IN THE COUNTY COURT AT SHEFFIELD Case No: F80SE040

The Law Courts
50 West Bar, Sheffield
S3 8PH

Date: 9/12/2021

BEFORE

**HIS HONOUR JUDGE SADIQ**

BETWEEN:

**MR ANDREW DOUGLAS MILLER**
**PERSONAL RESPRESENTATIVE OF MRS SANDRA MILLER (DECEASED)**
**Claimant**

-v-

**UNIVERSITY HOSPITALS COVENTRY AND WARWICKSHIRE NHS TRUST**
**Defendant**

JONATHAN HAND QC (Instructed by Irwin Mitchell) appeared on behalf of the Claimant

RICHARD FURNISS (Instructed by Bevan Brittan) appeared on behalf of the Defendant

Hearing dates: 1-5 November 2021

**APPROVED JUDGMENT**

**His Honour Judge Sadiq**

Introduction

1. This is a clinical negligence claim brought on behalf of the estate of Sandra Miller. The claim is brought by her personal representative, her husband, Andrew Miller. There is also a claim by the claimant and Mrs Miller's half-brother, Brian Porter, as dependants, under the Fatal Accidents Act 1976 ("the 1976 Act").

2. In summary, on 16 September 2016 Mrs Miller, who was 51 years of age, was involved in a serious road traffic accident. She suffered multiple orthopaedic injuries including multiple fractures. She was taken to hospital by air ambulance where she underwent surgery for the fractures and was admitted to the intensive care unit. On 5 October 2016 a CT scan of Mrs Miller's abdomen and pelvis was carried out which was reported by Dr Sheikh. The defendant admits that it was negligent in failing to have that CT scan reviewed by the on-call radiology consultant within 24 hours. Had it taken place the appearance of intra-mural air in the small bowel on the CT scan and its significance would have been recognised, leading to the general surgeons considering the probable presence of ischaemia and that urgent surgery was essential and Mrs Miller would have undergone surgery by way of laparotomy on 6 October 2016. In fact, overnight on 10 to 11 October 2016, Mrs Miller's bowel condition deteriorated and she died on 11 October 2016 from peritonitis due to bowel perforation. The defendant admits that Mrs Miller may not have died on 11 October 2016, but her condition would have progressed and she would have died from it within days or weeks in any event. The primary issues are therefore causation and quantum.

3. The trial came before me for my determination of causation and quantum. The claimant was represented Jonathan Hand QC and the defendant by Richard Furniss. I repeat my thanks to them and to all concerned for their assistance during the trial.

4. The trial necessarily focused primarily on the detailed investigation of a number of complex medical issues regarding causation. No one involved in it could forget, however, that the events of September to October 2016, whatever their cause and outcome, were a tragedy for Mrs Miller and the claimant.

Causation

5. The parties provided me with an agreed list of issues which are relevant to causation and quantum. The principal issue regarding causation is whether, on the balance of probability, the claimant has established that, if Mrs Miller had had surgery on 6 October 2016 then she would have survived in the long term. The expert witnesses called on behalf of the claimant contend that surgery would have found localised bowel ischaemia limited to the caecum and distal small bowel which would have permitted an ileostomy and Mrs Miller would probably have survived. The expert witnesses called on behalf of the defendant contend that surgery would have found generalised ischaemia in the small bowel caused by poor gut fusion and she is unlikely to have survived beyond a few days or weeks.

6. The parties agreed the following heads of damage: (i) general damages for the period 6 to 11 October 2016 at £2,000 plus interest (ii) a statutory bereavement award of £12,980 (iii) funeral expenses, namely the cost of funeral of £4,469 and the cost of reception/wake after the funeral at £1,706.65. The parties also agreed, subject to my finding on causation, a *Regan v Williamson* award for the loss of the special care and attention provided by Mrs Miller to the claimant of £4,000. If I find for the claimant on causation, there is a dispute as to the extent of the past and future financial services dependency claims.

7. I gave permission for the parties to instruct Epiq, a transcription supplier, to prepare a transcript of the evidence during the trial. Following amendments, the parties agreed the transcript of evidence.

Chronology of Events

8. The following chronology is taken mainly from Mrs Miller's medical records. It is intended to be uncontroversial.

9. Mrs Miller was born on 31 March 1965. On 16 September 2016, when she was 51 years of age, Mrs Miller was involved in a serious road traffic accident. She suffered multiple injuries including fractures of the right clavicle, right thumb, right knee, right tibia, right os calcis, left humerus, left femoral shaft, left distal tibia, left fifth to eighth ribs and right sixth and seventh ribs. She was taken to hospital by air ambulance and was admitted at 14.20. The accident and emergency record dated 16 September 2016 contains a diagram of Mrs Miller's body. It refers to a *"haematoma"* to the right groin area below the waist and *"binder*" pointing to an area below the waist. The notes below the diagram record inter alia *"dash onto pelvis".* Over the page, the note records: *"Transferred to CT head/neck – NAD – verbal CT abdo/chest/pelvic injury – left femur + right rib."* A further record on 16 September 2016 states *"binder on pelvis removed seatbelt laceration".* Mrs Miller underwent surgery the same day for the temporary fixation of the fractures of the left femur and right tibia and debridement of the right knee wound. Following surgery, she was admitted to the Intensive Care Unit. On 18 September 2016 she underwent surgery for intermedullary nailing of the left femur. A daily review sheet for 18 September 2016 records under Cardiovascular support: *"Noradrenaline 0.2".* Noradrenaline is a vasopressor. Mrs Miller also had atrial fibrillation for which she was given Amiodarone on, it appears, 25 September 2016, and on subsequent dates.

10. On 27 September 2016, there was a CT angiogram of Mrs Miller's lower limbs. The purpose of that CT angiogram was planning for surgery to the lower limb, particularly the right lower limb.

11. On 29 September 2016, there was a CT scan of the abdomen and pelvis. The daily record sheet of the same date records the reason for it as *"abdominal distension, surgical review, 15.10, spoke to the surgeons, advised CT and inform after a scan".* The verbal report of this scan was made by Dr Sheikh, the radiology registrar, on 29 September 2016 who recorded: *"no perforation, vessels enhanced well, no signs of ischaemia impression ileus".* On the same day the on-call consultant reviewed this scan. The record reads: *"dilated: suggestive of pseudo obstruction. There is possibly a small amount of gas in the caecal wall/pneumatosis coli, however the bowel does look viable without convincing evidence of bowel ischaemia. No obstructing, colonic lesion is seen. There is no collection within the abdomen/pelvis. No evidence of bowel perforation."* The following

day on 30 September 2016 there was a review by Dr Sheikh. The record states: *"The colon is dilated throughout its length with multiple fluid levels, measuring up to 11 cm at the distal descending colon."* It is agreed by the parties that this record should read ascending colon, not descending colon. On the same date, a further record from Dr Sheikh states *"The consultant registrar has kindly reviewed the images, unclear as to whether there is intra-mural gas. Even if there is it is not clinically significant bowel is not ischaemic."*

12. There was a further CT scan of the abdomen and pelvis on 5 October 2016. The reason for that CT scan appears in a record the date of which is not clear on my copy, but it is likely to have been on 5 October 2016. Underneath the little diagram of the abdomen, the nutritionist states on examination, *"impression unlikely to be any intra-abdominal pathology, the plan due to the severe accident and previous CT A.P findings 1. CT A.P to rule out any intra-abdominal collection."* That scan was interpreted by Dr Sheikh on 5 October 2016. The record reads: *"Radiology Report: compared to previous CT 29 September 2016…: Has decompressed from previous CT and is now within normal limits with no localising inflammatory features. This small bowel is dilated throughout with multiple air fluid levels but no transition point, in keeping with ileus. No intra-mural gas locules are identified on current images and previous appearances were presumably artefactual."* In fact, it is agreed that there were signs or appearances with intra-mural gas on this CT scan. As stated above, the defendant has admitted negligence in failing to have this scan reviewed by the on-call radiology consultant within 24 hours, and if it had been concerns would have been raised which would have led to urgent surgery the following day on 6 October 2016. The radiology experts agree that appearances indicative of ischaemic changes affect the distal third of the small bowel, as well as the caecum and the proximal ascending colon.

13. In the subsequent period to 10 October 2016 it is recorded that there was persisting abdominal distension and high naso-gastric aspirates which were faeculent, but that Mrs Miller's clinical condition was essentially stable. On 9 October 2016, a tracheostomy was performed to facilitate weaning from the ventilator.

14. Overnight on 10 to 11 October 2016, Mrs Miller's condition deteriorated rapidly. She became tachycardic and hypotensive with an increased respiratory rate and reduced oxygen saturation. On examination on 11 October 2016 at 0730 it was noted that the abdomen was distended and tympanic bowel sounds were absent. The CT scan of the thorax, abdomen and pelvis was requested which was carried out at about 0900. The report of the scan concluded as follows: *"summary: there are signs of bowel perforation with a little air in the abdomen. However exact site of the perforation is not clear. Distended loops of large and small-bowel up to the rectum which is loaded with faeces. Moderate pelvic ascites with some peritoneal enhancement indicating peritonitis…".*

15. Mrs Miller was reviewed by members of the surgical and ITU teams following the scan. A laparotomy was considered, but it was agreed that she was now too sick to undergo surgery and was in the pre-terminal phase and should be kept comfortable. She died later the same day on 11 October 2016.

