

Case 200701693: Greater Glasgow and Clyde NHS Board

Summary of Investigation

Category

Health: Hospital; gastroenterology; nursing

Overview

The complainant (Mr C) raised concerns about the care and treatment which his late wife (Mrs C), who had severe Multiple Sclerosis, received from Greater Glasgow and Clyde NHS Board (the Board) during her time in hospital for treatment of her painful right hip. Mr C complained that, whilst in hospital, the Board failed to feed his wife, who required to be fed via a percutaneous endoscopic gastrostomy tube, in a sufficiently upright position, which caused food to pass into her lungs. Mr C said he believed that the Board failed to notice that his wife had then developed a chest infection and provide necessary treatment and that this had resulted in her death.

Specific complaints and conclusions

The complaints which have been investigated are that:

- (a) the Board did not feed Mrs C in a sufficiently upright position (*not upheld*);
and
- (b) the Board failed to notice that Mrs C had developed a chest infection and treat it in time (*partially upheld, to the extent that, whilst the Board failed to correctly identify the significance of Mrs C's symptoms on 16 February 2007 and respond appropriately, I cannot say that their failure to do so resulted in Mrs C's death*).

Redress and recommendations

The Ombudsman recommends that the Board:

- (i) apologise to Mr C for failing to notice that Mrs C had developed a chest infection on 16 February 2007 and provide appropriate treatment at that time and for failing to produce a care pathway for Mrs C when the course of her treatment changed;
- (ii) feed back the adviser's views on what he considers would have been the appropriate course of treatment for Mrs C on 16 February 2007, to the staff involved in cases of this type and in Mrs C's care, in particular;

- (iii) provide training to staff to ensure that, in all appropriate cases, where the direction of a patient's treatment changes, a new care pathway is devised - this could be by introducing a multi-disciplinary record or audit of documentation;
- (iv) ensure the staff involved in Mrs C's care are made aware of the need to record accurate information on patient mobility in their records;
- (v) review their current policy on the use of special mattresses and beds, incorporating the NHS QIS standards and flowchart; and
- (vi) provide feedback to the staff involved in Mrs C's care on the importance of seeking guidance from a more senior member of the medical team on appropriate treatment and/or to ask technical staff for assistance, in cases where the accuracy of medical equipment, such as a pulse oximeter, is in question.

Main Investigation Report

Introduction

1. On 24 October 2007 the Ombudsman received a complaint from the complainant (Mr C) about the care and treatment which his late wife (Mrs C) received from Greater Glasgow and Clyde NHS Board (the Board) during her time in Victoria Infirmary (the Hospital). Mr C explained that his wife, who had severe Multiple Sclerosis (MS), was admitted to the Hospital on 12 February 2007 for treatment of her painful right hip. Mr C said that his wife required to be fed via a percutaneous endoscopic gastrostomy (PEG) tube, which had been inserted in early 2006, when Mrs C had lost the power to use her throat. The loss of power had resulted in food passing into her lungs, causing chest infections. Mr C complained that, whilst in the Hospital for treatment of her sore hip, the Board failed to feed his wife in a sufficiently upright position, which caused food to pass into her lungs. Mr C said he believed that the Board then failed to notice that his wife had developed a chest infection and provide necessary treatment and that this had resulted in her death. Mr C explained that he and his daughter had managed to successfully feed his wife at home using the PEG tube for nearly ten months prior to her admission to the Hospital. Mr C added that his wife had slept in an electric bed at home, in which she could adjust her position.

2. The complaints from Mr C which I have investigated are that:
- (a) the Board did not feed Mrs C in a sufficiently upright position; and
 - (b) the Board failed to notice that Mrs C had developed a chest infection and treat it in time.

Investigation

3. My investigation of this complaint involved reviewing the documentation provided by Mr C, speaking to Mr C about his complaint, making enquiries of the Board, obtaining medical opinions from the Ombudsman's nursing and gastroenterology advisers (Adviser 1 and Adviser 2, respectively) and discussing the complaint with Adviser 1 and Adviser 2.

4. I have not included in this report every detail investigated but I am satisfied that no matter of significance has been overlooked. Mr C and the Board were given an opportunity to comment on a draft of this report.

- (a) The Board did not feed Mrs C in a sufficiently upright position; and**
(b) The Board failed to notice that Mrs C had developed a chest infection and treat it in time

Enquiries of the Board

5. In response to my written enquiries about Mrs C's feeding regime in the Hospital, including the angle at which she was fed, the Board provided a copy of their Enteral (within the gastro intestinal tract) Nutrition Guidelines (the Guidelines), which detailed the procedure to be followed when carrying out PEG feeding in hospital. The Guidelines stated 'ensure patient is in a head up elevated position of minimum 30 degrees during feeding and for one hour after completion of the feed if no contraindications'. The Board explained 'Many patients receiving enteral feeding while in hospital require their feed to be administered for up to 20 hours in any 24 hour period to allow the administration of their total nutrition and fluid requirements. The patient's clinical condition, ability to sit upright or propped up with pillows as well as the patient's comfort is taken into account when positioning the patient during the administration of enteral feeding, a minimum of 30 degrees is recommended when possible. The guidelines for positioning during administration of enteral feeding [are] in line with current research based practice'.

