Indexed as:
MacLean v. Wallace

Between
Roderick MacLean, Rosella I. MacLean and Colin B. MacLean, plaintiffs, and
M. Christopher Wallace, Karel G. Ter Brugge, Charles J.E. Cruise, David J. Hoff, Robert A. Willinsky and the Toronto Hospital, Western Division, defendants

[1999] O.J. No. 3220

Docket No. 93-CU-072555

Ontario Superior Court of Justice

Dilks J.

Heard: October 5-9, 13-16 and 19-22, 1998.
Judgment: September 2, 1999.

(195 paras.)

Medicine -- Liability of practitioners -- Negligence or fault -- Failure to diagnose an illness -- Angiogram -- Damage awards -- Injury and death -- Body injuries -- Back -- Spinal cord injury resulting in incomplete paraplegia -- General damage awards -- Pain and suffering, loss of amenities and other nonpecuniary damages -- Loss of prospective earnings -- Cost of future care.

Action by MacLean and his wife and son for damages arising out of the alleged negligence of the defendant doctors. MacLean was referred to the defendant Ter Brugge for a spinal angiogram, which was carried out by the defendants Willinsky and Hoff. MacLean alleged that Ter Brugge breach his fiduciary duty by failing to advise him that Willinsky and Hoff would be performing a procedure. He alleged that Willinsky and Hoff carried out the procedure without his consent, and to locate a fistula. A fistula was later located in a follow-up angiogram carried out at the Mayo Clinic and appropriate treatment was carried out. It was not disputed that delay in treatment would result in a more severe disability. MacLean was now an incomplete paraplegic largely confined to a wheelchair. He was able to work with some modifications, although his energy level and stamina were lessened by the chronic pain. He was at risk for a variety of problems, such as urinary tract

infections, and his disability was permanent.

HELD: Action dismissed against Ter Brugge and Hoff but allowed against. Willinsky. Ter Brugge's evidence that he specifically advised MacLean of Willinsky and Hoff's involvement in the procedure and that MacLean consented was accepted. The consent executed by MacLean authorized other medical personnel in Ter Brugge's discretion to assist him or to perform diagnostic procedures themselves. Willinsky and Hoff met the standard of care to be expected in carrying out the angiogram. The fistula found on the second angiogram carried out by the Mayo clinic could only be found by way of collateral flow. It was elusive according to the expert witnesses. It was reasonable for Willinsky and Hoff to conclude that no fistula was present. However, Willinsky was negligent in failing to make specific recommendations as to further treatment to MacLean's treating physicians in Regina. Willinsky's failure to advise that the test might not have been exhaustive fell below the standard of care and caused MacLean's condition, which continued to deteriorate. MaClean's non-pecuniary damages were assessed at $200,000 and then reduced by 10 per cent to account for the fact that some of his condition would have been present even if proper recommendations had been made by Willinsky. His past income loss was calculated at $256,889. His anticipated retirement age was found to be 67. His loss of capacity was estimated to be 50 per cent of his pre-injury ability to earn income, based on his inability to renew one of his two contracts, due to his disability. He was awarded an amount for home maintenance, reduced by 25 per cent because he would likely have had resort to outside help in any event given his pre-existing state and the fact that his wife helped out and would continue to do so.

Similarly, a 15 per cent reduction was applied to his claim for housekeeping services. He was also entitled to claim the full cost of medical devices, regardless of the fact that a portion of the expense was funded through the Saskatchewan Aids to Independent Living Programme. Funding under the Programme was not mandatory and there was no guarantee that it would continue into the future. MacLean's wife was awarded $45,000 for her Family Law Act claim and $10,000 in lost wages. She was required to assume many of the tasks for which her husband was able to carry out in the past. There was no evidentiary basis for an award to MacLean's son who resided out of province and saw MacLean once a year.

Statutes, Regulations and Rules Cited:

Ontario Evidence Act, s. 35.

Ontario Rules of Civil Procedure, Rule 36.

Counsel:

Robert Roth and Andreas G. Seibert, for the plaintiffs.
Mary M. Thomson and Frank McLaughlin, for the defendants.

DILKS J.:--

I. INTRODUCTION

1 The plaintiff, Roderick MacLean, an incomplete paraplegic, brings this action against the defendants alleging, in the case of the defendant doctors (excepting Dr. ter Brugge) that their negligence has caused or substantially contributed to his present medical condition.

2 The action as against the defendant hospital and as against Doctors Wallace and Cruise was dismissed earlier.

3 The action against Doctors Willinsky and Hoff is also framed in battery, based on the allegation that they performed a diagnostic procedure without Mr. MacLean's consent. The action against Dr. ter Brugge is framed in breach of fiduciary duty in failing to inform Mr. MacLean that it would be Doctors Willinsky and Hoff who would be performing the procedure and not Dr. ter Brugge.

4 In brief, the plaintiff was referred in November of 1992 to Dr. ter Brugge for a spinal angiogram to locate a suspected arterial venous fistula, which was thought to be having serious and deleterious effect on Mr. MacLean's physical health. The procedure was performed in Toronto by associates of Dr. ter Brugge, namely Doctors Willinsky and Hoff, but neither it nor the follow-up cranial angiogram performed by them the next day revealed the presence of any such fistula.

5 Accordingly, Mr. MacLean returned to his home in Regina and to the care of his treating physicians. His condition continued to deteriorate, dramatically so in January 1993. Further tests seemed to confirm the original diagnosis of an AVF despite the results of the Toronto angiogram. A repeat spinal angiogram was performed at the Mayo Clinic in Rochester, Minnesota in February 1993, and a fistula was located and subsequently repaired, but by that time Mr. MacLean's condition was sufficiently advanced that the surgery could only hope to arrest further development of the disease.

II. BACKGROUND

6 Roderick MacLean was born on February 16, 1937. Following his ordination as a United Church minister in 1964, and six years of ministering to two parishes, he became a Chaplain in the Canadian Armed Forces in 1970, where he remained until 1983, leaving with the rank of Major. From 1983 to 1986 Mr. MacLean pursued a private practice in Halifax as a counsellor.

7 In 1979 the MacLeans were married. Following Irene MacLean's graduation from law school in 1988, they moved to Regina, Saskatchewan, where she articled and later joined her brother's law firm.

8 Following the couple's move to Regina, Mr. MacLean accepted the position of Executive Director of the First Nation Treatment Centre on the James Smith Reserve. In May 1990 he established a business as a human resources consultant, contracting with Health & Welfare Canada to provide consulting services to First Nation Indian bands.

9 Up to the spring of 1992 he had enjoyed good health. Ten years previously he had experienced a bout of low back pain, which resolved after six months of treatment. In the several years prior to the spring of 1992 he had experienced a few intermittent, isolated episodes of leg buckling. He had also experienced an inability to achieve a full erection.

10 He had been very active in his work and recreational pursuits. He had never required hospitalization, was not on any medications, and had not been seen by a doctor for many years.

11 In May 1992 he began to experience numbness in his lower back and hips as well as a tingling sensation down his left leg. In August he consulted his family physician, Dr. Orest Gulka, who was the husband of Mrs. MacLean's sister.

12 Dr. Gulka referred Mr. MacLean to a neurologist, Dr. Jeff Donat, who saw him on September 4, 1992.

13 Dr. Donat suspected that Mr. MacLean had a disease of the spinal cord, possibly a benign tumour, and arranged for him to undergo a myelogram.

14 The myelogram was performed at the Royal University Hospital in Saskatoon on September 9, 1992. Further arrangements were made for magnetic resonance imaging (MRI), which was performed on September 29, 1992. That study, and the myelogram, were interpreted by Dr. Donat and Dr. Tchang, a neuroradiologist, to be consistent with an intradural vascular malformation involving the posterior thoracic cord. In Dr. Donat's opinion, these studies strongly suggested an arterial venous malformation (AVM) or spinal dural fistula (SDAVF) as the cause of the symptoms.

15 This condition results in a direct connection between the artery and the vein, bypassing the capillary beds, resulting in an increase of pressure in the veins, stagnation of blood in the capillary bed, and disturbance to the normal chemistry of the tissues of the spinal cord in that area.

