have required increased suction at this time due to decreased mobility and build-up of secretions. The Board stated that staff have been reminded of the importance of keeping up-to-date nursing notes. Oral suctioning was clearly in the nursing care plan and was carried out, sometimes several times a night. The Clinical Adviser stated that Mr C was assessed as not being able to manage suction on himself and that it was, therefore, appropriate for nursing staff to do it for him.

(f) Conclusion

38. Due to Mr C's condition, staff assessed that he was unable to perform oral suction himself. In these circumstances, it was appropriate for nursing staff to do it for him. Suctioning was carried out by staff, especially at night. From the evidence available, it is not possible to conclude whether oral suction was not performed sufficiently frequently. I, therefore, cannot reach a conclusion on this complaint and have made no finding.

(g) Mr C's torso and head were not kept elevated when he was in bed

39. Mrs C stated that on many occasions, she arrived at the Hospital and found Mr C lying flat. She explained that Mr C hated this position and that it did not help his condition. She told me that, after she mentioned this to staff, he was slightly elevated at one point, but was later lying flat again.

40. The Board explained that nursing staff had given Mr C a positional change but that he was unfortunately not returned to an upright position on one

occasion. Mrs C strongly disagrees that this only happened on one occasion only and explained that she and Mr C's carers had found him lying flat on many occasions.

41. On 17 June 2005, the physiotherapist advised that Mr C should be positioned in an upright sitting position for his chest infection or on his right side to allow secretions to drain from the left lung. The records indicate that he was washed and seated out in a chair daily until 26 June 2005 after which the records suggest he was nursed in bed at all times.

(g) Conclusion

42. The Board acknowledged that, on one occasion, Mr C was left lying down and was not returned to an upright position. The Board have not apologised to Mrs C for this failure and I, therefore, uphold this complaint.

(g) Recommendations

43. The Ombudsman recommends that relevant staff are reminded to be attentive to any physiotherapy advice given on positioning a patient. Furthermore, the Board should apologise to Mrs C for their failure to return Mr C to an upright position after the positional change.

(h) Mr C was wrongly assessed as fit for discharge as he died shortly later

44. Mrs C explained that Mr C was assessed as fit to go home on the 22 June 2005 but that his discharge was delayed until 29 June 2005 due to his limited mobility. She told me that it had been agreed that Mr C would benefit from staying in hospital for further physiotherapy. She stated that it was agreed that Mr C would receive further physiotherapy to improve his mobility and that a case meeting would be held on 29 June 2005 prior to his discharge. Mrs C raised concerns that Mr C had died on 28 June 2005 despite being assessed as fit for discharge shortly before this. Mrs C explained that, on 26 June 2005, Mr C had been able to go outside in the wheelchair but that less than 12 hours later, his condition had deteriorated and he was lying in bed unconscious.

45. The nursing records state that on 21 June 2005, the aim was to discharge Mr C on 23 June 2005. The following day, when Mr C required suction twice each night and had become dehydrated the decision was revoked as Mr C's condition could be better managed in hospital. The Clinical Adviser has advised that this decision was reasonable. The Nursing Advisor explained that the case

conference would have been to discuss discharge options which would most certainly have included a comprehensive home care package with significant support, going into a home, or long-term continuing care. Sadly, Mr C died in hospital on 28 June 2005 before the case conference which was arranged for 29 June 2005.

46. The clinical records indicate that on 26 June 2005 at 03:30, Mr C's breathing became noisy and rapid so Mrs C was contacted at 04:30 and advised of his deterioration. Mrs C was seen by a doctor at 11:30 on 27 June 2005 when it was agreed that Mr C was not for resuscitation. Mrs C was with her husband when he died at 09:30 on 28 June 2005. The Nursing Advisor stated that the nature of Mr C's illness meant that his condition was unpredictable.

(h) Conclusion

47. Following the decision to discharge, Mr C's condition declined unexpectedly but I do not consider that any fault can be attributed for this fact. I, therefore, do not uphold this complaint.

19 September 2007

Annex 1

Explanation of abbreviations used

Mrs C	The complainant
Mr C	The complainant's husband, the aggrieved (now deceased)
The Hospital	Lorn and Islands District General Hospital
The Board	Argyll and Clyde NHS Board
The Nursing Adviser	Nursing adviser to the Ombudsman
The Clinical Adviser	Clinical adviser to the Ombudsman

Annex 2

Glossary of terms

Aspiration	Entry of foreign material such as food particles or liquids into the trachea and lungs
Aspiration pneumonia	Inflammation of the lungs due to inhalation of food particles of liquid into the lungs
Co-beneldopa	A type of anti-parkinsonism drug
Electrolytes	Electrolytes are a category of substances that are found dissolved in plasma. The testing of electrolytes is an important indicator of the amount of water and salt in the body
Multi-system atrophy	A variant of Parkinson's disease
Parkinson's disease	a chronic disease of the central nervous system caused by lowered levels of the inhibitory neurotransmitter dopamine
PEG	Percutaneous Endoscopic Gastroscopy – a tube inserted through the abdominal wall to provide food
Waterlow score	This permits patients to be classified according to their risk of developing pressure sores