6. The Board explained that the recommended angle for enteral feeding for patients discharged into the community can differ because it is more likely that the patient will have a less acute clinical issue and the patient is very often able to be out of bed for long periods during the day whilst the feed is administered. They explained that a more elevated position of 45 degrees, as is recommended to those carrying out home feeds, is much more achievable. They added that for those home patients who cannot maintain the 45 degree angle the patient should prop their head up with pillows.

7. The Board advised that during her time in the Hospital, 'staff fed Mrs C in an appropriate manner – either semi recumbent when in bed, this is with three pillows in a semi recumbent position or when up sitting in a chair. The feed was prescribed over either a 15 or 24 hour duration. Unfortunately this does not prevent aspiration (inhalation) only reduces the risk factor'.

8. When asked to comment on Mr C's belief that his wife may not have been fed correctly whilst in the Hospital, that food got into her lungs and she developed a chest infection which went untreated, resulting in her death, the Board advised 'Following review of the case notes, discussion with [the

Consultant Orthopaedic Surgeon] and staff involved in [Mrs C]'s care [the Board believe that Mrs C] was fed correctly whilst in hospital. When [Mrs C] became unwell the diagnosis of aspiration pneumonia [an infection of the lungs caused by the inhalation of foreign material into the lungs causing obstruction of the airways] was made and all possible care was given, however, despite this [Mrs C]'s condition continued to deteriorate'. The Board went on to describe the sequence of events, quoting comments taken from Mrs C's case notes. I have not included this information here as Adviser 1 and Adviser 2 have included this in their background and clinical chronology at paragraphs 15 to 26 below.

9. In terms of checks carried out on Mrs C regarding her feeding and risk of aspiration and the feeding regime in general, the Board said Mrs C 'was positioned in the ward where she could be seen by staff at all times. [Mrs C] required two hourly change of position and additionally her PEG tube was checked at every medication round – four hourly. The dietician prescribed the enteral feeding regime. Each regime was given over initially a 24 hour period reducing to 15 hours per day'.

10. The Board explained 'the Ward layout was in a Nightingale configuration, with a side room at the entrance to the ward and a four bed bay at the end of the ward area. [Mrs C] was in a bed close to the nurses' station in the main ward area for most of her stay. [Mrs C] was only moved into the side room when her condition deteriorated on the afternoon of the 19 February 2007'.

11. The Board provided a sketch of the layout of the ward, which is included at Annex 4. The Board explained that Mrs C commenced her stay in the Hospital in bed 5 and was later moved to bed 2.

Opinions of Adviser 1 and Adviser 2

12. In response to my enquiries, Adviser 1 and Adviser 2 provided background and a clinical chronology on Mrs C's case, whilst having regard to the issues under investigation. Adviser 1 and Adviser 2 then answered specific questions which I put to them about Mr C's complaint and provided their conclusions. I have presented this information below. I have started, however, with Adviser 2's overview of the clinical issues in this case.

Adviser 2's Overview of Clinical Issues

13. There is a sort of 'design fault' in the upper part of the normal throat where the opening of the windpipe is situated in front of the opening of the

oesophagus (gullet). Consequently there is a constant danger of food entering the trachea and causing aspiration pneumonia. This is normally prevented during the action of swallowing because a plate of cartilage (the glottis) is normally pulled up to cover the opening of the windpipe while food slides over it into the opening of the oesophagus. Swallowing is a highly co-ordinated process involving the sequential contraction of a number of muscles of the mouth and throat. If the function of these muscles is impaired by weakness, for example, by neurological conditions such as strokes or MS, that co-ordination is lost and food is inhaled.

14. Feeding liquid food directly into the stomach bypasses the swallowing mechanism reducing the risk of inhalation. However, the risk of inhalation cannot be avoided completely since the swallowing of mucus and saliva continues. Vomiting is a major risk for inhalation. In addition, the contents of the stomach are commonly refluxed from the stomach into the oesophagus. This is known as 'gastro oesophageal reflux'. These gastric contents can be inhaled if they are of sufficient volume to reach the upper part of the oesophagus. The inhalation risk resulting from gastro oesophageal reflux can be reduced, by ensuring an upright posture while PEG feeding, and using slow feeding of small volumes of feed. However, feeding in even the erect position does not prevent gastro oesophageal reflux, but rather it increases the 'clearance rate' of the oesophagus – meaning that the oesophagus empties the refluxed material back into the stomach more quickly when erect.

Background and Clinical Chronology provided by Adviser 1 and Adviser 2

15. Mrs C was a 76-year-old lady with a past medical history of fractured neck of femur (left), hypertension (high blood pressure), breast cancer and severe MS. Mrs C lived at home with Mr C, who was her main carer, with additional support from District Nursing and Home Care. Given her presenting needs Mrs C required assistance to undertake all activities of daily living, had a long-term urinary catheter in place and required assistance from one person when transferring from one resting place to another. However, more recently, due to a decline in her condition, Mrs C had episodes of increasing confusion and reduced ability to assist with transfers and this required a number of admissions into hospital. Her symptoms included general deterioration, and chest or urine infections. In their comments on the draft report, the Board and Mr C advised that Mrs C did not have a long term catheter in place at the time of her admission. The Board explained that a urinary catheter was inserted on 19 February 2007.