16 When an AVF is present, it disturbs the normal metabolism of tissue in the spinal cord. This tissue has a very high demand for oxygen and nutrients. If it is deprived of either it becomes damaged. This slowly developing process involves the gradual death of nerve cells to be replaced by scar tissue. Treatment takes the form of surgical removal of the abnormality, or embolization to block the fistula. If treatment is provided at an early stage of the neurological deficit, when the disability is mild, the outcome is very good. If, on the other hand, treatment is delayed, the damage to the spinal cord may lead to paralysis of the lower parts of the body. The longer the delay, the more severe the disability.

17 As the treatment of this condition is surgical, Dr. Donat referred Mr. MacLean to Dr. Robert W. Griebel, a neurosurgeon. Dr. Griebel examined Mr. MacLean, reviewed the films, and concurred that his condition was most likely due to a dural fistula or an AVM. Dr. Griebel agreed to make arrangements for Mr. MacLean to have a spinal angiogram performed. As such procedures were not available in Saskatchewan, he contacted Dr. ter Brugge, a prominent neuroradiologist practicing at the Toronto Hospital (Western Division).

18 An MRI does not determine where the SDAVF is situated. The fistula can be located anywhere along the spine, from the skull to the sacrum. Angiography is the procedure by which the fistula is identified for treatment. The procedure requires the neuroradiologist to search for all the arteries off the aorta that feed the spinal cord, since any one of them could be the site of the fistula.

19 Following the review of the Saskatchewan myelograms and MRI, Dr. ter Brugge agreed to accept Mr. MacLean for the purpose of performing an angiogram. Mr. MacLean was scheduled to be admitted on November 16, 1992 with the spinal angiogram to take place the following day.

20 By the time of his arrival in Toronto Mr. MacLean's neurological deficit remained mild. He was walking without support and his strength was maintained.

21 Dr. ter Brugge had visited Mr. MacLean in his hospital room at about 5:00 p.m. on November 16 the date of his admission. At that time Dr. ter Brugge took a history and obtained Mr. MacLean's written consent for the spinal angiogram.

22 Pursuant to the weekly schedule for the hospital's neuroradiology team, Dr. Willinsky, assisted by Dr. Hoff, performed the spinal angiogram in the afternoon of November 17. Dr. ter Brugge was not present nor scheduled to be, as he was at that time participating in a lectureship symposium at the University of Toronto.

23 The spinal angiogram failed to demonstrate any fistula, and Dr. Willinsky so informed Mrs. MacLean. He told her that they would do a follow-up cranial angiogram on November 19 but that they really did not expect to find anything as a result of that procedure.

24 Following the cranial angiogram, which was also negative, Mr. MacLean was discharged. He and his wife returned then to Saskatchewan.

25 Dr. Donat was perplexed and bewildered to learn from his patient that his diagnosis had not been borne out by the results of the Toronto procedures. Although Dr. Willinsky had reported to the referring physician, Dr. Griebel, Dr. Donat was concerned enough to call Doctor Willinsky who confirmed the negative result and who speculated that perhaps the fistula had spontaneously thrombosed on its own accord. On the basis that his patient's condition was not caused by an AVF, Dr. Donat proceeded to search about for other possible causes for Mr. MacLean's condition.

26 By January 1993 Mr. MacLean's symptoms had progressed. He saw Dr. Donat again on

January 11, 1993. The progression of the disease was accelerating. He had lost the sense of where his foot was and he had to look down to know where it was. His bladder problems had increased. He was having pain in his back which was becoming troublesome. He had impairment of vibratory sensation and joint position strength in his feet, and his leg was clumsy. He was unsteady on his feet. He was admitted to the Royal University Hospital with posterior colon dysfunction, the cause of which was yet to be diagnosed.

27 Dr. Donat arranged a repeat MRI. The interpretation was as follows:

> Correlating with the September, 1992 myelogram and CT, cord enlargement is definite. The network on its dorsal surface in each of these modalities is very reminiscent of vessels. However this is contradicted by the apparently normal spinal angiogram in Toronto. A definite diagnosis is not possible but it is still strongly suggestive of vascular anomaly causing swelling of the cord or an unusual neoplasm involving the entire thoracic cord.

28 The MRI seemed to confirm the original diagnosis despite the results of the Toronto angiogram to the contrary. This prompted Dr. Donat to obtain a second opinion. He wrote to the Mayo Clinic in Rochester, Minnesota, where he had trained, sending them a complete set of relevant records, including the myelographic and MRI reports and the angiogram films.

29 Dr. Donat received a responding letter from Dr. Nichols, a neuroradiologist, dated January 29, 1993. Dr. Nichols expressed his opinion, following his review of the Toronto angiograms, as follows:

> The patient's history as you described it and his myelogram and MRI findings are highly suggestive of a spinal dural AV fistula. Both examinations demonstrate coiled vessels along the posterior surface of the thoracic spinal cord and the MRI demonstrates increased T-2 signal in the lower thoracic spine and conus consistent with a congestive myelopathy. The films you sent from the angiographic examination do not demonstrate a spinal dural AV fistula but I do not feel comfortable attributing this to thrombosis or the Foix-Alajouanine syndrome for several reasons. Several key vessels were not included in the examination ... any one of these vessels could be supplying the vascular malformation.

30 Mr. MacLean was admitted to the Mayo Clinic, and a spinal angiogram was performed on February 15, 1993, which was continued and completed on February 17. This procedure demonstrated a fistula in the nerve root sleeve just medial to the left T-3 pedicle, fed by a branch at T-2 on the left arising from the supreme intercostal artery. Surgery obliterated the fistula on February 18, 1993.

III. THE CLAIM IN BATTERY AGAINST DRS. WILLINSKY AND HOFF,

AND THE CLAIM AGAINST DR. TER BRUGGE FOR BREACH OF FIDUCIARY DUTY

31 Both claims depend on a finding that Mr. MacLean did not consent to have the spinal angiogram performed by Doctors Willinsky and Hoff, and that Dr. ter Brugge breached his fiduciary duty to his patient by failing to inform Mr. MacLean that Doctors Willinsky and Hoff, and not Dr. ter Brugge, would be performing the procedure.

32 Because there arise issues of credibility and reliability, it is important to reflect that as observers we often see and hear things quite differently. Burdened as we are with human frailties, we often perceive that which we wish or choose to perceive, and sometimes that which we feel we should perceive.

33 The passage of time serves only to compound the problem. Whatever may be our powers of observation, some of us possess excellent memories while others of us do not. Moreover, most of us have selective memories, that is we are more apt better to recall those things which at the time of observation seemed significant, and are more likely to forget the rest. As time passes most of us tend to retain pleasant, favourable memories in preference to those that are unpleasant or unfavourable.

34 And so it is with witnesses. Very, very few witnesses actually unconsciously lie under oath. Rather they try to tell the truth, but the truth as they perceive it to be. Consciously or unconsciously, witnesses tend to identify with the party calling them, particularly if they are closely associated with that party by blood or marriage or close friendship, or commonality of interest. There is a natural and almost inevitable desire to favour the party in question.

35 They will therefore gradually sublimate unpleasant or unhelpful events to the point where they become convinced that such events happened in some other way, or did not happen at all. Similarly, they are often easily led to agree even that events they did not observe must nevertheless have taken place, to the point where they have convinced themselves that those events really did in fact happen and that they observed those events take place.

36 Such persons are convinced that their testimony is both truthful and accurate. That conviction tends in turn to make them convincing witnesses when they testify, so that in order to arrive at the truth it is always helpful for the trier of fact to assess the reasonableness of their evidence in the context of the surrounding circumstances.

1. The Consent

37 The wording of the written consent (Exhibit 2, Tab 5) which Dr. ter Brugge obtained from Mr. MacLean on the eve of the spinal angiogram is as follows:

> 1. I authorize Dr. ter Brugge (attending physician) and such other medical

personnel as he/she in his/her discretion select or approve of to act or assist him/her under his/her supervision and direction, to perform the following diagnostic, operative or treatment procedure, with limitations as indicated: Spinal angiogram.

2. I also consent to such additional or alternative diagnostic, operative or treatment procedures as in the opinion of the medical staff performing the procedure mentioned above are considered incidental to, or immediately necessary and vital to the health and life of the patient.
3. I also consent to the administration of general or other anesthetics for any of these purposes.
4. The nature of the diagnostic, operative or treatment procedure, as well as the risks involved have been explained to me by Dr. ter Brugge (informing physician) and I understand them. He/she has also answered all of my questions regarding the procedure in question.
5. I agree to the retention by the hospital (for the purposes of diagnosis) or the disposal in accordance with the accustomed practice, of any material that may be removed during the diagnosis, operative or treatment procedure.