The Post-Mortem Report

16. On 19 October 2016 a post-mortem examination was carried out. The post-mortem report prepared by Dr Hollingsbury, Pathologist, and dated 1 November 2016 records the cause of death as a) Peritonitis (b) Bowel perforation secondary to paralytic ileus c) Injuries sustained in a road traffic collision. Under the heading Gastrointestinal System, the report states:

| | |
|---|---|
| *"Small intestines* | *The loops within the right iliac fossa were mottled, with friable walls* |
| *Mesentery* | *Mottled* |
| *....* | |
| *Large intestines:* | *The caecum was friable and haemorrhagic. The descending colon contained formed faecal material."* |

17. Under Histology, the report states inter alia:

| | |
|---|---|
| *"Small and large bowel:* | *The mucosa is extensively autolyzed. No architectural abnormality is noted within mucosa remaining. There is no evidence of colitis or other intrinsic small or large bowel pathology. The presence of florid peritonitis is confirmed with full thickness necrosis of both small and large bowel walls. No thrombus is identified within the mural vessels.* |

18. Under Comments, the report states inter alia:

*"....*

*3. The presence of faecal peritonitis was confirmed. No obstructing lesion was identified within the small or large bowel, and microscopic examination has shown no evidence of intrinsic bowel pathology. No abnormality was identified within the vessels supplying blood to the small and large bowel, and the appendix was normal. Although the precise site of bowel perforation could not be identified, the macroscopic appearance of the bowel support this being in either the caecum or adjacent small-bowel loops. In my opinion, it is this peritonitis that has resulted in Mrs Miller's death.*

*4. No pathological abnormality has been identified within the small or large bowel to explain the presence of a bowel perforation. It is not unusual for patients who are extremely unwell in hospital to develop pseudo-obstruction as a result of paralytic ileus (bowel paralysis in the absence of physical obstruction). In view of the lack of any other pathological explanation for the perforation, I am of the opinion that paralytic ileus, developed as a consequence of sustaining multiple injuries in the road traffic collision, has resulted in the perforation in this case."*

The Evidence

**Lay Evidence**

19. I heard evidence from the claimant. As might be expected, much of the claimant's evidence was relevant to quantum rather than causation and specifically what would have happened had Mrs Miller not died on 11 October 2016.

20. The claimant confirmed that at the time of Mrs Miller's accident on 16 September 2016, they were living in Sapcote, a village in Leicestershire. Both he and Mrs Miller were employed as full-time carers for Mrs Miller's brother, Brian Porter. Mr Porter is a man with Down Syndrome who at the time was in his mid 60s and needed full-time 24/7 care. He lived in a bungalow around the corner from them at Castle Close. After Mrs Miller's and Mr Porter's mother, Doreen, died in 2012, Mr Porter lived in the Castle Close bungalow with his father, Bob. Mrs Miller looked after both her father and Mr Porter and was in receipt of carer's allowance of £65 per week. In 2013, the claimant became Mr Porter's personal assistant and was technically employed by Mrs Miller but was paid by Leicestershire County Council. When Bob died in July 2016, the continuing healthcare provision which allowed for three overnights per week of care was lost. Apart from six hours on a Friday afternoon, the claimant and Mrs Miller looked after Mr Porter 24/7 in his bungalow which involved either or both of them being there all the time.

21. Before Mrs Miller's accident on 16 September 2016, the claimant accepted that the couple were already under severe carer strain. Apart from 6 hours per week care, the couple looked after Mr Porter all the time in a different property and it was very difficult. After Mrs Miller's accident, the claimant couldn't manage on his own caring for Mr Porter without Mrs Miller. After Mrs Miller's death, her brothers and sister in law were no longer prepared to help with Mr Porter's care and the claimant requested that adult social care provide additional care. On 15 October 2016 Mr Porter had a fall and was diagnosed with epilepsy. At this stage the claimant was providing 37 hours per week paid for care and the local authority was putting in another 31½ hours per week plus 2 sleepovers to give the claimant some respite. This was significantly less than the 168 hours per week Mr Porter needed to be cared for and the claimant was providing informal care without being paid.

22. Mr Porter did not spend Christmas 2016 with the claimant and at his request he was taken to his brother's for the Christmas period. The family agreed to give the claimant a week's respite, not the two weeks he had requested. Over Christmas, the family decided without consulting the claimant that Mr Porter needed to go into residential care and the claimant was informed of this decision on 9 January 2017. The claimant did not contest that decision and resigned as Mr Porter's personal assistant on 16 January 2017. The claimant was unable to support Mr Porter on his own and he went into residential care on 10 January 2017.

23. The claimant accepted that had Mrs Miller had surgery on 6 October 2016 and made a good recovery, she still would have had serious orthopaedic injuries. On the agreed orthopaedic expert evidence, Mrs Miller would have been discharged home by late January 2017 at the latest and the claimant accepted that he would have had exactly the same difficulties coping with Mr Porter's care as in fact he did. Mrs Miller would have now been disabled from her orthopaedic injuries and based on the agreed orthopaedic expert evidence would have needed 36 months of orthopaedic rehabilitation. She would have been restricted to helping organisation, entertainment and accompaniment for Mr Porter; would have been unable to assist him with toileting and personal hygiene,

including bathing and washing; could have directed him putting his clothes on, could have offered limited help from a seated position; could have planned the meals undertaken shopping online but would not have been able to clean the bungalow where Mr Porter lived. The claimant said he didn't know whether he could have coped with looking after Mr Porter under those circumstances. He said it wouldn't have been Mrs Miller's wish for Mr Porter to go into residential care. When it was put to the claimant that the same thing would have happened had Mrs Miller come home disabled at the end of December 2016 namely Mr Porter would have gone into residential care, the claimant said it was difficult to think about really. He accepted he would have had to look after Mrs Miller if she had come home disabled and would have helped her with the cleaning. It is not in dispute that Mr Porter has cancer and sadly limited life expectancy. In answer to the question that even after Mr Porter's death with Mrs Miller in her disabled condition he would not have allowed her to go out to work, the claimant said *"Well we don't know what her recovery would have been really."* There were no big employers in the village and the nearest big employment centre was in Lutterworth, which was approximately six miles away. Mrs Miller could have driven short distances. The claimant didn't know how Mrs Miller, who would have been in her late 50's, would have found, travelled to and performed a paid job. He accepted he would have been able to work full-time, unless he was needed at home to look after Mrs Miller.

24. The claimant had taken no part in the decision that Mr Porter be considered for a residential placement. In early 2017 he didn't want Mr Porter to go into a home and Mr Porter's parent's and Mrs Miller's wishes was to keep him in his own home. Putting him in a residential environment meant changing his routine and Mr Porter had difficulty dealing with changes. He had resigned as Mr Porter's personal carer in January 2017 because of the decision made by the family. He did not want to stop caring for Mr Porter at that time.

**Expert evidence**

25. Oral expert evidence was called from six medical expert witnesses, who came from three areas of expertise:

    (i) Consultant radiologists Professor Dawson for the claimant, and Dr Tolan for the defendant, gave evidence interpreting various CT scans to help determine the nature and extent of the bowel problem;

    (ii) Consultant general surgeons Professor Winslet for the claimant and Professor Scholefield for the defendant, explained their competing theories of the cause of the ischaemia and the likely consequent outcome.

    The evidence from these four medical experts was given in person.

    (iii) Consultant anaesthetists/intensivists Dr Power for the claimant and Dr McCririck for the defendant, gave evidence remotely about the probability of Mrs Miller surviving surgery on 6 October 2016.

    The medical experts in their areas of expertise provided joint statements.

(iv) Consultant orthopaedic surgeons Mr McFadyen for the claimant and Mr Kelly for the defendant were due to give evidence remotely. Their evidence dealt with Mrs Miller's likely recovery from the serious orthopaedic injuries sustained in the road traffic accident, and her ability to work and provide domestic services if she had survived. The consultant orthopaedic experts also provided a joint statement and there was no real issue between them save for the risk of amputation to the right limb if Mrs Miller had not died on 11 October 2016 and made a good recovery from her abdominal injuries. On day three of the trial the parties agreed that this was based on a misunderstanding of the general surgeon's expert evidence. The agreed proposal was to ask the court to essentially ignore what was said about the risk of amputation if Mrs Miller had survived and approach the matter on the basis that if the claimant's case was accepted (surgery on 6 October 2016 and a relook procedure thereafter and Mrs Miller would have survived) then there would have been no risk of amputation of the right limb. Conversely, if the defendant's case was accepted (Mrs Miller would not have survived beyond a few days after surgery) then the right limb amputation was obviously not relevant. I agreed to approach this case on the basis of the agreed proposal regarding the consultant orthopaedic expert evidence.

*The radiologists evidence*

26. In a joint statement dated 6 April 2021, it is agreed by the radiologists that:

(1) Regarding the CT scan of the head, neck and whole body on 16 September 2016, the large bowel and small bowel are normal. There are no signs of mesenteric injury of the small bowel or large bowel and the superior mesenteric artery and vein are patent.

(2) Regarding the CT angiogram on 27 September 2016, the entire large bowel is markedly distended to about 9 cm; the small bowel is not significantly dilated. There is no site of apparent obstruction and no evidence of perforation. The appearances suggest ileus has developed which was not mentioned at the time of the original report for the study. The superior mesenteric artery and vein look normal.

(3) Regarding the CT scan of the abdomen and pelvis on 29 September 2016, the large bowel remains dilated, and in part more so. The report describes the presence of some intra-mural gas in "descending colon" (pneumatosis coli). In fact, it lies in the caecum and ascending colon, the confusion arising because the caecum does not lie, as might be expected in situs inversus, on the left side of the abdomen but largely on the right. The distal small bowel is now abnormally dilated which is a new feature. The large and small bowel enhance normally at this time. There is no free gas and no evidence of obstruction and we would label this as pseudo-obstruction with pneumatosis coli.

(4) The reference in the report of the CT scan on 29 September 2016 to intra-mural gas in the "descending colon" is an error and this should be a reference to the "ascending colon" i.e. to the part of the colon on the right side of Mrs Miller's abdomen.

(5) The appearances on the CT scan on 29 September 2016 are indicative of intramural gas in the caecum and a pseudo-obstruction. It is agreed that these findings are present and significant. New pneumatosis in the context of progressive dilation of

the affected segment of large bowel would indicate that ischaemia is developing in this part of the colon, particularly given the subsequent progression on imaging and eventual post-mortem findings. The court should be aware that ischaemia of the bowel may be present when there is apparently normal enhancement of the bowel on CT scans after intravenous contrast and that this is well recognised in both radiology and surgical practice.