16. In March 2006 Mrs C was assessed as having problems with the ability to swallow, and a PEG was inserted to allow nutritional feeding to be administered directly into her stomach, following which she was discharged back home on 22 May 2006. The PEG tube allowed Mrs C to be fed whilst bypassing the normal swallowing mechanism. A PEG tube is a rubber or silicone tube which is placed through the front abdominal wall so that the internal end of the tube lies inside the stomach. The tube is fixed in this position so that liquid feed can be instilled directly into the stomach.

17. Mr C and his daughter managed Mrs C's PEG feeds at home following the guidance provided by the Board. Mrs C required admission again on 18 October 2006, on this occasion with a history of diarrhoea. On further examination a urinary tract infection was identified and treatment commenced, and the clinical notes stated that Mrs C was 'frail'. Following treatment Mrs C was discharged on 27 October 2006 back to her home. In his comments on the draft report, Mr C explained that his wife was an alert, happy and contented person, who could operate a stair lift at home and, with the help of one person, could get in and out of their non adapted car.

18. Mrs C required admission to the Hospital on 12 February 2007 at 15:15 with a history of a painful right hip. Her GP suspected a possible fractured femur and arranged for her admission. Accompanying information suggested a fall 11 days earlier may have caused this, but it was not clarified. Mrs C was alert and aware on admission. An x-ray was carried out that suggested an impacted fracture from some time earlier (ie not a new fracture). Mrs C was admitted to Ward 4, an Acute Orthopaedic ward, where a care pathway (care plan) for a patient with a fractured femur was commenced, and due to the possibility of her requiring an operation, Mrs C was initially nil by mouth, ie no food or drink was provided via her PEG tube Intravenous (IV) fluids were commenced. With the acknowledgement that Mrs C had a PEG tube in place, a referral was made to the nutrition team. Referrals were also made to physiotherapy and occupational therapy for assessment and treatment. It was later identified that a conservative approach to treatment would be the better option, taking into account Mrs C's pre-disposing medical conditions, ie it was not appropriate to operate on Mrs C's hip.

19. During the ward round on 13 February 2007 it was confirmed that the x-ray had shown an impacted fracture. As Mrs C's treatment was to be managed

conservatively, it was agreed that the IV fluids could be discontinued and a PEG feeding regime commenced. Later that day, Mrs C was assessed jointly by the physiotherapist and occupational therapist, where it was noted that Mrs C was able to transfer, with the aid of one person, from bed to chair. It was noted that joint assessments and reviews by the physiotherapist and occupational therapist were maintained throughout Mrs C's care on the ward. On 14 February 2007 the ward round entry contained details of a plan of care for Mrs C that included continuing with conservative treatment and mentioned that Mrs C was mobilising with the physiotherapist. The nursing records stated that oxygen was to be administered and that pressure area care and oral hygiene needs had been met.

20. An entry in the notes on 15 February 2007 suggested that Mrs C was 'mobilising', and for discharge planning to commence. Additional information was available in the notes to suggest that Mrs C was unwell and had vomited a small amount on two occasions.

21. On 16 February 2007 at 06:00, Mrs C vomited, became anxious and distressed, and her oxygen saturation levels dropped to 79 percent (normal levels are around 98 percent). Mrs C was reviewed by the Senior House Officer (SHO), who suggested that the pulse oximeter (instrument which measures the oxygen saturation in the blood) had 'poor pick up', ie it was inaccurate. The notes show that the SHO recorded oxygen levels of 72 percent and 82 percent using the oximeter. Two litres of oxygen therapy were given via mask as instructed by the SHO. This would have increased oxygen saturation levels in Mrs C's blood. As Mrs C was complaining of hip pain at this time, the SHO prescribed morphine. There did not appear to be any information in the notes to indicate what action the SHO took as a result of his concerns about the accuracy of the pulse oximeter, either in terms of seeking guidance from a more senior member of the medical team on appropriate treatment for Mrs C and/or asking technical staff to check the accuracy of the oximeter.

22. The ward round entry for 16 February 2007 referred to Mrs C as 'mobilising', and confirmed that no additional follow-up was required following discharge. There had been a joint physiotherapy and occupational therapy session scheduled to take place with Mr and Mrs C, to provide training and advice regarding transfers, however, Mrs C appeared tired and, when speaking to Mr C, he had suggested that Mrs C was having an 'off day'. Following the current assessment a referral was made to the Department of Medicine for the

Elderly for further rehabilitation. In his comments on the draft report, Mr C advised that he did not say that Mrs C was having an 'off day', but that she 'was ill'.

23. By 17 February 2007 Mrs C appeared settled, although drowsy, and required assistance from nursing and physiotherapy staff to sit out in a chair. It was identified at this stage that Mrs C's incontinence was increasing.

24. On 18 February 2007 staff commented that Mrs C had difficulty transferring from one resting place to another and had two episodes of vomiting (both only small amounts) that had caused her to become distressed. The nursing staff discontinued the PEG feed and administered the drug cyclizine to treat the nausea and vomiting. Mrs C continued to be uncomfortable and was reviewed by a doctor at 02:30 on 19 February 2007. IV antibiotics were commenced. An electrocardiogram and blood gases were taken. These record heart activity, and measure oxygen and carbon levels in blood. Nursing notes stated that Mrs C's oxygen saturation levels had dropped to 78 percent, and that oxygen was commenced via trauma mask, resulting in saturation levels fluctuating between 89–98 percent. There is no record of any problem being reported this time with the pulse oximeter.