38 Dr. ter Brugge testified that he went over the consent form carefully with Mr. MacLean and that he explained fully and carefully the nature and risks of the procedure. Mr. MacLean admits that the signature on the form is his, and does not deny that the contents and risks were explained to him; he says that he simply has no recollection at all of any such explanation or even of having signed the consent. Under the circumstances, I have no trouble accepting Dr. ter Brugge's evidence on the point and of finding that matters unfolded as he reported them to do.

39 Although it is clear from paragraph one of the consent form that Dr. ter Brugge is not the only doctor authorized by Mr. MacLean to perform the procedure, there is some ambiguity in the role to be played by "such other medical personnel". The question is whether the words "under his/her supervision and direction" modify only the words "assist him/her" or whether they also modify word "act". In other words, are the other medical personnel which Dr. ter Brugge may select or approve of authorized to act only if they do so under Dr. ter Brugge's immediate supervision and direction. If they are so limited then clearly Doctors Willinsky and Hoff are not covered by the consent because they did not either assist Dr. ter Brugge or act under his immediate supervision and direction because he was not present during the spinal angiogram. If, on the other hand they are not so limited, then the authorization covers Doctors Willinsky and Hoff.

40 It would seem to me that had the draftsman of the consent form intended that the words "under his/her supervision and direction" were to apply only to "assist him/her" he or she would have inserted a comma after the word "act". Moreover, it is difficult to think how Dr. ter Brugge could be assisted without such assistance being given him under his immediate supervision and direction.

41 Nevertheless, I find that it is unnecessary for me to interpret the wording, because I find that Mr. MacLean did in fact authorize Doctors Willinsky and Hoff to perform the spinal angiogram.

42 Dr. ter Brugge testified as to a specific recollection of having informed Mr. MacLean that Dr. Willinsky, assisted by Dr. Hoff, would be performing the spinal angiogram the next day. He says that Mr. MacLean did not react or object in any way to this news. Had that happened, he says, he would have reassured Mr. MacLean that he would actually be in better hands with Dr. Willinsky than with Dr. ter Brugge because of Dr. Willinsky's special interest and expertise in spinal angiograms as opposed to cranial angiograms. He knew at the time of the conversation that he had scheduled Doctors Willinsky and Hoff for the procedure and that he himself would be at the university during the procedure. His explanation for the fact that his own name, and not those of Doctors Willinsky and Hoff, appears on the consent as "attending physician", is that it was his invariable practice, and, so far as he was aware that of other physicians, to insert the name of the doctor obtaining the consent rather than the name of the doctor who would actually be performing the procedure. Although he was reminded in cross-examination that there is also a space in paragraph four for the name of the "informing physician" he did not in any way attempt to abandon or modify his explanation.

43 Although Mr. MacLean has no specific recollection of his meeting with Dr. ter Brugge on November 16, 1992, he testified that had he been told that Dr. Willinsky, and not Dr. ter Brugge, would be performing the spinal angiogram, it would have been a matter of such importance to him that he would have discussed it with his wife, and he did not. He had been told by Dr. Griebel that Dr. ter Brugge was the foremost specialist in this field, and he was expecting that Dr. ter Brugge would do the procedure. In fact, he says, he was unaware that someone else had done it until after he had visited the Mayo Clinic.

44 Mrs. MacLean was of the same opinion, and confirmed that her husband had never mentioned anything about a doctor other than Dr. ter Brugge performing the spinal angiogram, a development which she agreed would have been so significant that they would undoubtedly have discussed fully.

45 Although it is interesting to note that neither Mr. MacLean nor Mrs. MacLean went so far as to suggest that they would have actually refused to authorize Doctors Willinsky and Hoff to do the procedure, it is unnecessary, because of the conclusion I have reached in paragraph 41, to consider whether the "reasonable person" test is limited to the issue of the disclosure of the risk of the procedure itself, or whether it also applies to the identity of the doctor performing the procedure.

46 Mr. MacLean's general memory of his visit to Toronto is vague at best. It is difficult to accept that he could be so certain that Dr. ter Brugge did not tell him that Doctors Willinsky and Hoff would be performing the spinal angiogram and yet at the same time have absolutely no recollection of discussing the very serious risks of the procedure or of signing a consent which he clearly signed.

47 I also have difficulty with the reliability of Mrs. MacLean's evidence that she and her husband would have discussed any change of doctors. Although she is a thoughtful, sensitive person, her

recollection may well have been affected by her obvious and natural partisanship. Two incidents lend support to this view:

(i) Both Mr. and Mrs. MacLean recall Dr. ter Brugge introducing himself to them on November 17, 1992 just before the spinal angiogram. Mrs. MacLean recalls him pointing to his nametag. Dr. ter Brugge said that he could not even have been at the hospital at that time because he was at the University of Toronto. It is also hard to imagine why Dr. ter Brugge would feel he needed to introduce himself to the man he had already met the day before. I find that the MacLeans are confused in this, and that it was actually Dr. Willinsky who introduced himself to them prior to the procedure.

(ii) Mrs. MacLean says that prior to the cranial angiogram Dr. Hoff introduced himself to her and told her that he and Dr. Willinsky would be performing the cranial angiogram because it was a simpler procedure than the spinal angiogram, and that it could be done under a local anesthetic. Mr. MacLean testified that following the spinal angiogram Dr. Willinsky, who, he assumed, had been assisting Dr. ter Brugge, came to see him while he was still feeling the effects of the general anesthetic. Mr. MacLean was anxious to know the result, but Dr. Willinsky thought that he should wait until he was completely out of the anesthetic. When Mr. MacLean insisted, Dr. Willinsky told him that although the search was one of the most complete ever performed in the Toronto hospital, the results were negative, but that as a precaution he and Dr. Hoff would perform a cranial angiogram, a simpler procedure done under local anesthetic.

(iii) Dr. Hoff recalls speaking to Mrs. MacLean but says that he certainly did not say what she reported him as saying. What he probably told her, he testified, was that he and Dr. Willinsky would be doing the cranial angiogram, a procedure which required only a local anesthetic because it was less complicated and time consuming than the spinal angiogram.

48 Dr. Hoff's version makes infinitely more sense. It is hard to picture Dr. Hoff telling Mrs. MacLean that he and Dr. Willinsky would be performing the cranial angiogram because it was simpler, when they had just done the more complicated spinal angiogram. It is no less difficult to conceive of any doctor admitting that the reason he would perform a procedure was that it was simpler!

2. Conclusion

49 For the reasons set out above, I find that Dr. ter Brugge informed Mr. MacLean that the spinal angiogram would be performed by Doctors Willinsky and Hoff, and that Mr. MacLean accepted that fact and authorized the procedure to go ahead on that basis.

50 Accordingly, the claim in so far as it is based on battery and breach of fiduciary duty must fail.

IV. MEDICAL MALPRACTICE - THE CLAIM IN NEGLIGENCE

51 The claim against Doctors Willinsky and Hoff in tort is based on three allegations of negligence on their part:

(i) that they failed to make a thorough search for the AVM;
(ii) that they failed to perform a repeat spinal angiogram;
(iii) that they failed to recommend to the MacLeans and/or their doctors appropriate and timely follow-up procedures.

1. The Spinal Angiogram

A. Arteriovenous Fistula (AVF)

52 An AVF (sometimes referred to as a shunt) is an abnormal vessel connecting an artery to a vein, allowing for the passage of blood directly from artery to vein without going through the capillary network where it would have been enriched by oxygen and other nutrients. It can be treated surgically by removal or by embolization (blocking). Untreated, it slowly increases the blood pressure in the vein and prevents the enriched capillary blood from entering the vein. The disorder acts like a stroke in that it disturbs the normal metabolism of the tissue of the spinal cord. Unlike a stroke, however, it develops slowly. The nerve cells gradually die and are not replaced. As a result, the patient may suffer loss of control over limbs and certain other body functions. Eventually the lower parts of the body become paralyzed. The longer treatment is delayed the more disastrous the result. On the other hand, successful treatment at an early stage will arrest deterioration and may even lead to recovery, although any recovery would usually fall far short of complete.