(6) Regarding the CT scan of the abdomen and pelvis on 5 October 2016, progressive pneumatosis in the setting of long-standing small bowel and large bowel dilation indicates generalised bowel ischaemia on a strong balance of probabilities, since a long segment of the small bowel is abnormal in addition to the right colon. This is further supported by the observation of poor contrast enhancement of the distal small bowel on the scan.

(7) Had the CT scan of the abdomen and pelvis on 5 October 2016 been reviewed by consultant radiologist, the consultant radiologist would have noted the extensive intramural gas in the large and small bowel and it would have highlighted its possible significance, namely ischaemic bowel.

(8) The appearances on the CT scan of the abdomen and pelvis on 5 October 2016 of progressive pneumatosis are indicative of ischaemia. These changes affect the ileum and right colon. These loops are in the right flank and right iliac fossa. As regards the proportion/length of bowel affected by ischaemia, the changes affect the distal 1/3 of the small bowel as well as the caecum and the proximal ascending colon.

(9) The appearances on the CT scan of the abdomen and pelvis on 5 October 2016 is of progressive generalised abnormality of the mid and distal ileum as well as the right colon which is associated with both pneumatosis and reduced contrast enhancement of the small bowel. The combination of persistent dilation, progressive pneumatosis and reduced contrast enhancement makes generalised bowel ischaemia the most likely on the balance of probabilities. The experts would not define such an abnormality as localised, given the extent of abnormality that is present which is affecting a long segment small bowel.

(10) The appearances on the scan of the abdomen and pelvis on 5 October 2016 show no signs of perforation at that time.

(11) Regarding the CT scan of the chest, abdomen and pelvis on 11 October 2016, there is now a large amount of free peritoneal air and fluid and gas in the right abdomen, suggesting a terminal small bowel or caecal perforation.

(12) Regarding the CT scan of the chest, abdomen and pelvis on 11 October 2016, the perforation was the result of ischaemia.

(13) Regarding the CT scan of the head performed on 5 October 2016 the report of the scan by Dr Sheikh is comprehensive and detailed and entirely accurate. The relevant conclusion is that there is "No acute brain pathology."

27. In his supplemental statement on 9 April 2021, Professor Dawson clarified his apparent agreement in the earlier joint statement that the scan on 5 October 2016 showed

generalised ischaemia in the bowel. He said that what he meant by the term "generalised" was that ischaemia was not "localised" but there was no radiological evidence that the whole bowel was generally involved. He had not intended to mean the whole of the large and small bowel, including those which did not exhibit the abnormalities, was involved.

28. Professor Dawson, Consultant radiologist was called by the claimant. He was formerly Clinical Director and Consultant Radiologist at UCL Hospitals, London. He would not hold himself out as a specialist in gastrointestinal radiology.

29. Regarding the CT scan on 5 October 2016 and the finding of intra-mural gas, Professor Dawson said on imaging it appears within the wall of the bowel which may indicate an ischaemic bowel. The remainder of the large and small bowel exhibited good wall enhancement which is a good indicator that blood flow is normal. Conversely, if there is poor wall enhancement this suggests that blood flow is insufficient. In his report, he estimated the proportion of the small bowel affected by ischaemia was approximately one third. He agreed with Dr Tolan's estimate of 40-50 cm in the same area affected. Although it was not within his field of expertise, Professor Dawson was very sceptical about Professor Schofield's low flow state hypothesis. He would have expected more susceptible areas of the bowel to be affected by ischaemia, such as the splenic flexure and the recto sigmoid junction, but these areas were not affected.

30. Professor Dawson accepted that he was not a sub-specialist in gastro-intestinal radiology, but many aspects of this case were, he said, *"GCSE radiology rather than A level"*. He had never been a member of the British Society of Gastrointestinal and Abdominal Radiologists. As regards his recent experience of dealing with acute bowel radiology, Professor Dawson said he did general CT lists which included a great amount of GI imaging. He accepted he was not dealing on a daily basis in a unit with acute abdominal injuries but didn't think anyone was. He accepted that his evidence about the splenic flexure and the rectosigmoid junction being more susceptible to ischaemia than others was new evidence which he had not mentioned before. He was aware that Dr Tolan was a sub-specialist in gastrointestinal radiology.

31. Professor Dawson accepted in Mrs Miller's A&E notes on 16 September 2016 that there was no suggestion of any abdominal injury and over the following days, and despite repeated examination, there is no suggestion of anyone discovering an abdominal injury. Having looked at the CT scan on 16 September 2016, the date of the road traffic accident, Professor Dawson agreed with Dr Tolan that there was no evidence of any abdominal injury on that scan, but said that on the day of the accident the injury might not show up on the scan. Regarding the CT angiogram on 27 September 2016, 11 days post-accident, there was no sign on this scan of any traumatic injury to the bowel. Professor Dawson said that he wasn't sure that had Mrs Miller suffered a blunt trauma in the road traffic accident, which was responsible for the ischaemia which caused the death it should have been visible on the scan, because the blunt trauma may have affected the small vessels. Regarding the question that it was not feasible had this been a blunt trauma injury, it wouldn't have manifested itself radiologically by 27 September 2016, Professor Dawson couldn't answer that definitively as a radiologist.

32. As regards the CT scan on 29 September 2016, with the benefit of hindsight it was clear that ischaemia was developing in the caecum and ascending colon. The fact that there was good enhancement of parts of the bowel on the scan did not mean there wasn't ischaemia.

33. Regarding the CT scan on 5 October 2016, Professor Dawson confirmed that the radiologists' joint statement said: *"We agree that progressive pneumatosis and the setting of long standing small bowel and large bowel dilation indicates generalised bowel ischaemia on a strong balance of probabilities, since the long segment of the small bowel is abnormal in addition to the right colon."* In a later part of the joint statement, the word "generalised" was used again: *"We agree that there is progressive generalised abnormality of the mid and distal ileum as well as the right colon which is associated with both pneumatosis and reduced contrast enhancement of the small bowel. The combination of persistent dilation, progressive pneumatosis and reduced contrast enhancement makes generalised bowel ischaemia the most likely on a strong balance of probabilities."* Regarding the meaning of the word "generalised" in the joint statement, Professor Dawson told me:

> *"Yes, it was brought to my attention there could be an ambiguity here with the word generalised, and when I reviewed it, I thought since this is such a central part of the case it was necessary to be precise. So I reviewed what we had said in the joint statement and we had used the term "generalised abnormality of the mid and distal ileum". Now, I took that to mean this was not just the ileum, not just the large bowel; this was both. This was not just a short segment of one – this was longer segments of both. So here I took it that the word "generalised" meant rather extensive; generalised throughout to those areas, not generalised to the whole bowel."*

34. Professor Dawson said that the reason for his supplemental statement was to stress that he had not taken the word "generalised" to mean the whole bowel. He estimated that the scan showed 50 cm of small bowel ischaemia which was quite extensive. He accepted that there was no evidence of a local traumatic injury on any of the scans and the superior mesenteric artery and vein had normal enhancement. He agreed as stated in the joint statement that the court should be aware that ischaemia of the bowel may be present when there is apparently normal enhancement of the bowel on CT scans after intravenous contrast and this is well recognised by radiologists. The 5 October 2016 scan showed ischaemia, but further ischaemia even though there was normal enhancement couldn't be ruled out. As regards the post-mortem evidence, Professor Dawson said he would leave that to the judgment of the pathologist and the general surgeons, and it was not something he would probably want to comment on. He said that the radiological evidence didn't suggest ischaemia outside the areas that had been identified and the post-mortem evidence for ischaemia elsewhere was scant. On the balance of probability, he would say that the remainder of the bowel was not ischaemic because the radiological appearances did not suggest that it was, and the post-mortem didn't indicates that it was either.

35. Dr Tolan, Consultant gastrointestinal radiologist was called by the defendant. He is a sub-specialist in gastro-intestinal radiology.

36. Dr Tolan said that Professor Dawson's new evidence that the splenic flexure and recto sigmoid junction are more susceptible to ischaemia than other parts of the gut was true, but in a very different scenario to the present and so that opinion had no relevance to this case. As regards the expert's joint statement, Dr Tolan believed that when he had finished the joint meeting with Professor Dawson they were in agreement that there was generalised abnormality of one third of the bowel. As a radiologist dealing with bowel

imaging every day, he would never describe a process that involves one third of the bowl as a being localised and by definition that was a generalised process. The third of bowel being ischaemic was almost by definition a generalised process of the small bowel. Dr Tolan disagreed with Professor Dawson that it was likely with a laparotomy that the rest of the bowel would have been healthy. This came down to the process that was driving the ischaemia. It was the dilation of the bowel itself which was the reason why the bowel subsequently became ischaemic and perforated because the scans showed that the whole of the small bowel was dilated. Therefore, it was reasonable to infer that the ischaemic process was likely, on the balance of probabilities, to involve more than just the lower part of the small bowel. More of the bowel was likely to be affected than was visible on the scan on 5 October 2016.

37. Dr Tolan disagreed that on post-mortem no abnormality was found elsewhere in either the small or the large bowel. He said there were additional abnormalities in the post-mortem report which potentially denoted more extensive abnormality, namely the mesentery, which is a very large organ, was mottled. Further, the post-mortem report described the mucosa as "extensively autolysed" which means that it was broken down. The mucosa does break down in ischaemia, but it can also be autolysed as a consequence of post-mortem degeneration. Therefore, it was difficult to say on the basis of the post-mortem alone that this was actually a localised process and not also involving the mucosa.

38. Dr Tolan accepted that the evidence that was going to help the court was the imaging and the findings post-mortem. In his opinion, the dilation of the small bowel was itself the disease process that led to ischaemia that led to perforation. Dr Tolan was aware of Professor Scholefield's hypothesis of low flow state affecting extensive parts of the small and large bowel, but didn't think it was necessary to put other aspects, either the imaging or the post-mortem report that supported the hypothesis, in his conclusion.