25. A further clinical examination on the morning of 19 February 2007 suggested that Mrs C had pneumonia (chest infection). The notes state that IV antibiotics were to be continued, a portable chest x-ray ordered and a referral to the medical team for medical review, with the option to take over clinical management of Mrs C's case. The chest x-ray revealed pneumonia. Medical case notes suggested that the cause of the pneumonia was likely to be linked with aspiration following the recent episodes of vomiting. Following a medical review and then a discussion with Mrs C's family regarding treatment options and her poor prognosis, the hospital put a 'Do not resuscitate' order in place.

26. At 23:35 on 19 February 2007 Mrs C died of aspiration pneumonia, an infection of the lungs caused by the inhalation of foreign material into the lungs, causing obstruction of the airways.

Key clinical questions to Adviser 1 and Adviser 2 and responses based on clinical advice

(1) *What caused the aspiration pneumonia?*

'The cause of the aspiration was the muscular weakness and inco-ordination resulting from the MS. There is no factual information as to what material was actually inhaled and it would not be normal practice for this to be determined in cases such as this. The material which was inhaled may have been mucus, vomit, saliva or refluxed gastric contents.

[Mrs C] appeared to be reasonably well with normal levels of oxygen in her blood ('Sats 98 percent' - meaning oxygen saturation of the blood was 98 percent) on the morning of 14 February 2007, but this had fallen to a low level of 87 percent by 11:00, without any recorded symptoms that would suggest inhalation at that time. If oxygen saturation of the blood falls below 90 percent, then this indicates that there is something significantly wrong. Thereafter, there were three recorded episodes of vomiting, one on 15 February at 03:00, another on 16 February at 06:00 and a third on 18 February 2007 at 23:30. The latter two episodes were associated with distress and are consistent with episodes of inhalation. Oxygen saturation levels fell to 79 percent on 16 February 2007.

There are references within the medical notes that suggest that the cause of the aspiration pneumonia was relating to, and following, the episodes of vomiting. This does sound wholly reasonable because, if an individual, who has lost the ability to undertake a 'normal' and safe swallow vomits, there is a higher risk of aspirating the vomit than for those people who have no swallowing problems. [Mrs C] had a PEG tube inserted due to deterioration in her long-term condition that had affected her ability to swallow; as such it is highly likely that this is the rationale behind the aspiration pneumonia. The vomit would also block the airways, resulting in a reduced level of oxygen being transferred from the lungs to the bloodstream. This would account for the reduced oxygen saturation levels in the blood.'

(2) At what angle was Mrs C being fed?

'There is no information in the contemporaneous record to indicate at what angle the feeding took place and it would not be considered normal practice to record such information. The notes state that the feeding regimen was over 12 hours, with additional medication and water flushes down the PEG tube. It is likely that several changes of position would have taken place within the feeding period. Reflux episodes are frequently 'silent', and occur irrespective of position.'

(3) What angle should Mrs C have been fed at?

'Ideally, feeding should take place with the patient seated, but otherwise erect (90 degrees). If this is not practical, then at the highest angle consistent with patient comfort. It is common practice for PEG feeding to be administered to patients who are, of necessity, lying in bed (such as unconscious patients). In such a case it is advisable to adjust the bed to a feet-down tilt to maximise oesophageal clearance rate.'

(4) Did Mrs C's position during feeding cause, or contribute, to the aspiration pneumonia?

'In the absence of any factual record on Mrs C's feeding position, it is not possible to form an objective opinion on this issue.'

At this point I feel it would be helpful to include a quote from one of the Advisers on this important aspect of the case. Adviser 1 stated 'Throughout my experience of caring for patients who are fed via a PEG, I have not witnessed any incidence of aspiration directly caused by the positioning of the tube, or the patient.

(5) How could food/other substances have got into her lungs?

Any food administered through the PEG tube would pass directly into the stomach, well away from the 'risk zone' in the throat. The stomach then controls the rate at which it passes the feed into the small intestine. Stomach contents, including food, could only be inhaled if they are refluxed or vomited into the oesophagus in sufficient volume to reach the upper oesophagus adjacent to the entrance to the windpipe. Once in the windpipe, the foreign material would pass downwards, blocking the narrow airways in the lungs. Under normal circumstances, the inhalation of anything into the windpipe causes immediate coughing by a strong protective reflex. However, paralysis or profound weakness of the respiratory muscles due to neurological diseases, such as MS, prevents effective coughing.

(6) Were sufficient checks done on Mrs C to ensure that she had not slipped down her bed during her prolonged periods of feeding?

'Checks may have been undertaken whilst other care was being administered, however, as there is no requirement to record such checks in the notes, a definitive answer cannot be provided.'

In terms of the nursing care, it is surprising to see that there was no reference to the type of mattress in use on the ward. There was reference, following assessment, that a mattress would be required, but no clarification within a care plan. A mattress should have been identified to assist in the moving and positioning of [Mrs C].'

In their comments on the draft report, the Board claimed that, following her admission to the ward, Mrs C was transferred to a Proform modular pressure relieving mattress which she used throughout her stay. The Board, when asked, did not provide any documentary evidence, such as reference within a care plan, to support this.