53 MRI and myelography results may lead to a diagnosis but cannot hope to establish precise location sufficient for treatment purposes. That role is played by angiography, and, in the case of a suspected spinal dural fistula, by spinal angiography.

(B) The Procedure

54 Spinal angiography is an extremely difficult, painstaking, time consuming procedure requiring considerable expertise, dexterity and patience. It involves the introduction of a catheter through the groin area into the femoral artery and thence into the aorta and into the blood vessels leading from the aorta. These blood vessels (pedicles) are then injected with a contrasting dye so that they maybe seen through contemporaneous fluoroscopy. By this means it is hoped to locate the fistula so that it can be treated surgically.

(C) The Toronto Spinal Angiogram

55 Doctors Willinsky and Hoff performed the spinal angiogram on the afternoon of November 17, 1992. An incision was made in the groin area and a sheath placed into the femoral artery. A catheter was subsequently introduced and guided through the femoral artery to the aorta. For the remainder of the procedure, Doctors Willinsky and Hoff studied the vascular supply to the spine by examining all possible pedicles flowing from the aorta.

56 The spinal angiogram was observed by Doctors Willinsky and Hoff as it was occurring through fluoroscopy. Once an orifice to a pedicle had been identified, an amount of contrasting dye was injected. The injection of this dye is known as an angiogram run. Throughout the run, digital images were taken. The number of images differs depending upon the run. After the procedure was complete, Dr. Willinsky selected a representative film from each of the angiogram runs. These films have been introduced into evidence as Exhibit 10D.

57 Dr. Willinsky testified as to what each of the 23 angiogram runs demonstrated, and the following is a summary of that evidence as it pertains to each run recorded:

i) shows left T8. Dr. Willinsky testified that the procedure usually starts there because the Artery of Adamkiewica often rises off T9. If the physician gets into T8, it is injected and a run is done. Left T8 is normal.

ii) next is left T9. When left T9 was injected, it showed left T9 and left T10 by collateral flow. Left T10 was done again later by selective angiography.

iii) shows right T8 which was injected and found to be normal. This injection filled a little of left T8 which had already been seen on run (I).

iv) left T7 was injected and found to be normal

v) right T7 was injected and found to be normal

vi) right T6 was injected and found to be normal

vii) right T5 was injected and found to be normal

viii) right T3. This shows a supply to two levels. We now know more clearly that the Mayo Clinic films show T3 and T4 arising from a common pedicle at T3

ix) right T9 shows the Artery of Adamkiewicz. T8, 9, 10 on the left can also be visualized by collateral flow from contrast in the aorta

x) right T9 - same as (ix). The run lasted 30 seconds in order to get transit time. Three is reference on the films to the number of seconds which have passed. This shows the 13th image of 24 images taken at 20 sec mark.

There are many films of T9 because they mark the transit time; that is, when, after injection of contract dye, does the artery wash out and where are the abnormal veins, Dr. Willinsky's conclusion that was that the artery washed out at about 25 seconds. This can be perfectly normal. A few little veins could be seen but it was hard to identify the ones seen on the myelogram so Dr. Willinsky went on to do a complete angiogram.

xi) left T10 is shown by collateral flow from T9 and T8 on left side. Here, we are seeing more than one intercostal by one injection

xii) right T11 is shown. Also shows left T11 and left T10 through flushing of contract dye in the aorta

xiii) right T10 was injected and found to be normal

xiv) right T12 was injected and found to be normal

xv) right L1 injected which also visualized left L1, right L1 and both T12. There was also faint visualization of right L2 by collateral flow

xvi) injection show bi-lateral L3. Both left and right arteries at L3 level are supplied off a common pedicle. The joint pedicle divides very quickly into right and left. This is a very large pedicle and also seems to supply L4 bilaterally. The aorta ends around L4. It is also possible to see branches as far up as left L2 by collateral flow

xvii) left L1 injected and shows filling L2 by collateral flow

xviii) left T11 injected again because catheterized;
contract dye also fills left T10 and T11 on the right

xix) left T12 was injected and found to be normal

xx) left T6 was injected and found to be normal

xxi) left T5 injected and fills T3 and T4 collaterally. Dr. Willinsky believed that he was injecting the supreme intercostal, highest accessible level off the aorta. He knew he was not seeing T1 and T2 but believed that they could access from above as the vessels in the area are very small

xxii and xxiii) internal iliac arteries, left and right respectively were injected and found to be normal

58 The report (Exhibit 2, Tab 9) of the spinal angiogram identified the catheters used and the intercostal injections which were made. Dr. Willinsky reported on the direct injection of certain vessels and noted specifically:

> On the rest of the intercostal and lumbar injections, there is no evidence of an arteriovenous shunt. This is also true for the internal iliac injections which fill the lateral sacral arteries. The few intercostal and lumbar vessels which were not visualized were felt to be well seen by collateral flow in the adjacent pedicles.

59 A cerebral angiogram was performed on November 19, 1992. It too demonstrated no SDAVF on injection of the various vessels, including the thyrocervical and costocervical arteries which supply the upper portion of the spine.

(D) The Medical Experts

(i) Dr. Charles C. Church

60 Dr. Church testified on behalf of the plaintiffs. Since 1973 he has been a radiologist on the staff of the Toledo Hospital, Toledo, Ohio, and of Flower Hospital, Sylvania, Ohio. Since 1996 he has carried the designation of neuroradiologist. In the past ten years he has performed about 20 spinal angiograms, in only three of which was a SDAVF identified. On each occasion identification was made on the first angiogram.

61 His somewhat limited experience when compared to that of the defence experts must be taken into account in weighing his opinions.

(ii) Dr. Jeff Donat

62 Dr. Donat, a neurologist, has no special expertise in the techniques of radiology. He was the treating physician who referred Mr. MacLean to Dr. Griebel. Following the Toronto procedures Mr. MacLean returned to Dr. Donat's follow-up care, and the Toronto doctors had no further contact with, nor responsibility for, Mr. MacLean.

63 At trial he assumed the role, consciously or unconsciously, of being a somewhat passionate advocate for his patient. Whatever his motivation, including a realization that his own professional care giving would be opened to scrutiny and perhaps even criticism, his partisanship detracts somewhat from his objectivity.

(iii) Dr. Douglas A. Nichols

64 Dr. Nichols is a staff neuroradiologist at the Mayo Clinic, Rochester, Minnesota. He did not testify. Living and working beyond the jurisdiction of this court he was not a compellable witness, and he refused a request to appear voluntarily. No steps were taken to have him examined on commission pursuant to Rule 36. His reasons for refusing to testify are unknown.

65 I have been asked by counsel for the defendants to draw an adverse inference from the plaintiffs' failure to call Dr. Nichols as a witness. The unexplained failure to call a witness may well be the subject of an inference that the witness' testimony would be not be helpful to the plaintiff's case. It is a discretionary matter for the trier of fact to determine after first taking into consideration all relevant circumstances. In this case the failure was not unexplained, and I decline to accept the invitation of defence counsel in respect of it.

66 During trial counsel for the plaintiffs tendered as an exhibit a letter dated January 29, 1993 written by Dr. Nichols to Dr. Donat. In the letter Dr. Nichols reports upon his review of the films and other materials sent by Dr. Donat. In brief, Dr. Nichols is informing Dr. Donat that the Toronto spinal angiogram was incomplete in that several key vessels were not accessed and examined. He

expresses the view that Mr. MacLean has a SDAVF "which as of yet has not been angiographically demonstrated", and that a second spinal angiogram should be done. He characterizes the Toronto procedure as non-definitive but falls short of stating that the failure of Doctors Willinsky and Hoff to locate the fistula demonstrates a lack of the appropriate standard of care on their part.

67 Over the objection of the defendants I admitted the letter into evidence as Exhibit 6, Tab 8 for the truth of its contents. I did so on the basis that Dr. Nichols was not being consulted as an expert for his medico-legal opinion on the liability of Doctors Willinsky and Hoff, but as a treating doctor being asked to recommend a course of treatment. Accordingly, he was under a duty to reply to Dr. Donat, and the letter therefore becomes a medical record within the meaning of s. 35 of the Ontario Evidence Act. I was also of the view that it met the twin tests of reliability and necessity under the R. v. Khan, [1990] S.C.J. No. 81, line of cases. The fact that Dr. Nichols' unavailability deprived defence counsel of the right of cross-examination goes not to the admissibility of the evidence but to its weight.