39. As regards the hypothesis that the injury to the small bowel was caused by a trauma or impactful injury, Dr Tolan's opinion was that it was almost incomprehensible that a bowel injury of that type would occur and 11 days later on CT scan would not show as an abnormality of the mesentery or some kind of traumatic injury to the mesentery. In his opinion, a traumatic injury to the mesentery or bowel was exceptionally unlikely and the actual mechanism of ischaemia and subsequent perforation of the bowel was as a result of progressive dilatation.

40. In the joint statement Dr Tolan had agreed that the affected area of the distal third of the small bowel was up to 40 to 50 cm and this was where he saw abnormality in the form of pneumatosis at the time of the CT scan on 5 October 2016. He accepted that pneumatosis is or maybe a manifestation of ischaemia on imaging and appears as an abnormality in the wall of the bowel. He accepted that good enhancement shows that blood is getting to the bowel and conversely poor enhancement shows blood was either not getting there or not getting there very well. Poor enhancement may be a sign of ischaemia on imaging. He explained that one of the limitations of CT was that it might appear to show a relatively limited abnormality, but when the patient came to surgery there will be far more extensive abnormality than had been actually appreciated. Regarding the CT scan of the abdomen or pelvis on 29 September 2016, there was no sign of ischaemia shown by any poor enhancement of the bowel wall. As regards the CT scan on 5 October 2016, on imaging there was pneumatosis limited to the distal part of the small bowel and also in part of the cecum and ascending proximal bowel, and there was poor enhancement

limited to that part of the distal small-bowel. In Dr Tolan's opinion there was likely to be far more abnormality if the surgeon was to operate based on his own personal experiences of dealing with these cases day-to-day. Although a CT scan done sooner or immediately after the traumatic injury is recognised to miss traumatic injuries, this was unlikely to be the case after a period of 11 days. Dr Tolan disagreed that radiologists were limited to interpreting scans and the follow up over the weeks following the trauma was a matter for the surgeons. He described a symbiotic relationship between radiology and surgery which was critical in acute abdominal cases, and surgeons relied heavily on the radiologists to help them decide whether or not to operate. In Dr Tolan's opinion, it was not feasible that a CT scan taken 11 days after the road traffic accident on 27 September 2016 would miss a traumatic injury to the abdomen.

*The general surgeons evidence*

41. The general surgeons agreed about the following matters in their joint statement:

(1) Mrs Miller died on 11 October 2016 as a result of peritonitis due to bowel perforation, and that the perforation probably occurred between 10 and 11 October 2016.

(2) The perforation occurred either in the caecum or adjacent small loops.

(3) At the post-mortem examination, the bowel ischaemia was reported as localised to the distal small-bowel and caecum.

42. The general surgeons disagreed about the following matters in their joint statement:

(1) They disagreed about the mechanism of the bowel perforation. Professor Winslet's view is that the perforation occurred due to blunt trauma in the mesenteric blood supply as identified at post-mortem by mottling of the mesentery. Professor Scholefield believes that the perforation occurred as a result of low blood flow in the gut secondary to prolonged use of vasopressor's to maintain Mrs Miller's systemic blood pressure, ischaemia.

(2) Regarding the cause of the bowel ischaemia, Professor Winslet believes that it was due to mesenteric trauma from the original seatbelt restraint resulting in local ischaemia. Professor Scholefield believes that the cause of the ischaema was due to a low flow state induced in the small bowel wall as a result of the repeated Noradrenaline infusions (at double strength in late September).

(3) The experts disagreed about what surgery would have found on 6 October 2016 and whether an ileostomy could have been constructed at surgery on this date. Professor Winslet believes that ischaemia would have been identified in the distal small-bowel and caecum and an ileostomy could have been created, probably at the relook laparotomy. Professor Scholefield agrees but also believes extensive patchy ischaemia of the small bowel would have been identified. His view is that at the relook laparotomy the patch ischaemia of the small bowel meant that it probably would not have been possible to create a viable ileostomy. Both experts agree however, that if the court finds that there was generalised ischaemia of the small bowel then although it is likely there would have been between one and three further

relook laparotomies, to assess or resect further areas of small bowel, it is unlikely that Mrs Miller would have survived the illness;

(4) In terms of Mrs Miller's survivability had she received appropriate treatment on and after 6 October 2016, Professor Winslet believes that in the presence of a right hemicolectomy with excision of the distal small-bowel in a damage limitation laparotomy followed by a relook laparotomy and ileostomy construction, on the balance of probabilities Mrs Miller would have survived. Professor Scholefield's view is that given the complexity of her injuries and her underlying condition, taking this into account along with multiple surgeries required for her orthopaedic injuries, plus at least two laparotomies for gut ischaemia and potentially a period of parenteral nutrition, Mrs Miller is unlikely to survived.

43. Professor Winslet was called for the claimant. He confirmed that he had since retired from the NHS and was currently an Emeritus Consultant surgeon at the Royal Free and University College in London. He expanded on the reason why in his opinion the perforation occurred due to trauma in the mesentery blood supply. He told me that in his opinion, Mrs Miller suffered a severe blunt trauma to the abdomen as evidenced by the fact he understood the crash was in a 60 mph zone and she was restrained in her seatbelt. At the time of the removal of her pelvic binder, she had a soft tissue injury across the pelvis which was supported by radiological evidence. The pathology identified by the pathologist in the post-mortem report was the right iliac fossa which is an area adjacent to where the soft tissue injury at the time of the road traffic accident was identified. The pathologist described the mesentery as mottled. The CT angiogram identified a marked dilation of the colon. The underlying diagnosis of this was pseudo-obstruction, otherwise known as Ogilivie's Syndrome, which is an idiosyncratic condition associated with retro-peritoneal trauma namely trauma behind the gut. In pseudo-obstruction the bowel acts like it is obstructed downstream, but there is in fact no obstruction there. On the CT angiogram on 27 September 2016, it was present. The CT scan on 29 September 2016 showed that dilation increased to 11 cm. Once the diameter of the colon becomes greater than 10 cm, the patient is at risk of developing ischaemia and subsequent perforation. Between the second CT scan on 27 September and the third CT scan of 29 September, Mrs Miller was treated for potential pseudo-obstruction with Neostigmine. On the 5 October 2016 scan, the small bowel had dilated and had gas in its wall. Professor Winslet said that if the court accepts the pathologist's findings that this abnormality was confined to one of the nine areas of the abdomen, the only way he could account for that was that the initial seatbelt trauma caused a retro-peritoneal trauma with a venous injury to the mesentery, which then resulted in pseudo-obstruction of the large bowel, resulting in dilation of the small bowel resulting in ischaemia and then perforation. He couldn't comment on the radiology because he was not a radiologist, but he would agree with the radiologists that scans can under or over report ischaemia. But he would expect the ischaemia to be evident post-mortem and there was no comment.

44. In Professor Winslet's opinion if the operation had occurred soon after 5 October 2016, surgeons would have found an ischaemic cecum and part of the ascending colon; there would have been distal small bowel ischaemia of approximately one third. The approximate length of the small bowel is between 250 to 300 cm in length. Mrs Miller would have lost 100 cm of the small bowel, leaving 150 cm of the small bowel and her remaining colon. To be independent nutritionally requires 100 cm of small bowel. If the court accepts this is operable, Mrs Miller would have undergone a 100 cm small bowel

resection and a right hemicolectomy. She would have had a laparotomy and her abdomen would have been left open to allow it to recover. Surgeons would have gone back in 48 hours later to form an end stoma of the small bowel and the mucous fistula and the abdomen would have been closed. She would not have suffered from peritonitis and in the absence of anastomosis, on the balance of probabilities Mrs Miller would have avoided any major septic complications.

45. Professor Winslet accepted that the post-mortem examination report was not as detailed as he would have liked for this particular matter. Although the mesentery was described as mottled, there was no indication of the extent to which the mesentery was mottled or whether the whole of the mesentery was mottled and whether there was patchy mottling. Professor Winslet accepted that autolysis of the mucosa could be a natural deterioration post-mortem or it could be a sign of the presence of ischaemia. He accepted that the pathologist didn't comment on any blunt trauma. In Professor Winslet's opinion, if you decelerate at 60mph with your seatbelt on and you have external stigmata of that deceleration, then there is a high risk of blunt trauma to the abdomen resulting in injury. Professor Winslet accepted however that the CT scans to look inside the body and the initial CT scan on 16 September didn't show any internal abdominal injury. He also accepted that none of the scans including the CT scan taken 11 days later on 27 September 2016 showed any sign of blunt trauma injury to the abdomen. He said it would manifest itself, from a surgical perspective, with either perforation or haematoma, and neither of those were reported on the scans, other than pneumatosis in the large bowel and subsequently the small bowel. Professor Winslet accepted that ischaemia in one third of the small intestine was a substantial length and there can be damage in areas where there is good definition on the scans, and this was a recognised phenomenon. He didn't accept that a laparotomy was going to see patchy ischaemia beyond what was visible on the radiology, if the court accepts that the initiating factor was local trauma.

46. Regarding what would have happened had Mrs Miller had been operated on 6 October 2016, he said that she would have had a laparoscopy which would have showed localised ischaemia in the right iliac fossa. This would have been converted to laparotomy and resection which would have left 200 cm of the small bowel, which amounts to independent nutrition. There would have been two surgical procedures. Mrs Miller would have had a laparoscopy first, followed by a laparotomy with resecting of the ischaemic bowel; her bowel would have been left open and she would have been returned to ITU with a view to having her back in theatre approximately 48 hours later; she would probably have been ventilated; the area of ischaemic gut would have been washed out and drained out at the original laparotomy and rewashed at the time of abdominal closure and therefore Mrs Miller would not have suffered significant life-threatening sepsis as a result of the resection; 48 hours later she would have been back in theatre to review the cut ends of the bowel to ensure there was no further ischaemia by cutting the staple line and the bowel bleeding again and if it bleeds it is viable and an ileostomy could have been constructed; 48 hours after the second operation keeping the abdomen open Mrs Miller would have been returned to ITU and there would have been third look after the surgical procedure or second relook procedure 48 hours later. On the balance of probabilities Professor Winslet confirmed that there would have been a need for a third surgical procedure or second relook. The outcome would have been the same and Mrs Miller would have survived. Regarding the abdomen being left open, the bowel would be stapled off and the gut would be protected with appropriate packs placed over the open bowel sealed by a piece of cling film.