(7) Is the Board's explanation for the differences in the angle of feeding in the Guidance and the Board's advice for home feeding reasonable?

'No factual evidence is known to indicate that either angle is preferable to the other. The 15 degree difference is not regarded as significant in practical terms. However, the Board's explanation of the rationale for different advice is plausible. With regard to the advice on placing pillows to prop up the head, unless the pillows are placed behind the chest as well as the head, this achieves only flexion of the neck rather than raising the angle of the chest and oesophagus.'

(8) Are there any indications in the notes to suggest that the aspiration pneumonia should have been detected sooner?

'The nursing record indicated that the chest problems diagnosed as aspiration pneumonia were recognised on the night of 18 February 2007. The clinical advice was that an opportunity to diagnose the problem may have been missed earlier on 16 February 2007 when [Mrs C] was reviewed by an SHO at the request of the nursing staff. [Mrs C] had vomited bile-stained fluid, become distressed, and oxygen saturation levels had fallen to 79 percent ('normal' is about 98 percent). Given these findings, and knowing that [Mrs C] was, by virtue of her overall condition and feeding, at high risk of inhalation it is surprising that the SHO was 'unconcerned' and prescribed an analgesic (medication that reduces or eliminates pain) which has a recognised side effect of suppressing respiration. [Mrs C] was having difficulty breathing and by administering the analgesic, this may have made her breathing worse. Further, the

clinical advice was that a chest x-ray was also indicated at that time and would have led to an earlier diagnosis of pneumonia.'

(9) On discovering the aspiration pneumonia, was the Board's treatment of Mrs C appropriate?

'On diagnosis, on 18 February 2007, Mrs C received fluid resuscitation, appropriate IV antibiotics, oxygen, a chest x-ray was performed and a referral made to an appropriate specialist team. This treatment was appropriate. However, there appears to be no evidence that chest physiotherapy was requested, but it may be that she was too ill for this.'
[This is explored further at paragraphs 32 to 35 below.]

(10) What general checks should have been carried out?

'[Mrs C] was admitted for an orthopaedic problem and it is entirely appropriate that her investigation/management should have been primarily directed towards her hip problem. Clearly, however, her general health was poor and relevant to other aspects of her management.

Medical assessments and reviews were undertaken either during a ward round or at the request of nursing staff when [Mrs C's] condition was noted to have changed. There was also ongoing assessment and reviews from the Dietician to assess PEG feeding regime and check for tolerance. Nursing staff did undertake an initial assessment on admission and made well documented entries on the 'nursing notes' section of the patient's documentation regarding care given, change in [Mrs C's] clinical presentation and actions taken. There is evidence to support the completion of risk assessments relating to moving and handling and pressure areas. It was, however, not possible to identify how the outcome of these assessments had informed a care plan for [Mrs C], as one could not be found in relation to the admission on 12 February 2007.

Nursing staff would also undertake 'observational' checks each time they pass the end of a patient's bed or in close proximity, or when they are undertaking other duties such as drug rounds and at meal times. These observations are not documented as it is an integral part of their approach to the delivery of care.'

(11) Was Mrs C's position in the ward adequate to allow appropriate monitoring at 'non-check' times?

'Yes.'

(12) Could Mrs C's death have been caused by gradual deterioration in her MS, and would she have been likely to have died whether or not she had been in the care of the Board at the time?

'There is no doubt that [Mrs C] had advanced MS which was progressive and had destroyed her ability to swallow. For the reasons outlined previously, the insertion of a PEG tube was entirely appropriate to manage her nutrition. But a PEG could never prevent inhalation or aspiration pneumonia which is amongst the commonest cause of death in this sad situation, irrespective of the disease that caused the swallowing difficulties. [Mrs C] had several episodes of 'chest infection' while at home before her final admission. These are almost certainly related to a degree of inhalation and impaired coughing. The respiratory medicine consultant was also of the view that she had deteriorating lung function while at home. It is highly likely that [Mrs C] would eventually succumb to such respiratory problems as a result of her MS although, of course, it is impossible to predict when.'

Advisers 2's conclusions/comments on Mrs C's treatment

27. Adviser 2 stated 'Very sadly Mrs C succumbed to the almost inevitable consequence of MS affecting the brain stem causing destruction of her swallowing mechanism. Once this had occurred, there was a certain inevitability of the eventual outcome'.

28. Adviser 2 also noted 'There is no information in the record that would confirm or refute Mr C's belief that Mrs C's position during feeding was inappropriately low. The feeding tube was undoubtedly in the stomach, therefore, any inhalation of food must have been caused by either gastro oesophageal reflux or the vomiting recorded in the notes. The junior medical staff appear to have been slow in recognising that significant episodes of inhalation were occurring while Mrs C was on the ward and the significance of these, and to respond appropriately. Other than this, there is no evidence that Mrs C's care fell below a standard to be expected'.

Advisers 1's conclusions/comments on Mrs C's treatment

29. Adviser 1 stated 'I acknowledge and agree with the comment made by Adviser 2 that Mrs C's decline in her condition could have been identified

earlier, however, I am unable to prove with evidence that this had any detrimental effect on the care provided, or hastened Mrs C's decline'.