(iv) Dr. Willinsky

68 Although he is a party to the action Dr. Willinsky was qualified as an expert in the area of neuroradiology specializing in the diagnosis and treatment of AVFs for the purpose of giving opinion evidence. A neuroradiologist since 1987, he has specialized in the performance of spinal angiography under the tutelage of Dr. Pierre Lajaunais, an internationally recognized expert in that discipline and co-author of a leading text in the field.

69 As primary operator Dr. Willinsky has performed five to ten spinal angiograms per year since joining the Toronto Hospital staff in 1989. Of these, some 26 were specifically aimed at demonstrating a SDAVF. In addition he assisted in about 14 others in which the focus was a SDAVF.

(v) Dr. ter Brugge

70 Dr. ter Brugge has specialized in neuroradiology since 1976, and from 1992 to 1998 was head of Neuroradiology at the Toronto Hospital, Western Division.

(vi) Dr. Hoff

71 Dr. Hoff is a neuroradiologist now practicing in the State of Louisiana. In 1992 he was training with the neuroradiology group at the Toronto Hospital where he was undergoing six months of specialized training in neuroradiology having previously completed his residency in radiology. He assisted Dr. Willinsky in the two procedures.

72 Dr. Hoff's relative inexperience (he has performed only two spinal angiograms since setting up practice in Baton Rouge, Louisiana, in 1994) affects the weight of his expert opinion.

73 Additionally, as in the case of Doctors Willinsky and ter Brugge, the fact that Dr. Hoff is also a party must be taken into account in assessing his evidence.

(vii) Dr. Allan J. Fox

74 Dr. Fox, a qualified neuroradiologist since 1975, has been the Director of Neuroradiology in the department of Diagnostic Radiology at University Hospital, London, Ontario.

75 Over the past 22 years he has performed some 200 spinal angiograms of which 100 focussed on SDAVF. He found SDAVF in about half of those cases, and of these, approximately two-thirds resulted in a demonstration of the fistula on the first attempt. In the remaining cases further angiography was required. In most of these the fistula was located on the first repeat, but in at least one case four angiograms were required to confirm the diagnosis.

(viii) Dr. Thomas R. Marotta

76 Since January 1994 Dr. Marotta has been a staff neuroradiologist at the Vancouver Hospital, Vancouver, B.C. While in training he assisted in approximately 20 to 25 spinal angiograms. Over the past four and a half years he has performed 17 spinal angiograms for the diagnosis of SDAVF. Fistulas were located in seven of these cases; in another seven the diagnosis was that there was no fistula; the remaining three cases are outstanding.

(E) The Allegations

77 The plaintiffs allege that Doctors Willinsky and Hoff fell below the standard of care in:

(i) Failing to locate and inject the left supreme intercostal artery.
(ii) Relying on collateral flow to visualize certain of the blood vessels rather than catheterizing them specifically.
(iii) Concluding that they had made a thorough search, and terminating the procedure when they did.

(F) The Standard of Care

78 The standard of care expected of a physician was best summed up Schroeder J.A. in Crits v. Sylvester (1956), 1 D.L.R. (2d) 502 at 508, aff'd., [1956] S.C.R. 991:

> Every medical practitioner must bring to his task a reasonable degree of skill and knowledge and must exercise a reasonable degree of care. He is bound to exercise that degree of care and skill which could reasonably be expected of a normal, prudent practitioner of the same experience and standing, and if he holds himself out as a specialist, a higher degree of skill is required of him than of one who does not profess to be so qualified by special training and ability.

79 The standard expected of a specialist then is a high one, but it is not one of perfection. As Taschereau J. wrote in Cardin v. City of Montreal (1961), 29 D.L.R. (2d) 492 at 494:

> The doctor is not the guarantor of the operation he performs or the attention he gives ... Perfection is a standard required by law no more for a doctor than other professional men, lawyers, architects, etc. Accidents, imponderables, what is foreseeable and what is not, must necessarily be taken into account.

80 Negligence must not be equated with misadventure. In Roe v. Minister of Health, [1954] 2 Q.B. 66 at 83, Lord Denning wrote:

> It is easy to be wise after the event and to condemn as negligence that which was only misadventure. We ought always to be on the guard against it, especially in cases against the hospitals and doctors. Medical science has conferred great benefits on mankind, but these benefits are attended by considerable risks. Every surgical procedure is attended by risks. We cannot take the benefits without taking the risks.

Later at pp. 86 - 87 Lord Denning continues in much the same vein:

> But we should be doing a disservice to the community at large if we were to impose liability on hospitals and doctors for everything that happens to go wrong. Doctors would be led to think more of their own safety than of the good of their patients. Initiative would be stifled and confidence shaken. A proper sense of proportion requires us to have regard to the conditions in which hospitals and doctors have to work. We must insist on due care for the patient at every point, but we must not condemn as negligence that which is only misadventure.

81 These statements were adopted and applied by Schroeder J.A. in Crits v. Sylvester, supra, at 509 and also by Anderson J. in Wilkinson Estate v. Shannon (1986), 37 C.C.L.T. 181.

82 Nor must we automatically label every honest error in judgment as negligence. In her leading text on Legal Liabilities of Doctors and Hospitals in Canada (2d ed.) Carswell, 1984, at p. 204, Ellen Picard comments on the doctor's duty as follows:

> The duty is not as onerous as it might seem; a doctor is not bound at his peril to make no mistake, although he is expected to exercise reasonable care, skill and judgment in coming to a diagnosis. If he does so he will not be held liable.

And at pp. 239 - 240 she writes:

> A doctor is not liable for an honest error of judgment providing he acts after a

> careful examination in what he believes to be the patient's best interest. A doctor can give no guarantee of success, nor ensure a cure, so a diagnosis may be inaccurate or treatment may be improper and an injured patient may go uncompensated. Negligence cannot be assumed simply on the basis of the consequences of medical treatment to a patient. The conduct of a doctor is not to be measured by the result, for the practice of medicine as an art as well as a science; a great deal of medical treatment depends on the exercise of judgment. But it is not enough for the doctor to show that he exercised his judgment. He must prove that in doing so he met the standard of care required of him.

83 The argument made on behalf of the plaintiffs is that the AVF was there to be found, and that by failing to find it Doctors Willinsky and Hoff failed to measure up to the standard of care expected of them in the circumstances. In particular, they argue that the doctors were negligent in failing to directly catheterized certain of the blood vessels, and instead relied on the far less reliable technique of collateral flow.

84 The defendants concede, as to the expert witnesses called on their behalf, as well as the defendant doctors themselves, that Mr. MacLean's clinical and radiological presentation were consistent with the existence of a SDAVF. There can be no doubt but that at the time of the Toronto procedures such a SDAVF existed notwithstanding the diagnosis by Doctors Willinsky and Hoff, but the issue is whether or not their performance fell below the standard of care. The fistula was there but the issue is whether it was there "to be found".

(G) Collateral Flow

85 Collateral flow is a method of visualizing blood vessels without specifically injecting them. Where vessels cannot be accessed directly by catheter they may nonetheless be seen through fluoroscopy if they can be filled with the contrasting dye by injecting an adjacent pedicle.

86 All experts agree that direct injection is preferable to reliance on collateral flow and that where a pedicle can be accessed and injected directly it should be.

87 In his report of the spinal angiogram done on November 17, 1992 (Exhibit 2, Tab 9) Dr. Willinsky noted:

> The few intercostal and lumbar vessels that were not visualized were felt to be well seen by collateral flow in the adjacent pedicles.

88 Dr. Church testified that reliance on collateral flow is a very inaccurate and unreliable way to find an AVF, owing to an inferior ability to see the vessels in question, particularly the branch vessels of the artery, when using that method. Accordingly, an AVF could not in his opinion be excluded in reliance on the collateral flow method. His view was that the search made by Doctors Willinsky and Hoff was incomplete and that they therefore fell short of the standard of care

expected of them.