47. Professor Winslet clarified that on the balance of probabilities there would have been one relook only, but he couldn't exclude the possibility of a further relook i.e. a second relook. He said that a third of the ichaemic small bowel was approximately 100 cm and so with the average length of the small bowel being 250 to 300 cm, 150 to 200 cm would have remained following resection. To maintain oneself nutritionally orally, you need 100 cm at least. In Mrs Miller's case, she would have retained 200 cm.

48. Professor Scholefield was called for the defendant. He was formerly Professor of Surgery at Queens Medical Centre, Nottingham and now practices at the BMI Park Hospital, Nottingham. He disagreed with Professor Winslet's evidence that the mechanism of the ischaemia was blunt trauma. Professor Winslet's view, he said, was based on the presence of mesentery mottling seen in the post-mortem. However, the quality of the post-mortem evidence was not good and mesenteric mottling could be from a number of causes and there was no evidence of the extent of mesenteric mottling. Further, although there was some evidence of haematoma in the groin area and the initial CT scan showed some soft tissue damage of the anterior superior iliac spine, the pelvis was intact. Therefore, it was very unlikely that there was a blunt trauma to the right iliac fossa, because the actual bruising and damage was significantly below the right iliac fossa, at the top of the pelvis. He described Professor Winslet's evidence that this was mesenteric injury due to blunt trauma with no CT evidence of damage to the mesentery, as *"bizarre"*. The mottling to the mesentery was found at post-mortem four weeks after injury. In Professor Schofield's opinion, the cause of the ischaemia was that the vasopressors used for a protracted period in ITU had caused splanchnic vasoconstriction. This led to ischaemia in the small bowel and possibly due to the pseudo-obstruction also in the cecum. This caused the ischaemia which was seen on the CT scan around 5 October 2016, which subsequently led to the perforation because Mrs Miller was not operated upon.

49. An operation on 6 October 2016 would have required a laparotomy which would have found ischaemia mainly in the distal small bowel and the cecum. The surgeon would have resected the ischaemia, which would have been 50 to 60 cm of the distal ileum or maybe 100 cm as Professor Winslet had said. A limited right hemicolectomy, on the claimants pleaded case, would have involved resecting only 5 to 10 cm of small bowel, not 50 to 60 cm. Mrs Miller would have been returned to intensive care following the laparotomy with the abdomen open which involved stapling the small bowel leaving the abdomen open and covering it up with op-site, a self-adhesive cling film and packs. On the ITU, following surgery there would have been a septic shower which would have then required a period of inotropic support and ventilation. 48 hours later, the patient would have come back to theatre for a relook to see whether any further ischaemia had developed. Because the patient was back on Noradrenaline and was being ventilated it would not have been feasible to undertake an ileostomy. A further 20 to 30 cm would have been resected because the ileum was ischaemic and an ileostomy was not possible. The patient would have been returned to ITU with an open abdomen and probably would have come back for the third relook another 48 hours later. Every time you take a patient back to theatre and then back to ITU, they have another septic shower because you are opening the abdomen and the patient is at risk of developing sepsis because you have liberated loads of organisms from the inside of the bowel. After the second relook laparotomy the abdominal musculature would have retracted and with a distended bowel would have been unable to close the abdomen satisfactorily. In Professor Scholefield's opinion the 'die was cast' after the one relook laparotomy, in other words the patient would not have

survived. He clarified that the patient would have had a chance of success after one laparotomy with a localised resection and an ileostomy. However, the basis of the claimant's case as put now, and not the pleaded case, namely a laparotomy resection, going to ICU, coming back after 48 hours for a second relook, although he would defer to the intensivists to some degree, on the balance of probabilities Mrs Miller would not have survived the second relook laparotomy.

50. Professor Scholefield accepted that his view about survivability was predicated on his hypothesis that the bowel ischaemia was widespread both in the small bowel and the large bowel, and therefore it would not have been possible to remove the affected part of the bowel and not have to carry out any further resection. However, he maintained that even on the claimant's case as now put namely a laparotomy, resection, followed by a relook laparotomy 48 hours later, Mrs Miller would not have survived. He accepted that this had always been Professor Winslet's case in his report, but this was not the basis of the claimants pleaded case. Professor Scholefield accepted that his opinion that more was needed than just a limited resection, was based on his hypothesis that Mrs Miller was suffering from low flow state due to the use of vasopressors, and possibly the effects of atrial fibrillation causing low blood pressure. Professor Scholefield accepted that in his report he had noted that the claimant had not pleaded a mechanism for the ischaemia, but in fact this was set out in the claimants Part 18 response which he had read. However, he accepted that he had failed to address the claimant's mechanism of ischaemia in his report. He said *"I honestly- I don't know why that isn't in my report. But I - we did discuss it at the joint expert meeting and I've given my views there."* Professor Scholefield had said in his report that post-mortem didn't identify a mechanism for ischaemia, but accepted that the pathologist had pointed to a mechanism for ischaemia namely paralytic bowel paralysis in the absence of physical obstruction, but he didn't believe that made sense. He accepted he could have said in his report there was a mechanism for ischaemia, but he didn't agree with it. Professor Scholefield accepted that there was an explanation for ischaemia identified in the post-mortem report which didn't fit with his theory of low flow state with a generalised ischaemia, namely pseudo-obstruction which fitted with localised ischaemia. He didn't know why he hadn't addressed this in his report save that he had written his report about a year ago and it was impossible to write a report that in cross-examination the barristers can't find anything to address. Professor Scholefield accepted that in the joint statement he had placed a lot of reliance in support of his low flow theory on the radiology evidence, including Dr Tolan's report. However, in his report he had not referred in the opinion section to Dr Tolan's report or imaging at all.

51. Professor Scholefield said that his hypothesis of low flow state was based on two things, namely the use of vasopressors and "plus or minus" bouts of atrial fibrillation. He accepted that the term "plus or minus" meant it might do, it might not. In other words, it might have done. Regarding the use of vasopressors, Professor Scholefield was referred to paragraph 16 of his report where he stated, *"In my opinion, the post-mortem findings would be consistent with a low flow rate in the small and large bowel, which might be a result of noradrenaline infusions.."*. Professor Schofield said that instead of "might" he should have said "probably". He accepted that he was aware of the difference in legal terms between "might" and "probable" when it comes to causation.

52. Professor Schofield accepted that an explanation for the mottling of the mesentery recorded on the post-mortem was that there was a blunt trauma at the time of the accident

caused by the seatbelt, but said that he didn't find it very credible. He accepted that on the claimant's case if Mrs Miller had 200 cm small bowel remaining, she wouldn't have been left with short bowel syndrome. Professor Schofield referred to Dr Power's report which said that on surgery on 6 October 2016, Mrs Miller already had low-grade sepsis. He said going in and resecting the bowel, and cutting back to a viable bowel, the potential for further contamination and further sepsis was significantly increased. Professor Schofield clarified that Mrs Miller would probably have needed three or four laparotomies and her abdomen would have been left open. Even on Professor Winslet's case namely two or three laparotomies, she probably wouldn't have survived. He said the more laparotomies that the patient must have from ITU, the greater the risk of them not surviving that illness.

*The intensive care evidence*

53. To a large extent, there was agreement between the Anaesthetists/Intensivists in their joint statement:

    (1) They both agreed that Mrs Miller's condition had she undergone surgery on 6 October 2016 was stable, but she was unwell and she was in a stable condition in the period from 6 October 2016 to overnight on 10 to 11 October 2016.

    (2) Regarding Mrs Miller's survivability, Dr Power's view is that had Mrs Miller under gone surgery on 6 October 2016 and if a right hemicolectomy and ileal resection with end ileostomy been performed, Mrs Miller would have been returned to the critical care unit, there would have been a transient period of increased oxygen requirements and noradrenaline dependency (septic shower) but, with the source of potential sepsis addressed, her condition would have stabilised and then continued to improve. Dr McCrirrick agrees with the important caveat that this was based on a single uncomplicated successful surgical intervention.

54. Dr Power was called by the claimant. He is a consultant in Anaesthesia and Critical Care Medicine at the Poole Hospital NHS Trust. He provides clinical management to the Critical Care Unit at the Trust. He was the lead clinician for critical care between 2001 and 2010. Dr Power agreed that Professor Winslet's evidence of an initial laparotomy with resection of the bowel, followed by a relook laparotomy 48 hours later was *"the wholly right thing to do"* from a critical care perspective and it didn't make a difference to the outcome whether there was more than one operation on 6 October 2016 and a relook on 8 October 2016. After the operation on 6 October 2016, Mrs Miller would have returned to the ICU with the potential source of the sepsis having been removed. He agreed with Professor Winslet's view that 100 cm of the distal ileum and a variable part of the ascending colon would have been resected. The act of handling the diseased bowel would very likely release a few toxics mediators, a so-called "septic shower", into the circulation. This was likely to have resulted in a brief period of inotrope dependency; an increase in oxygen requirements, but it would have been dealt with. Having removed the source of sepsis, there would have been a septic shower, a brief period of instability, as opposed to a sustained relentless feeding of the circulation with inflammatory mediators because they would have removed the source.