30. Adviser 1 added 'I would, however, recommend that the Board revisit their care planning with the staff [as well as] the need to ensure accurate completion of documentation. I was unable to find evidence of an individualised care plan for Mrs C – had this been available it may well have assisted with providing the confidence for Mr C regarding the care delivered to his wife. There were also a number of entries that referred to Mrs C as 'mobilising'. Given Mrs C's pre-disposing health problems and general decline, these entries do not provide an accurate account of Mrs C's presenting condition. The need for accurate information, captured in documentation, should also be highlighted in order to reduce the likelihood of inappropriate care delivery, and conflict at a later stage, if a complaint is raised. Fortunately the entries captured in the 'nursing notes' section of the documentation, the assessments undertaken by physiotherapy and occupational therapy and the medical records do provide an acceptable amount of information to support the opinion that Mrs C received the care and attention required to meet her needs'.

Further enquiries

31. After discussion with Adviser 1 and Adviser 2, it was agreed that, in order to reach final conclusions on the complaints by Mr C, it would be beneficial to obtain further information on Mrs C's case from the Board, as well as putting specific questions to the them.

32. Adviser 2 explained that Mrs C's general condition may have influenced the practicalities of the medical management of her respiratory problem. He suggested that I requested information from the Board on Mrs C's frailty, level of mobility and whether she was able to co-operate with the hospital physiotherapists. I did so and also obtained copies of chest x-ray reports for Mrs C taken during her time in the Hospital and recent x-rays taken prior to this, to allow comparisons to be made.

33. I also put a further four questions to the Board, which are listed below, along with their responses. The response to questions (3) and (4) appear as summaries.

(1) *Was chest physiotherapy requested for, or given to Mrs C, once her aspiration pneumonia had been diagnosed, or at any other earlier stage?*

Please explain the reasoning if it was not given, or was requested, but not given.

'[Mrs C] did not receive chest physiotherapy from time of admission as there were no respiratory symptoms or concerns regarding her breathing. She developed respiratory problems overnight on Sunday 18 February 2007 at 23:30 and was examined by the on-call medical team who, following chest x-ray and blood tests, suspected aspiration pneumonia.

On the morning of Monday 19 February 2007, following consultant review, [Mrs C] was referred for chest physiotherapy. However, her condition deteriorated rapidly, she became unconscious, and died soon afterwards. [Mrs C's] notes do not contain any documentation regarding the physiotherapy intervention that morning.#

(2) Please confirm if the Board produced an individualised care plan for Mrs C for her time in the Hospital, if so, please provide a copy. If no plan was produced please explain why.

'On review of [Mrs C's] case notes, she was admitted with a neck of femur fracture and, therefore, assessed and commenced on a Hip Fracture Patient Care pathway document. When it was established that [Mrs C] would not receive surgery for her hip fracture (and, therefore, would not follow a standard pathway) this documentation was discontinued.

[Mrs C's] case file does not contain any other care plan document. There is documentation of her having daily assessment of needs. Plans for care were documented in her nursing progress notes. Nutritional needs were assessed, documented and care planned accordingly by the dieticians. Physiotherapists assessed, documented and advised regarding mobility.'

(3) Do the Board have a policy on the use of electric beds and special mattresses for patients, like Mrs C, who require assistance to change position and to deal with pressure relief?

'The Surgical and Anaesthetics Directorate at the Board advised that the Quality Improvement Scotland (QIS) Best Practice Statements regarding pressure ulcer prevention and management would give general guidance on the use of support – mattress and cushions. Wards have a flow chart guideline regarding product selection. However, clinical judgement has to be considered when specific mattress surfaces are unsuitable, or not

tolerated, by the patient. There is a section on the Pressure Ulcer Risk Assessment Chart entitled 'Action Plan', to document pressure area care, including equipment in use.

Due to the variations in electric bed frame provision throughout Glasgow, there was no written protocol specifically relating to the use of electric bed frames regarding pressure area care, although this is mentioned in the Board's training sessions, including the nursing induction programme. There has been a programme of electric bed purchases and now two-thirds of the beds in Ward 4 have electric bed frames.

The policies have been under review, although nothing was formalised at the time of [Mrs C's] care. During this time, the guidelines laid out in the QIS Best Practice Statements, ensuring documentation and equipment provision and education met these standards, had been promoted.'

The Board provided a copy of the induction programme for nurses. This also contained information on the role of electric bed frames in pressure area care.

(4) Please explain why Mrs C was not nursed on a special bed or mattress.

'There was no documentation on whether [Mrs C] was nursed on an electrically adjustable bed frame. In 2007 all beds in the orthopaedic unit had pressure redistributing foam mattresses and [Mrs C] would have been nursed on one of these. All beds in Ward 4 have adjustable back rests allowing patients to sit upright with the aid of pillows. Nursing staff have access to additional alternating pressure mattresses where this is considered to be beneficial to individual patients. It is noted that [Mrs C's] skin remained intact throughout her stay in Ward 4, with no evidence of pressure sore formation.'

34. Having assessed this information, Adviser 1 and Adviser 2 made the following comments.

35. Adviser 2 stated 'It would appear that despite Mrs C's profound disability it was possible to obtain chest x-rays of a satisfactory quality and there does not appear to have been any contraindication for chest physiotherapy when the need arose. Chest physiotherapy, in such circumstances, can assist in

unblocking the patient's lungs by helping them to cough up the substance they have inhaled'.