89 With respect, I think that this view oversimplifies the matter. It is based on the argument that since Dr. Nichols was able to locate the fistula in February 1993, Doctors Willinsky and Hoff ought to have been able find it in November 1992. This is exactly the kind of reliance on hindsight about which Canadian courts have urged caution in judging the performance of a physician. As was noted by L'Heureux-Dubé J. in Lapointe v. Hôpital Le Gardeur, [1992] 1 S.C.R. 351 at 362:

> ... courts should be careful not to rely upon the perfect vision afforded by hindsight. In order to evaluate a particular exercise of judgment fairly, the doctor's limited ability to foresee future events when determining a course of conduct must be borne in mind. Otherwise the doctor will not be accessed according to the norms of the average doctor of reasonable ability in the same circumstances but rather will be held accountable for mistakes that are apparent only after the fact.

90 Schroeder J.A. in Gent v. Gent and Wilson, [1956] O.R. 257 put this way at 266:

> It is trite to say that it is always easy to be wise after an event, and in cases of this kind care must be taken not to condemn as negligence what may be, and in this case undoubtedly is, only a misadventure. Nothing is to be imputed to the defendant that is not clearly proved against him ... Post hoc, ergo propter hoc, has no place in our law.

91 Moreover, Dr. Nichols had several advantages that Doctors Willinsky and Hoff did not have. For one thing, the patient's clinical course had progressed a further three months during which there had been significant further deterioration. For another, a further MRI had indicated the presence of a malformation. Finally, Dr. Nichols had the report and films of the Toronto procedure before him.

92 Dr. Marotta likened the task facing Doctors Willinsky and Hoff to "trying to find a needle in a haystack". He felt that they had worked very hard and had made a thorough search but could not find it. Dr. Nichols had the same task except that by that time the haystack was very much smaller. Dr. Fox noted that the fistula was so elusive that even Dr. Nichols found it only when he was well into his search.

(H) The Search

93 Although the goal of spinal angiography is to demonstrate the suspected fistula, there are several impediments to the search. In order to be able to inject the contrasting dye into a pedicle other than through collateral flow the practitioner must be able to find and enter with his catheter the entrance into the pedicle. His task is to explore the aorta trying to locate orifices to pedicles which lead off the aorta and supply the vascular bodies of the spine. It is really skilful trial and error because he does not know in advance how many pedicles there are (humans vary in the number and

location of these vessels) or where they may be located. Although in theory there is one pedicle on either side of the aorta supplying each level of the spine, there may be anatomical or congenital variations which will result in the pedicle being in an unexpected location or even in it being absent all together.

94 For example, instead of a uniform number of pedicles, two levels of the spine may be supplied by one pedicle. In Mr. MacLean's case both the T3 and T4 levels were supplied by a single pedicle arising from T3 so that no amount of searching for a pedicle at T4 would have been successful. Similarly, both right and left branches arise from a common pedicle which divides into the two segments just beyond the aorta.

95 Some patients have dilated and tortuous aortas, making branches extremely difficult to locate. Others may have arteriosclerosis or plaque which can obscure or cover the openings of the branches. Such a condition may cause the catheter to bump over an opening or make it otherwise impossible for the catheter to enter it. Unfortunately, there is no way of knowing in advance whether a particular opening is occluded or not. Mr. MacLean had evidence of arteriosclerosis and occlusion of at least one level at L2 and L3.

96 Pedicles at the highest thoracic levels are particularly difficult to find because there the aorta twists and bends towards the heart.

(I) The Supreme Intercostal

97 'Supreme intercostal' is a somewhat colloquial term for the highest pedicle entered on a side of the aorta. Typically, it runs like a pipe extending upwards with several vessels leading off it and passing underneath to the spinal levels. Although its location will vary with individual anatomy, it is usually found at T3, T4 or T5. Dr. Willinsky noted this type of formation at T5 and concluded that he had accessed the supreme intercostal at that level. When Dr. Fox observed the angiography films he came to the same conclusion, and so must have Dr. Nichols, because he did not include the T1 and T2 as vessels which were missed in the Toronto angiography.

98 Doctors Willinsky and Hoff made extraordinary efforts to locate the fistula. The procedure lasted 3 1/4 hours, and they used catheters of a wide variety of shapes and sizes in their efforts. It is important to bear in mind that they were searching for openings without knowing whether those openings were accessible or even if they existed.

99 It is equally important to note that the fistula found by Dr. Nichols was in a location that could only be identified by collateral flow. The fistula was located inferior to the T2 level but was demonstrated by injecting the common pedicle feeding the T3 - 4 level.

(J) Conclusion

100 Both Dr. Fox and Dr. Marotta, who had the advantage of viewing the Mayo Clinic

angiography films as well as those from Toronto, expressed in no uncertain terms the opinion that the Toronto examination was very thorough. I found them no less objective as witnesses than Dr. Church, but in view of their infinitely greater experience and standing I find their opinions to be far more persuasive than those of Dr. Church. The fistula was extremely difficult to locate. It was "elusive" according to Dr. Fox. Not even perfection of procedure could guarantee that it would be located, but the standard is not that high. Doctors Willinsky and Hoff brought to the procedure their combined skill and experience and they conducted themselves in a manner appropriate to their level of expertise; the law requires no higher standard of them. On all the evidence I conclude that Doctors Willinsky and Hoff met the standard of care expected of them in the circumstances.

2. Failure to Order Immediate Repeat Spinal Angiography

101 Dr. Church testified that because of the very high suspicion that a fistula was present an early repeat spinal angiogram would have been a very prudent thing to do. Because such procedures were not available in Saskatchewan the plaintiffs say that the repeat spinal angiogram ought to have been done in Toronto.

102 Once again I am obliged, for reasons previously expressed, to give much greater weight to the opinions of Doctors Fox and Marotta. They both felt that rather than performing an immediate repeat spinal angiogram in Toronto it would be more prudent to return the patient to the care of his doctors in Saskatchewan. Dr. Fox put it this way:

> The judgment as I see it to stop after two sessions of angiography, November 17 and November 19, is appropriate because of the efforts made to find vessels that were not directly catheterized and I don't know at that time how one could have known whether the missing vessels were in fact not ever able to be filled and even at that time the diagnosis could be in doubt and a period of time of watching and waiting would be very appropriate before going through the sessions again.

Dr. Marotta was also of the view that the patient should be discharged, and then monitored carefully by his caring physician, including a repeat MRI; and then, depending on the findings, the patient would be brought back probably a month or so later for a repeat spinal angiogram.

103 Dr. Willinsky concluded that he and Dr. Hoff had performed a thorough investigation. He also found that the spinal cord circulation time was within normal limits which would suggest that an AVF was not present. On this basis he elected to terminate the procedure, a decision which both Dr. Fox and Dr. Marotta felt was quite appropriate in the circumstances.

104 Clearly there are a limited number of explanations for the failure to find the AVF, namely:

1. That the AVF was still present and that the search, though complete, had simply failed to find it.
2. That the AVF was still present and that the search had been incomplete.

3. That there was never any AVF present.
4. That there had been an AVF present but that it had disappeared through a spontaneous thrombosis or clotting.

105 We now know, of course, with the benefit of perfect hindsight, that the AVF still existed and that the only reason it was undetected was that Doctors Willinsky and Hoff ended their search on the assumption that they had made a full and complete investigation. But that is not the point; the point is what possibilities would reasonably occurred to Doctors Willinsky and Hoff in the circumstances that existed at the time. They believed that their search had been both complete and thorough. As well, Dr. Willinsky was comforted by his observation that the spinal cord circulation time was within normal limits. As I have already determined, that conclusion was an appropriate one for them to reach in the circumstances. Accordingly, it was reasonable for them to discount the first two possible explanations.

106 In weighing the likelihood of the other two possibilities, Dr. Willinsky decided that in view of the strong clinical indication that there was an AVF, it was more probable that the AVF had spontaneously thrombosed. In coming to this conclusion, which again with the benefit of hindsight, we now know was incorrect, he was conscious of the dearth in the medical literature of instances of such a thrombosis. In fact, of the 11 cases described in a 1995 article only one was a SDAVF - all the rest were cerebral fistulae. While both Doctors Fox and Marotta conceded that the likelihood of spontaneous thrombosis of a SDAVF was quite small it was a possibility which neither was prepared to rule out. What makes their opinion understandable is the fact that by its very nature the occurrence is rarely reported. It simply leads to an improvement or stabilization of the patient's condition, with the result, in most cases, that spinal angiography is no longer necessary. Conversely, an AVF, if found, will be treated and not left to see if it was spontaneously thrombosed.