55. The crux of his and Dr McCririck's disagreement was the survivability after surgery. As a critical care doctor he would have approved the approach outlined by Professor Winslet, namely an initial laparotomy and resection of up to 100 cm of the small bowel; then it

would have been stapled; the abdomen would be left open; Mrs Miller would have been returned to surgery about 48 hours later and at that point ileostomy would have been attempted. He accepted that the assumption in his report was slightly different namely the return to theatre after 48 hours was just to make sure everything was okay and to close the abdomen. He said he couldn't second guess exactly what the surgeon would have found when he got in there. He accepted the claimant's case was now a resection of up to 100 cm of the small bowel on 6 October 2016 and then only on 8 October 2016 the attempt to fashion an ileostomy. In Dr Power's opinion, the claimant's new case would not have made a difference to Mrs Miller survivability because the definitive operation to remove source control would have been undertaken on 6 October 2016. Leaving the abdomen open and returning the patient to theatre 48 hours later was not going to have any additional adverse effect on the patient because she was already anaesthetised and ventilated and receiving critical care. It was simply a further look inside and a further opportunity to make sure that the bowel was healthy and that there was no residual contamination. He initially disagreed that leaving Mrs Miller's abdomen open after the first surgery made the prognosis much worse than that of a patient whose abdomen was closed, but then agreed by saying *"It stands to reason, yes."* After the resection on 6 October 2016, Mrs Miller would have returned to critical care with an abdomen still open and she would have required ventilatory support. She would have been, to a degree, immune suppressed. The handling of the bowel, in terms of the concept of a septic shower, was likely to have released toxic mediators but, in general, with the source of the sepsis removed, the systemic manifestations would be supportable and manageable. He said that both he and a gastrointestinal surgeon were both equally able to comment on the sepsis issue from their own perspectives.

56. There was no strong evidence at the time that Mrs Miller had developed ventilator associated pneumonia, but there was a risk of developing ventilator associated pneumonia. However, this could have been treated with appropriate antibiotics. The first surgery would have involved resection of the unhealthy bowel. By the second relook on 8 October 2016, a healthy bowel was being handled and therefore the risks of any septic shower or transient sepsis was much less because in his opinion on the second look one was dealing with healthy anatomy. Dr Power's opinion was that Mrs Miller would have survived the laparotomy on 6 October 2016, and having survived the laparotomy on 6 October, an additional relook and the bringing out of an ileostomy in a patient who had stabilised and no longer had a diseased bowel in situ would not have resulted in her mortality. He accepted that as a matter of logic and common sense, for Mrs Miller to go back for a second relook her chances of survival must have been reduced further, but he had not seen any evidence suggesting that scenario would have occurred.

57. Dr McCririck was called by the defendant. He is a consultant in Anaesthesia and Intensive Care at the Gloucester Royal Hospital. He retired in that post on 13 September 2021. He has said in the joint statement that had Mrs Miller had intra-abdominal pathology that was curable by a single, uncomplicated, successful surgical intervention, then on the balance of probabilities she would have survived. However, based on Professor Winslet's evidence the scenario proposed was entirely or completely different to the scenario he had based his response on. He was working on the assumption of a resection of a small piece of bowel, perhaps 20-30 cm long, a quick straightforward simple operation with abdominal closure, ileostomy formation and proper closure. On this scenario, on the balance of probabilities, Mrs Miller would have survived. However, Professor Winslet's scenario was completely different. We were now talking about a

more extensive operation with resection of a metre of bowel, followed by leaving the abdomen open for 48 hours, further ventilation, probably muscular paralysis, followed by further surgery, where an ileostomy may not have been formed and more bowel may or may not have been needed to be resected. During the operation the handling of the bowel and that length of ischaemic bowel would have involved a very significant release of toxins and infection into circulation. In his opinion, on the balance of probabilities, Mrs Miller would have been very unwell at that time. She would have gone back to ICU with her abdomen open, deeply sedated, fully ventilated and paralysed. She would have been at risk of developing ventilator associated pneumonia at this stage. She would have then gone back to the operating further for further surgery. In this scenario, mortality would have been 60% and survival was very unlikely.

58. Dr McCririck accepted Dr Power's opinion that on 6 October 2016 Mrs Miller was unwell but stable and she had not needed inotropes, noradrenaline since 5 October 2016 and that the lungs were not showing severe sepsis-induced injury and were capable of good gas exchange. Her lactate levels were normal at the time. Dr McCririck accepted that he didn't get the 20-30cm figure for the resection of the small bowel from anywhere. He said there was a huge difference from a physiological stress perspective in removing 30 cm of the bowel in one go in the abdomen, to removing a metre of ischaemic bowel and leaving the abdomen open. This would impact on survivability. Dr McCririck accepted that removing this section of ischaemic bowel at the first operation removed the source of infection, the source of sepsis because it was the ischaemic part of the bowel. But removing a metre of bowel was a major undertaking. Leaving the abdomen open was a poor prognostic indicator in its own right. Mrs Miller would have been at very great risk of ventilator associated pneumonia and sepsis, renal failure. Looking at the scenario as a whole, Dr McCririck said that the mortality was very high and significantly greater than 50%.

**Issues**

59. The principal issue regarding causation is whether, on the balance of probability, the claimant has established that, if Mrs Miller had had surgery on 6 October 2016 then she would have survived in the long term. In addressing that question, it is relevant to consider the following points:

    (a) The extent of the bowel ischaemia that would have been found on surgery on 6 October 2016 and whether an ileostomy could have been successfully constructed;

    (b) Professor Scholefield hypothesis that Mrs Miller had more extensive bowel ischaemia secondary to a "low flow state";

    (c) Whether the evidence about the further relook procedure would have tipped the balance and meant that Mrs Miller would probably have not survived.

**Legal principles**

60. This is a case which turns on its facts and my assessment of the expert evidence in particular. I recognise that in making my assessment of the evidence, I should not delegate the task of deciding the issues in this case to the experts The issues are for the court to decide taking account all of the evidence. In making my assessment of whether to

accept an expert's opinion, the court should take into account a variety of factors including, but not limited to: whether the evidence is tendered in good faith; whether the expert is "responsible", "competent" "and/or respectable"; and whether the opinion is reasonable and logical – see *Bolitho v City & Hackney Health Authority* (1998) AC 232.

**Discussion: Causation**

61. There is no obvious or easy answer to the causation question. It is impossible to know for certain what precisely would have been found had Mrs Miller had surgery on 6 October 2016 and whether, following treatment, she would have survived. What the experts, particularly the general surgeons and intensive care experts, have sought to do is to form their own view as to what would have been found, because of the ischaemia and whether Mrs Miller would have survived if she had received appropriate treatment. In reaching my conclusion on these issues, I have to make decisions as to which evidence to accept on a range of relevant issues.

62. I start with a number of general observations in relation to the experts.

63. As regards the radiologists, I found Professor Dawson to be a fair, balanced and measured witness who was careful not to step outside his area of expertise. In response to the question that it wasn't feasible if there had been a blunt trauma injury that this wouldn't have manifested itself radiologically by 27 September 2016, he said he couldn't answer that question definitively as a radiologist. It had been suggested that Professor Dawson had resiled on the position agreed at the time of the joint experts meeting that the 5 October 2016 CT scan indicated generalised bowel ischaemia. However, I accept his evidence regarding what he meant by the term "generalised", both in his supplemental statement and in his oral evidence, that he was referring to extensive ischaemia in the areas identified mainly in the mid and distal ileum, and not generalised to the whole bowel. I also note that Mr Furniss, for the defendant, in his closing written submissions did not pursue the suggestion that Professor Dawson had changed his mind from the joint statement. The fact that Professor Dawson is not a sub-specialist in gastro-intestinal radiology, like Dr Tolan is, in my view is of limited relevance since the radiology experts largely agree about what the relevant scans show.

64. Dr Tolan was plainly an experienced radiologist. However, the impression he gave when giving his oral evidence wasn't favourable. His answers to questions were lengthy and at times, he didn't answer the questions being put. He also appeared at times to take on the role of advocate in the case. For example, his response to the question about the conclusion in his report that the signs of pneumatosis in the distal ileum and right colon were present on the scans, matched the distribution of abnormalities that were found at post-mortem related to ischaemia. Further, having disagreed that on post-mortem no other abnormality was found elsewhere in either the small or the large bowel, he suggested additional abnormalities were found in the post-mortem report, namely the mesentery was mottled and the mucosa was extensively autolyzed. But these were new points that did not feature in his report or in the joint statement. In addition, Dr Tolan was keen to suggest to me that far more abnormality was likely to be found on surgery, which was outside his area of expertise. There are other aspects of his evidence to which I shall refer later in my judgment which had an adverse effect on my assessment of the general reliability of his evidence.

65. As to the general surgeons, Professor Winslet's evidence overall was careful, concise and addressed the relevant issues. He gave evidence about the need for a further relook procedure and the construction of an ileostomy at this stage, and the impression I formed was that he was doing his best to give a fair and balanced view. He also set out carefully and logically his opinion about the mechanism of ischaemia and why Professor Scholefield's case of a low flow hypothesis was flawed. On the other hand, Professor Scholefield evidence was unsatisfactory in a number of respects. He wrongly stated in his report that there was no pleaded mechanism of ischaemia, when this was clearly set out in the claimant's part 18 response which he had read, and he failed to consider the claimant's case about this in his report. He wrongly stated that the post-mortem report did not identify a mechanism for ischaemia, when it did namely pseudo-obstruction due to paralytic ileus and failed to address this in his report. Although it is accepted that imaging is highly relevant to the issue about the extent of the ischaemic bowel that would have been found at surgery on 6 October 2016, Professor Scholefield failed in his report to refer to imaging or to Dr Tolan's report at all. Significantly, he offered an opinion that the presence of intra-abdominal sepsis would have significantly increased on surgery and was relevant to mortality, which was a new point not raised in his report or the joint statement. Professor Scholefield's evidence was that because Mrs Miller was back on Noradrenaline and was being ventilated it would not have been feasible to undertake an ileostomy. However, the reason given in the joint statement for it not being possible to create a viable ileostomy was the presence of patchy ischemia of the small bowel. For all for these reasons, and the other aspects of his evidence which I shall refer to later in my judgment, I found Professor Scholefield to be an unsatisfactory expert witness.