36. Adviser 2 stated 'I observe that Mrs C's chest x-ray on admission (12 February 2007) was reasonably normal despite the evidence in previous years of areas of partial lung collapse. The changes described in the previous x-rays are certainly not diagnostic, but nevertheless compatible with previous episodes of inhalation. The chest x-ray taken on the ward ('portable') at 08:15 on 19 February 2007, after her episodes of hypoxaemia (low oxygen saturation in the blood) the previous evening, showed clear changes of consolidation of the lung compatible with inhalation pneumonia. This episode (on 18 February 2007) was clearly diagnosed and appropriate referral was made. The Board indicated in their response that the consultant who assessed Mrs C on 19 February 2007 apparently requested chest physiotherapy but Mrs C succumbed before this was undertaken'.

37. Adviser 2 added 'The Board also suggests that prior to 18 February 2007 there had been 'no respiratory symptoms or concerns about [Mrs C's] breathing'. The notes indicated, however, that there had been episodes of marked hypoxaemia on 14 and 16 February 2007 when, following the vomiting of bile-stained fluid, Mrs C developed distress and her oxygen saturations fell to 79 percent. Although the on-call SHO was described as 'unconcerned', I remain of the view that a chest x-ray would have been appropriate at this time and, if this confirmed aspiration, chest physiotherapy would have been advisable'.

38. Adviser 1 stated 'In terms of the nursing information, when Mrs C's Hip Fracture Patient Care Pathway was discontinued, there should have been an alternative plan written to ensure that Mrs C's complex care needs, arising from her severe MS, were planned and co-ordinated. This would have included information on eating, drinking, positioning, movement, etc. Such a plan is vital to ensure person centred individualised care'.

39. Adviser 1 also stated 'The Board's induction programme for new staff and the Directorate's use of NHS QIS Best Practice Statements regarding pressure ulcer prevention are commendable. I acknowledge that clinical judgement is required for assessing the needs of patients, however, I would expect that a policy providing information and guidance on the use of special mattresses and beds should be available for all staff. The flow chart would be part of the policy'.

40. Adviser 1 noted 'In the case of Mrs C, the lack of a care plan and policy may have hindered staff making the decision to order a special mattress or bed'.

Adviser 1 and Adviser 2's final conclusions

41. Adviser 2 - It seems probable that an opportunity to diagnose recurrent inhalation was missed on 16 February 2007. Diagnosis and treatment at that time may have improved Mrs C's chances of surviving that particular episode, but it is difficult to say that the outcome, that day, would definitely have been different.

42. Adviser 1 – In light of Mrs C's condition, I would be critical of the Board for failing to devise a care plan, including information on an appropriate type of mattress. However, it is difficult to say if that, had this been done, it would have changed the outcome in any way. I would also suggest that the Board consider greater use of special electric beds for future management of patients who require assistance to change position and for pressure relief and that a policy providing information and guidance on the use of special mattresses and beds should be available for all staff.

(a) Conclusion

43. Mr C has expressed concern that his wife was not fed in a sufficiently upright position. The Board have said that during her time in the Hospital, staff fed Mrs C in an appropriate manner, either propped up with three pillows in a semi recumbent position, or when sitting up in a chair. Adviser 2 has explained that there is no information in the records on the angle at which Mrs C was fed and it would not be normal practice to record this. Additionally, Adviser 2 has explained that there is no factual information as to what material was actually inhaled by Mrs C, which led to her developing aspiration pneumonia and that it would not be normal practice for this to be determined in cases such as this.

44. Without any actual evidence from Mrs C's records on the angle at which she was fed or the material she inhaled, I cannot prove whether or not Mrs C was fed in a sufficiently upright position. However, the adjustable back rest on Mrs C's bed would have helped ensure that she was in an upright position during feeds. Further, Adviser 1 has explained that, throughout her experience of caring for patients who are fed via a PEG tube, she has not witnessed any incidence of aspiration directly caused by the positioning of the tube or the patient. On balance, therefore, it seems unlikely that the Board failed to feed

Mrs C in a 'sufficiently upright' position or that the angle of feed in this case would have been the cause of Mrs C's demise. I, therefore, do not uphold this complaint.

45. However, I note and agree with Adviser 1 and Adviser 2's comments on the use of special electric beds for future management of patients who require pressure relief and assistance to change position, and on information and guidance in this area being available for all staff.

(b) Conclusion

46. I agree with Adviser 2's view that the Board's treatment of Mrs C on 18 February 2007, when the diagnosis of aspiration pneumonia was made, was appropriate. However, had the Board taken appropriate action on 16 February 2007, including taking a chest x-ray, it appears that a diagnosis of aspiration pneumonia and a referral for chest physiotherapy could have been made at that time. I also share the Adviser's concerns that, given Mrs C's difficulties with breathing that day, the Board administered a drug with a known side effect of suppressing respiration, which may have worsened Mrs C's breathing at that time. Further, I am concerned to see that, despite questions being raised about the accuracy of the pulse oximeter on that day, no action was taken to address this or any potential implications for Mrs C.