107 Had the fistula closed on its own it would still have taken a significant amount of time for the clinical signs to be reversed, so that an immediate follow-up MRI would be premature.

108 For these reasons I conclude that there was no inappropriate failure to perform an immediate repeat spinal angiogram.

3. The Failure to Recommend Appropriate and Timely Follow-Up Procedures

109 Dr. Griebel was Mr. MacLean's referring physician, and so it was to Dr. Griebel that Dr. Willinsky sent the formal reports of the two angiograms, neither of which report made any reference to follow-up care. In the absence of documentary evidence on the point, it is necessary to rely on the oral testimony of the witnesses as to whether appropriate, if any, follow-up recommendations were made.

110 All witnesses who testified on the point, including Dr. Willinsky himself, agreed that in these circumstances Dr. Willinsky had a duty, in reporting to the referring neurosurgeon, Dr. Griebel, to give his opinion on the results of the spinal angiogram, and to give advice on the patient's future

care (Dr. Fox went so far as to say that Dr. Willinsky ought to have stated that an AVF could not be ruled out despite the results of the procedure). Advice with respect to future care would include that the patient should be followed very closely and monitored and watched for signs of continuation or progression of the symptoms, and that further studies, appropriate to the clinical evolution, be done, including a repeat MRI, to see if there were further changes, and a repeat spinal angiogram, if necessary. All agreed that failure to do so would constitute a failure to meet the standard of care.

111 Following the spinal angiogram Dr. Willinsky told both Mr. and Mrs. MacLean that despite a thorough and careful search he and Dr. Hoff had failed to find an AVF. He explained that since he agreed that all clinical findings pointed strongly to the existence of a fistula, it was therefore quite possible that the fistula had closed on its own. He then told them that he would be discussing his findings with Dr. Griebel. He made it quite clear to them that he was ruling out any AVF.

112 Dr. Willinsky had a vague recollection of having offered the same explanation to Dr. Griebel, and says that he would have suggested to Dr. Griebel that Mr. MacLean be followed closely and have a repeat MRI to confirm the suspected thrombosis.

113 Dr. Griebel did not testify. He was abroad during the trial and did not return until after all the defence witnesses had testified. Plaintiffs' counsel's proposal to call him in reply was opposed by the defence. He was not permitted to testify on the basis that his testimony should have been given during the plaintiffs' case in chief, and that the prejudice to the defence could not be compensated for it in any way that would be fair and just. No steps had been taken either to have his evidence taken on commission or to request adjournment. I am satisfied, however, that his failure to testify was not unexplained, and I decline to draw any adverse inference.

114 When Dr. Donat learned of the results of the Toronto spinal angiogram from Dr. Griebel he was so shocked to find out that his own diagnosis was apparently incorrect that he telephoned Dr. Willinsky, who confirmed to him that an AVF had been excluded by the results of the test. Dr. Donat testified that Dr. Willinsky made no recommendations as to follow-up care; rather that he gave the impression that it was now Dr. Donat's own responsibility to find an alternative diagnosis. Dr. Donat then proceeded to devote all his energies to that end.

115 Dr. Willinsky had only a vague recollection of speaking with Dr. Donat. He said that he would have told him what he had told Dr. Griebel, namely that they would have to follow the patient closely and do a repeat MRI.

116 In his desperation, Dr. Donat looked into rare diseases. He ordered extensive blood work and X-rays and tests for rare viral infections. In his report of November 26, 1992 to Dr. Gulka (Exhibit 6, Tab 5) his frustration is apparent when he records a progression of his patient's symptoms. He concludes his report, "He should return in several months for a repeat MRI which this time should include the brain to see if there is any evidence of pathology elsewhere". He thought that the MRI might reveal some change in the spinal column that would suggest a diagnosis, including the possibility of multiple sclerosis. He saw Mr. MacLean again on January 11, 1993 and reported to

Dr. Gulka (Exhibit 6, Tab 6) that the symptoms were worsening. He felt that systemic diseases such as lupus or sarcoid were unlikely causes of the symptoms.

117 An MRI performed January 18, 1993 showed abnormal blood vessels. Dr. Donat found this so frustrating in view of the angiography results that he resolved to get a second opinion. On January 21, 1993 he sent the MRI and angiography films to the Mayo Clinic. On January 29 Dr. Nichols wrote back (Exhibit 6, Tab 8) to the effect that the Toronto study was, in his opinion, incomplete, and that therefore an AVF could not be excluded. Dr. Nichols recommended that Mr. MacLean be referred to his colleague Dr. Michael Ebersold, a neurosurgeon, who could coordinate the patient's evaluation at the Mayo.

118 Dr. Nichols arranged for Mr. MacLean to go to the Mayo but the patient did not actually arrived until February 18 because of delayed approval of coverage by Saskatchewan Health.

119 It is almost inconceivable that reputable physicians like Doctors Donat and Griebel would have failed to monitor their patient's condition closely had that been Dr. Willinsky's recommendation. Indeed, Dr. Fox conceded as much, at least as far as Dr. Griebel is concerned. Although I did not have the benefit of Dr. Griebel's testimony, I am confident that he and Dr. Donat would have acted quite differently had they not been assured that there was no AVF. It is no less conceivable that Mr. and Mrs. MacLean themselves would have countenanced any delay on the part of their caring physicians under those circumstances. Dr. Donat had reason to recall with clarity his conversation with Dr. Willinsky, whereas Dr. Willinsky's recollection was vague at best. The result is that it is far more likely, notwithstanding Dr. Donat's role as advocate, that the conversation unfolded as Dr. Donat related it, and that Dr. Willinsky's conversation with Dr. Griebel was not really any different.

120 Notwithstanding the Toronto results, and although he had clearly excluded an AVF, Dr. Willinsky ought to have alerted Doctors Griebel and Donat to the possibility, however remote, that the Toronto search might not have been exhaustive, despite his feeling that it was, particularly in light of the strong clinical indications. This he failed to do, and as a result fell short of the expected standard of care.

121 The failure was a significant cause of Mr. MacLean's condition. On the evidence I cannot find any want of care on the part of either Dr. Donat or Dr. Griebel, but even had there been it would not have reduced the liability of Dr. Willinsky (see Major J. in Athey v. Leonati (1996), 31 C.C.L.T. (2d) 113 at 120-121).

122 There is no allegation that Dr. Hoff had any reporting duty. The action should therefore be dismissed as against him.

V. DAMAGES OF MR. MACLEAN

1. Post Operative Developments

123 At the time of his visit to the Toronto Hospital in November 1992, Mr. MacLean was 55 years old, having been born February 16, 1937.

124 After the Mayo Clinic surgery he returned to Saskatchewan where he spent three months in rehabilitation at Wascana Rehabilitation Centre. He had been confined to a wheelchair upon admission, but by the time of his discharge on June 9, 1993, he had improved his walking, and was able to negotiate short distances with a walker or with forearm crutches. During his stay he complained of left hip pain which his doctor associated with posterior facet joint syndrome. He was fitted with a lumbro sacral support with excellent results.

125 After his discharge he was followed on an outpatient basis with continued improvement noted. However, by August 1994 he was having more problems with his back and with left leg pain, which his doctors attributed to a neurological or central pain, plus mechanical low back pain, all of which was worsened by a fishing trip and aggravated by spasticity, weight gain and long periods of muscle inactivity spent in his wheelchair.

126 This decline in Mr. MacLean's physical status prompted a further visit to the Mayo Clinic in December 1994. No further vascular abnormalities or other compromise were detected by MRI examination. The Mayo doctors questioned whether Mr. MacLean was developing a diabetic neuropathy.

127 Mr. MacLean is an incomplete paraplegic largely confined to a wheelchair. He has returned to his consulting business which has always entailed a great deal of travel, which he has been able to manage with modifications to his car. However, as a result of his declining energy and stamina and chronic pain he will be forced to abandon one of his two remaining contracts, representing 50% of his income. He has a neurogenic bladder. He experiences spasms and chronic pain, which resulted in the implantation of a morphine pump, the dosages of which have had to be increased steadily. He wakens several times at night with nocturia, and he has lost his sexual function. He remains at risk for ongoing depression, urinary tract infections, deep venous thrombosis, pressure sores, contractures developing in his lower extremities, and ongoing spasticity with pain. His disability must be considered to be permanent. Indeed, if there were to be any change in his condition it would be worsening rather than improving. In addition to the effect on his consulting business, his disability has considerably affected his social, recreational and household activities.