66. Moving on to the intensive care experts, Dr Power's evidence was measured and he made appropriate concessions. He accepted that the prospects of survival were reduced if a second relook was required. As regards Dr McCrirrick, my overall impression of his evidence was not favourable. His initial assumption of a resection of the small bowel in the order of 20-30cm was a figure that he didn't get from anyone specifically, and wasn't based on the expert reports on both sides. If the size of the bowel resected was so important to mortality, I am surprised that Dr McCrirrick failed to mention this in his report or in the joint statement. He was evasive and failed to answer the question about the benefits of removing the ischaemic part of the bowel, the source of sepsis, and failed to explain why this meant that mortality was still probable. He said that Mrs Miller was at high risk of developing ventilator associated pneumonia but failed to give any or any adequate reasons for this view.

*Extent of bowel ischaemia found at surgery on 6 October 2016*

67. Before considering the detailed evidence, I make the following general observations regarding causation, which do not appear to be in dispute or are at least are not significantly in dispute.

68. First, had Mrs Miller undergone surgery on 6 October 2016 the ischaemic part of the bowel would have been removed, five days before the fatal perforation. Therefore, that part of the bowel which caused her death would not have been present.

69. Second, during most of the period from 6 October 2016 to overnight on 10 to 11 October 2016, despite her ischaemic bowel, Mrs Miller's condition remained relatively stable. Her circulation was unsupported by noradrenaline, as confirmed by the intensive care experts

joint statement, in particular paragraph 3 which states *"The chief point to be made is that on 5 October noradrenaline was discontinued; and thereafter until the acute deterioration on 11 circulation did not require support with noradrenaline. This reflects the period of stability referred to in the response to 2. above."* Further, Mrs Miller's lactate levels were normal, which is agreed by the defendant. She also had a tracheostomy performed on 9 October 2016 to prepare for medical ventilation and therefore there was no concern about pneumonia.

70. Third, the key evidence to consider regarding the extent of the bowel ischaemia that would have been found on surgery on 6 October 2016 is the post-mortem report and the CT scans, in particular the CT scan on 5 October 2016. The abnormalities found on post-mortem were limited to the loops within the right iliac fossa which was mottled with friable walls (the small bowel), the caecum was friable and haemorrhagic (the large bowel) and the mesentery was mottled. At the post-mortem examination, the general surgeons agree in the joint statement that the bowel ischaemia was reported as localised to the distal small bowel and caecum.

71. I reject the defendant's submission that the post-mortem report is of limited use and it is not reasonable to use the post-mortem examination to determine the issues in this case. Dr Tolan, the defendant's own radiology expert, agreed in evidence that *"the information, the evidence that is going to help the judge is the imaging and the findings post-mortem."* Further, Dr Tolan concluded in his report that the CT scan on 5 October 2016 shows "*that signs of pneumatosis in the distal ileum and right colon were present on the scans, matching the distribution of abnormalities that were found at post-mortem related ischaemia."* Therefore, I find that the post-mortem findings are consistent with the CT imaging of the scan on the 5 October 2016.

72. As regards the length of the bowel affected by ischaemia, the radiologists agree in their joint statement that *"the changes affect the distal third of the small bowel as well as the caecum and the proximal ascending colon".* Dr Tolan estimated in his report that the pneumatosis in the distal small bowel affected was up to 40cm to 50cm in total. He accepted that the part of the small bowel showing poor enhancement did not extend beyond the segment showing pneumatosis namely 40cm to 50cm, and he did not identify poor enhancement in any other parts of the small bowel or the large bowel from the scan on 5 October 2016. Professor Winslet said that 100 cm of the small bowel would have been resected on 6 October 2016. Therefore, I find at most 100 cm of the small bowel would have been affected by ischaemia on surgery on 6 October 2016. That would have left approximately 150-200cm of the small bowel following resection.

73. The defendant contends that more of the small bowel would have been seen to have been affected by ischaemia on surgery on 6 October 2016, based on (i) ischaemia may be present where there is apparently normal/good enhancement on the scan, and (ii) Dr Tolan's evidence. As regards the first point, although the radiologists agree in the joint statement that ischaemia may be present even where there is apparently normal enhancement, I accept the evidence of Professor Dawson that this is generally a reassuring sign and indicates that ischaemia was probably not present elsewhere. Regarding Dr Tolan's evidence that radiology can fail to identify the full extent of ischaemia found at surgery, Dr Tolan is not a surgeon and was straying outside his area of expertise on this matter. Further, he did not say that this was probably what had happened here. He said, *"…and again this has already been elucidated before, but this is one of the*

*limitations of CT and the discrepancy that you can find between a scan observation, which appears to show a relatively limited abnormality, and then when the patient comes to surgery, there will be far more extensive abnormality had been actually appreciated."* Dr Tolan was not asked to confirm whether this is probably what had happened in Mrs Miller's case. He also said in evidence that the scan on 5 October 2016 showed that the whole of the small bowel was dilated. However, this is inconsistent with his report where he said the scan showed the affected area of the small bowel was only up to 40-50cm in total. Dr Tolan did not suggest in his report that the whole of the small bowel was dilated.

*Professor Scholefield's "low flow state" hypothesis*

74. This brings me to the defendant's case that Mrs Miller had more extensive bowel ischaemia in the small and large bowel secondary to a "low flow state" resulting from the use of vasopressors, namely noradrenaline, and bouts of atrial fibrillation (resulting in a further reduction in cardiac input). This hypothesis is based on Professor Scholefield evidence that low blood flow in the gut secondary to the prolonged use of vasopressors was the cause of Mrs Miller's perforation. I reject Professor Scholefield "low flow state" hypothesis.

75. First, I have already referred to the deficiencies in Professor Scholefield's evidence earlier in my judgment. Second, Professor Scholefield accepted that his hypothesis was based on (i) the presence of Noradrenaline which *might* result in this condition, and (ii) "plus or minus" bouts of atrial fibrillation resulting in a further reduction of cardiac output. Regarding the first point, Professor Scholefield used the term "might" not "likely" or "probable" in his report. As an experienced expert witness, he accepted that he was aware of the difference in legal terms between "might" and "probably". As regards the second point, Professor Scholefield referred to "plus or minus" bouts of atrial fibrillation and accepted that "plus or minus" means maybe or maybe not. Third, if Mrs Miller was suffering from poor gut perfusion caused by low blood flow, I accept Professor Winslet's evidence that one would have expected much wider ischaemia in the descending colon which is most vulnerable to hypoperfusion especially in the "watershed" areas of the splenic flexure and recto-sigmoid junction. But there was no evidence of abnormality in this part of the bowel at post-mortem or on imaging. Fourth, Professor Scholefield's "low flow state" hypothesis is inconsistent with the good enhancement on the CT scan shown on 29 September 2016 and 5 October 2016, which demonstrate good blood flow. The radiology experts agree that the CT scan on 29 September 2016 shows that the large and small bowel enhanced normally, and Dr Tolan agreed in his evidence that on the 5 October 2016 scan he didn't identify any poor enhancement in the small and large bowel outside the affected areas. Fifth, I accept Dr Power's evidence that the Noradrenaline given over the course of Mrs Miller's admission was generally moderate and she was never highly Noradrenaline dependent. Sixth, Noradrenaline was discontinued from 5 October 2016 and Mrs Miller's condition was unsupported thereafter until 11 October 2016, and her lactose levels were normal from 5 October 2060 until 11 October 2016. In my view, these matters are inconsistent with the hypothesis that Mrs Miller had more extensive bowel ischaemia with toxins leaking from a deteriorating bowel wall.

76. Since I accept the claimant's case on the balance of probabilities regarding the limited extent of the ischaemic bowel that would have been found on surgery on 6 October 2016 and reject Professor Scholefield "low flow state" hypothesis suggestive of wider ischaemia in the other areas of the bowel, an ileostomy would on the balance of

probabilities have successfully been achieved. Accordingly, it is unnecessary for me to make a finding about the possible cause of the bowel ischaemia which led to perforation.

*Would the further relook procedure have tipped the balance into mortality?*

77. The only question is whether Professor Winslet's evidence about the relook procedure would have tipped the balance and meant that Mrs Miller would probably not have survived.

78. Professor Winslet's evidence is that (i) at surgery on 6 October 2016 100cm of the small bowel would have been resected, with the ends stapled and abdomen left open, and a return to the ICU (ii) 48 hours later Mrs Miller would have returned to theatre for a relook where the surgeon would have reviewed the content of the bowel to ensure there was no further ischaemia by cutting the staple line and allowing the bowel to bleed again. Then, an ileostomy would probably have been constructed. I have already found that an ileostomy would have been successfully achieved given the limited extent of the ischaemia found at surgery on 6 October 2016.

79. I do not accept the defendant's case, that even on Professor Winslet's view that Mrs Miller would have only needed two surgeries, namely the laparotomy with resection on 6 October 2016 followed 48 hours later by one further relook procedure, that Mrs Miller would not have survived.

80. First, the relook procedure on 8 October 2006 was always contemplated by Professor Winslet and Dr Power in their respective reports and joint statements. Therefore, it is not new evidence.

81. Second, the intensive care experts agree that Mrs Miller was unwell, but in a stable condition from 6 October 2016 until overnight on 10 to 11 October 2016, which is during the period she would have undergone the laparotomy and subsequent relook.

82. Third, I accept Dr Power's evidence that a further relook procedure would not have made the difference between survival and death. The ischaemic bowel would have been removed at the operation on 6 October 2016, which Dr Powers described as the *"definitive operation to remove source control"*. Therefore, the source of the sepsis would have been removed. Dr McCririck accepted, having eventually answered the question that was put to him, that the source of the infection/sepsis would have been removed at the first operation. The septic shower only related to the operation on 6 October 2016 and therefore the risk of sepsis was not increased by the need for a relook on 8 October 2016 since the surgeons would have been handling a relatively healthy bowel.