47. I also agree with Adviser 1's view that the Board should have prepared a new care plan for Mrs C when her Hip Fracture Patient Care Pathway was discontinued. Had this been available, it would still be difficult to say that the outcome in this case would have been different, however, the existence of an appropriate care pathway and the information contained therein may well have assisted in providing the confidence for Mr C regarding the care delivered to Mrs C by the Board.

48. I conclude, therefore, that the Board failed to notice Mrs C had developed a chest infection and treat it at that time. However, I cannot be certain that this, or the existence of an appropriate care pathway, would have changed the outcome in this case. I, therefore, partially uphold this complaint to the extent that, whilst the Board failed to correctly identify the significance of Mrs C's symptoms on 16 February 2007 and respond appropriately, I cannot say that their failure to do so resulted in Mrs C's death.

(b) *Recommendations*

49. The Ombudsman recommends that the Board:

- (i) apologise to Mr C for failing to notice that Mrs C had developed a chest infection on 16 February 2007 and provide appropriate treatment at that time and for failing to produce a care pathway for Mrs C when the course of her treatment changed;
- (ii) feed back Adviser 2's views on what he considers would have been the appropriate course of treatment for Mrs C on 16 February 2007, to the staff involved in cases of this type and in Mrs C's care, in particular;
- (iii) provide training to staff to ensure that, in all appropriate cases, where the direction of a patient's treatment changes, a new care pathway is devised - this could be by introducing a multi-disciplinary record or audit of documentation;
- (iv) ensure the staff involved in Mrs C's care are made aware of the need to record accurate information on patient mobility in their records;
- (v) review their current policy on the use of special mattresses and beds, incorporating the NHS QIS standards and flowchart; and
- (vi) provide feedback to the staff involved in Mrs C's care on the importance of seeking guidance from a more senior member of the medical team on appropriate treatment and/or to ask technical staff for assistance, in cases where the accuracy of medical equipment, such as a pulse oximeter, is in question.

50. The Ombudsman asks that the Board notify him when the recommendations have been implemented.

Explanation of abbreviations used

Mr C	The complainant
Mrs C	The complainant's wife
The Board	Greater Glasgow and Clyde NHS Board
The Hospital	Victoria Infirmary
MS	Multiple Sclerosis
PEG tube	Percutaneous endoscopic gastrostomy tube
Adviser 1	Ombudsman's nursing adviser
Adviser 2	Ombudsman's gastroenterology adviser
The Guidelines	The Board's Enteral Nutrition Guidelines
IV	Intravenous
SHO	Senior House Officer
QIS	Quality Improvement Scotland

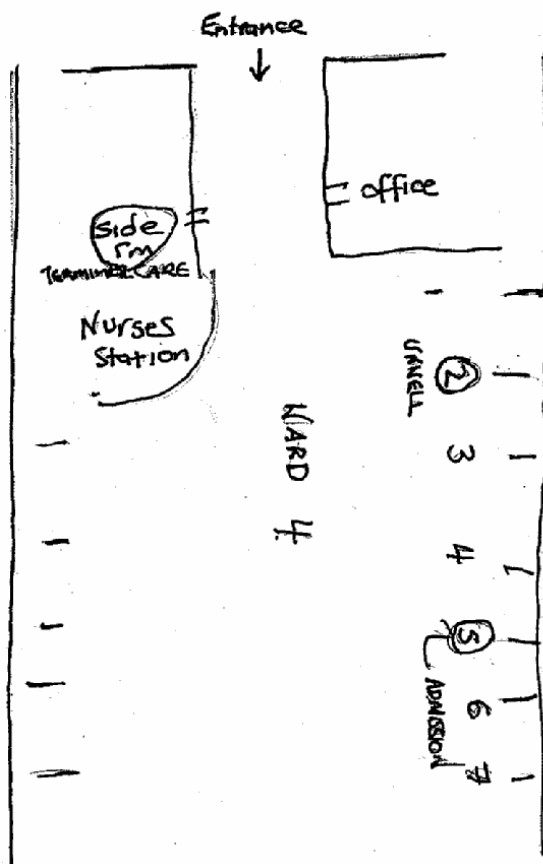
Glossary of terms

Analgesic	Medication that reduces or eliminates pain
Aspiration	Inhalation
Aspiration Pneumonia	An infection of the lungs caused by the inhalation of foreign material into the lungs causing obstruction of the airways
Entera	Within the gastro intestinal tract
Care pathway	Care plan
Gastro oesophageal reflux	Where the contents of the stomach are refluxed into the oesophagus
Hypertension	High blood pressure
Hypoxemia	Low oxygen saturation in the blood
Lower oesophageal sphincter	The muscle which closes the oesophagus
Oesophagus	Gullet
PEG tube	Tube inserted to allow food to be administered directly into the stomach, bypassing the normal swallowing mechanism
Pneumonia	Chest infection
Pulse oximeter	Instrument which measures the oxygen saturation in the blood

List of legislation and policies considered

The Board's Enteral Nutrition Guidelines

The Board's Orientation Programme on Tissue Viability - Prevention and management of tissue damage (acute and chronic)



- Patient was in Bed marked (5) for most of stay.
- Moved to Bed marked (2) on the night she became acutely unwell.
- Moved to single side-room on following day for terminal care.
- Beds are arranged in traditional 'Nightingale' fashion, so beds (5) + (2) can be directly observed by nursing station in close proximity.