83. Fourth, Professor Scholefield's evidence that Mrs Miller would not have survived is based on sepsis taking hold. I reject Professor Scholefield's evidence. This was a new point, not raised before in his report or in the joint statement. That is surprising given Professor Scholefield was specifically asked to deal with the survivability question in his report. Further, his oral evidence was limited to only *"..the potential for further contamination of further sepsis was significantly increased"* not that sepsis was likely or probably to have taken hold.

84. That leaves Dr McCririck's evidence regarding survivability. I reject his evidence on this issue. I have already referred earlier in my judgment about my concerns about his evidence. Dr McCririck's evidence that Mrs Miller would have had systemic sepsis ignores the fact that the ischaemic bowel would have been removed at surgery on 6 October 2016, and therefore the source of the sepsis would have been removed and the surgeons would have been dealing with a relatively healthy bowel on 8 October 2016. Dr McCririck's pessimistic view regarding survivability was based on (i) the increased amount of the small bowel that would have been resected at surgery on 6 October 2016, and (ii) the need for a relook on 8 October 2016. As regards the resection amount increasing from 30cm (Dr McCririck's assumed view) to 100cm (Professor Winslet's view which Professor Scholefield didn't disagree), the general surgeons did not suggest that this was going to tip the balance in favour of mortality. Further, Dr McCririck gave no clear reasons why resecting a larger section of the small bowel would have made a difference to survivability, Regarding the second point, I reject the view that one further relook procedure would have tipped the balance in favour of mortality. The source of the sepsis would have been removed at the main surgery on 6 October 2016. I also accept Dr Power's evidence that on the relook a healthy bowel would have been handled and the risk of any septic shower was much less on the relook because one would be dealing with a healthy bowel. As regards Dr McCririck's view that Mrs Miller would have developed ventilator associated pneumonia, he gave no reasons for his opinion.

85. For these reasons, I find that Mrs Miller would have survived in the long term had she undergone surgery on 6 October 2016.

*Condition and prognosis*

86. Regarding the bowel condition, the general surgeons agree that if an ileostomy had been performed which didn't become ischaemic, Mrs Miller would have required reversal surgery at a later date and Professor Winslet states that this restoration would have been successful, but Mrs Miller would have suffered bowel frequency, urgency and loose stools. I accept Professor Winslet's evidence. I also find that Mrs Miller would not have been left with short bowel syndrome. On the basis that 100 cm of the small bowel would have been resected and the small bowel is approximately 250cm to 300cm long, this would have left between 150cm to 200cm of the small bowel remaining. Professor Scholefield's evidence is that the definition of short bowel syndrome is between 130 cm to 150 cm.

87. As regards Mrs Miller's orthopaedic injuries, the orthopaedic experts are largely agreed. Mrs Miller would have remained in hospital for approximately 12 weeks namely returning home around mid-January 2017, and it would have taken approximately 36 months to complete her orthopaedic rehabilitation. Having accepted the claimant's case on causation, it is agreed that there was no risk of amputation to the lower right limb. Nonetheless, I find that Mrs Miller would have been significantly disabled. She would have had very limited mobility, would not have been able to lift or carry significant loads, would have difficulty bending and lifting, would have only been able to do light domestic cleaning and meal preparation from a seated position. In addition, she would have suffered bowel frequency, urgency and loose stools,

**Quantum**

88. The parties agreed the following heads of damage (i) general damages for the period 6 to 11 October 2016 at £2,000 plus interest (ii) a statutory bereavement award of £12,980 (iii) funeral expenses, namely the cost of funeral of £4,469 and the cost of reception/wake after the funeral at £1,706.65. Since I have found for the claimant on causation, I allow a *Regan v Williamson* award for the loss of the special care and attention provided by Mrs Miller to the claimant which has been agreed in the sum of £4,000. The claim for loss of dependency on gifts is also agreed at £100 per annum each for the claimant and Mr Porter to trial and for the remainder of their lives.

89. The dispute is the extent of the past and future loss of services and financial dependency claims.

*Loss of services dependency claim*

90. There is a loss of services claim (i) by the claimant for loss of services Mrs Miller would have provided for his benefit, and (ii) by Mr Porter for loss of services which Mrs Miller would have provided for his benefit.

91. Dealing with Mr Porter's claim, although Mrs Miller would have survived I find that Mr Porter would have gone into residential care in any event. First, the claimant accepted that even before Mrs Miller's accident on 16 September 2016, the couple were already under 'severe carer strain' in looking after Mr Porter. Second, he accepted that after the accident he was unable to manage on his own without Mrs Miller. Third, the claimant accepted that he would have had exactly the same difficulties coping with Mr Porter's care as in fact he did have, but now Mrs Miller would have been significantly disabled. He said he didn't know whether he could have coped looking after Mr Porter in these circumstances. Fourth, I find that Mrs Miller would have had very limited capacity given her disabilities to look after Mr Porter had she survived. She would have been significantly disabled, for the reasons set out above. Notwithstanding her and the claimant's wishes that Mr Porter be kept at home, I find that he would have gone into residential care in any event.

92. Given Mr Porter would have moved into a residential home in any event, the type and extent of services provided to Mr Porter would have been significantly reduced. I accept the legal principle from the case of *Zambarda v Shipbreaking (Queensborough) Ltd* [2013] EWHC 2263 (QB) that loss of services is not confined to physical assistance, but also to providing necessary companionship, support and comfort. That principle was not challenged by Mr Furness in his closing submission. I find that Mrs Miller's services would have been limited to attending Mr Porter at his residential home and providing companionship, support and comfort only. There is no precise way of assessing the true value of the services Mrs Miller would have provided to Mr Porter. In the circumstances, I assess it at £2,500.

93. As regards the claimant's claim for loss of services, Mr Hand, for the claimant, accepts because of her injuries, Mrs Miller would only have been able to resume providing the services in Year 3 post accident and would have been restricted in what she could have done thereafter. The claim is that Mrs Miller would have provided (i) 10 hours per week in Year 3 (ii) 15 hours per week for Year 4 and onwards to trial and continuing in the

future to the end of the claimant's life. The defendant contends for (i) 10 hours per week for Year 3 to trial and (ii) £75,000 for future loss adopting a broad-brush approach.

94. Regarding past loss of services, the orthopaedic experts agree that Mrs Miller would have been limited to light cleaning, meal preparation from a seated position and online shopping or shopping in a supervisory capacity. The claimant would have helped Mrs Miller with the cleaning chores. In the circumstances, I find that Mrs Miller would have provided 10 hours per week for Year 3 onwards to trial. That, in my view, realistically represents the level of Mrs Miller's ability to provide services to the claimant. The hourly rate of £7.90 has been agreed and I see no reason to depart from the conventional 25% for gratuitous provision claimed by the claimant, and no reason was given by Mr Furniss, for the defendant.

95. As regards future loss of services, since the orthopaedic experts have been able to reach an agreed view regarding Mrs Miller's residual ability to provide services, I find that the usual multiplier/multiple account approach should apply. I also find that Mrs Miller would have provided 10 hours per week services to the end of her life which amounts to £3,081 per annum, after a 25% discount for gratuitous provision.

*Financial dependency claim*

96. Regarding past loss of financial dependency, given my finding that Mr Porter would have gone into residential care in any event, the loss of Mrs Miller's carer's allowance for Year 4 would not have happened. However, it is agreed that she would still have been entitled to receive Personal Independence Payments (PIP).

97. The main factual issues I need to determine are: (a) would Mrs Miller have returned to part-time employment after a period of rehabilitation; the defendant's case is that she would not, and (b) would the claimant have returned to part-time work (the claimant's case) or full-time work (the defendant's case).

98. I find that Mrs Miller would not have returned to part-time work. First, she would have been in her late 50s with no previous office experience, no qualifications and she would have been significantly disabled. The claimant accepted that he did not know how Mrs Miller would have found, travelled to and performed a paid job. Second, the claimant's pleaded case in the updated schedule of loss is that Mrs Miller would have been able to secure an office-based role on a part-time basis following a 12-month period of training. Save for the suggestion of an 'employment centre' 6 miles away in Lutterworth and Mrs Miller's ability to drive an adapted car, there is no evidence before me of the availability of suitable work and that Mrs Miller would have been able to secure it. This part of the claimant's claim is, therefore, at best speculative.

99. I also find that the claimant would have returned to work full-time. First, his carer's income from the local authority would have been lost since Mr Porter would have gone into residential care in any event. Second, Mrs Miller would not have been working part-time and therefore the claimant would have needed to work full-time. Third, in the past he had worked full-time as a plumbing and heating engineer for 22 years and had his own business. He had also worked shifts in a warehouse. I accept the defendant's case that the claimant would have earned approximately £18,000 per annum from full-time work. The figure itself was not challenged by the claimant.

100. Given Mr Porter would have gone into residential care in any event and the loss of Mrs Miller's income from the carer's allowance, the fact that she would not have returned to part-time work although she would have received Universal Credit and PIP, and the claimant would have returned to work full-time earning approximately £18,000, I find that there would have been no past loss of financial dependency on Mrs Miller or future loss until the claimant retired himself.

101. As regards future loss of financial dependency, I have found that Mrs Miller would not have returned to part-time work and the claimant would have returned to work full-time. I accept the claimant's case that the claimant's income after his retirement would have been approximately £16,600 per annum, including a pension from his warehouse work from 2022 to 2034 of approximately £3,000 net per annum. The parties agree that Mrs Miller would have continued to receive PIP on reaching retirement age and therefore her income would have been £15,451 (£9,110 state pension plus £6,341 PIP). On the defendant's calculation (it is unclear whether it is accepted by the claimant) this would give a loss of future financial dependency of £84,626:

£16,600 + £15,451 = £32,501

£32,051 x 66.66% = £21,365

£21,365 - £16,600 = £4,765 (annual dependency)

£4,765 x 17.76 = £84,626.

102. Based on my findings, I will leave the calculations to be prepared/confirmed by Counsel. If there remains a dispute, I will list this matter for further hearing by CVP with an estimate of one day to deal with quantum with written submissions on any remaining disputed issues to be served before the hearing.