2. General Non-Pecuniary Damages

128 The purpose of an award of damages is to compensate an injured party for the pain, suffering and loss of enjoyment of the amenities of life which he has suffered and will foreseeably continue to suffer. It is not a perfect science because money can never hope to replace that which the plaintiff has lost.

129 The seminal case of Andrews v. Grand & Toy Alberta Ltd., [1978] 2 S.C.R. 229 was part of a trilogy which also comprised Arnold v. Teno, [1978] 2 S.C.R. 287 and Thorton v. Board of

School Trustees of School District No. 57 (Prince George), [1978] 2 S.C.R. 267. In Andrews the plaintiff was rendered a quadriplegic as the result of a traffic accident. The Supreme Court of Canada set the sum of $100,000 as an upper limit of non-pecuniary loss in "catastrophe" cases. The court has subsequently indicated that this limit is subject to the effects of inflation and that it is appropriate to adjust the limit to reflect an intervening rise in the cost of living. Lindal v. Lindal, [1981] 2 S.C.R. 629 at 641. As a result the upper limit has been driven increasingly upward by inflation to the point where it is now approximately two and a half times what it was originally.

130 Unlike Mr. Andrews, Mr. MacLean is not a quadriplegic; he is an incomplete paraplegic. Accordingly, while his disability is a significant and permanent one bordering on the devastating, it does not fall within the "catastrophe" cases. Moreover, because Mr. MacLean is considerably older than was Mr. Andrews, his loss will, in the normal expectation of life, be suffered over a fewer number of years. I assess his general non-pecuniary damages at $200,000.

131 Mr. MacLean's condition is the result of a disease process which began naturally and progressed for at least four years prior to his attendance at the Toronto Hospital in November 1992. At that time he suffered from a spinal cord vascular malformation which had already began to cause injury to his spinal cord. In particular, by that time he was already experiencing a certain amount of physical compromise, including back discomfort, some incidents of leg-buckling, numbness in the left leg and groin, and inability to achieve an erection, and difficulty in urinating.

132 This is not a "thin skull case" in which the injured party's latent condition makes him more susceptible to injury, and where the tort-feasor must take the plaintiff as he finds him: Rae v. Cole, [1993] O.J. No. 2496 (O.C.G.D.). Rather, it is a preexisting condition in which the subject tort has aggravated. Nor is it equivalent to those cases in which each of several different tort-feasors substantially contributes to the injury. I do not consider this authority to have been modified in any way by the Supreme Court of Canada decision in Athey v. Leonati, supra.

133 I think that Dr. Willinsky ought to have given enough information to Dr. Donat to enable the latter to wonder whether the fistula might have escaped detection in the Toronto tests, and that it may not have spontaneously thrombosed, contrary to Dr. Willinsky's suggestion. Had that been the case, Dr. Donat would have ordered an immediate repeat MRI and, probably, an immediate repeat spinal angiogram. Had that been done it is likely that Mr. MacLean's physical deterioration would have been arrested with a resolving stabilization, if not modest improvement. What happened however was that Dr. Donat reasonably concluded that whatever Mr. MacLean's problem was it was not an AVF, and he immediately dropped that cause from consideration and went on to pursue other more esoteric causes. As a result, time was lost and Mr. MacLean's condition, after an initial plateauing, not only failed to improve but proceeded to worsen until it was arrested in February 1993.

134 It is appropriate, then, that some reduction should be made to recognize Mr. MacLean's preexisting condition. Under the circumstances, however, I do not think that the reduction should be

made at any date later than the date of the Toronto procedure. In my opinion, a reasonable reduction giving proper regard to the nature and extent of Mr. MacLean's disability at that time would be 10% or $20,000. Accordingly, the net assessment for non-pecuniary damages is $180,000.

3. Income Loss

(i) Past Income

135 The experts agreed that the 1992 net income should be used as his pre-injury earnings level. For income tax purposes, Mr. MacLean reported a net income of $62,607 for that year. Two adjustments should be made. Income splitting reduces the net income for income tax purposes by $20,300, and all agree that this amount should be added back in. In addition, an account paid in 1993 covered services performed in 1992 and 1993, and the 1992 portion should be transferred from the 1993 total to the 1992 total. The evidence persuades me that the allocation by the plaintiffs' accountant of 80% to 1992 fairly represents the portion of services performed in that year. As a result, the adjusted figure for 1992 increases to $94,891.

136 To calculate the expected income from January 1, 1993 to the date of trial (October 31, 1998) requires totalling the income attributed to each year of the period, as adjusted for inflation. By deducting from the total expected income the actual income earned we arrive at the past income loss, in the sum of $256,889.

(ii) Future Income

137 The plaintiff has the burden of proving future loss not on a balance of probabilities but on the lower standard of a substantial possibility, or to put it another way, all he need show is that there is a reasonable chance of such loss occurring. Schrump v. Koot (1977), 18 O.R. (2d) 337 (C.A.) at 340 and 343; Graham v. Rourke (1990), 75 O.R. (2d) 622 (C.A.) at 634; Giannone v. Weinberg (1989), 68 O.R. (2d) 767 (C.A.) at 774 (leave to appeal to Supreme Court of Canada refused, [1989] S.C.C.A. No. 295).

138 In order to calculate Mr. MacLean's future income loss it is necessary to determine firstly his anticipated retirement age, secondly to determine what his earning capacity up to that date would have been but for his disability, thirdly to credit against such amounts his expected earnings for the period, and finally to calculate the present value of such loss.

(a) Anticipated Retirement Age

139 Statistics published by Statistics Canada show that the average retirement age for all retired Canadian males is 61.4 years. For professionals, managers and consultants who are self-employed and who do not have an employment-related or employment sponsored pension plan the average age is higher, at 63.2 years. The defence economics expert, Professor James E. Pesando, accepted a still higher retirement age of 65 in order to account for Mr. MacLean's success in his private

consulting practice together with the fact that he has earned greater income in the later years of his working life than he had previously.

140 The plaintiffs submit that in Mr. MacLean's case a still higher retirement age, at 70 years, would be more appropriate.

141 Statistics are always helpful but they are never determinative, and it is also of assistance to look at the subject himself. Mr. MacLean is self-employed; he has no pension plan and very little set aside for his retirement. Not only would there have been no incentive for him to retire, retirement would have drastically reduced his income. If he had had any incentive it would have been to continue working. He has clearly demonstrated remarkable and admirable perseverance and determination to work as much as he has been able to despite major physical handicaps. He enjoys his work and can be justifiably proud of the contribution he is making in the area of his practice. All these factors favour a later than average retirement age.

142 Some 23% of retired males return to the workplace after initial retirement, but in the majority of cases the post-retirement work is only on a part time basis.

143 In Mr. MacLean's case an increase to age 65 might account for the fact that he has no self-administered pension plan, but it would not recognize his own drive and industry. In my view, age 70 is unrealistic; the age should lie somewhere between the two extremes, if anything rather closer to 65; and I fix it at age 67.

(b) Earning Capacity and Anticipated Earnings

144 In my view, the proper method for determining future earning capacity is to base it upon an average of the last three years, namely 1996 $100,447, 1997 $102,076 and 1998 (projected) $103,558, for a three-year average of $102,027.

145 The medical evidence is that Mr. MacLean will experience a physiological decline as he ages. I accept his testimony that he would not be renewing one of his contracts, which was to expire in March 1999 and which represents 50% of his income. I think it reasonable to assume that he will be able to work at about 50% of capacity, producing anticipated income of $51,014 yearly, for an expected annual loss of $51,014.

146 I leave it to counsel to do the actual calculations. They may also wish to agree on what discount, if any, should be made for contingencies. In either case, if are unable to agree, I may be spoken to.

4. Past Expenses

(i) Out of Pocket

147 The parties have agreed that out of pocket expenses are $35,000, and I assess them at that

figure.

(ii) Services

148 These expenses totalled $14,569 and cover chauffeur expenses of $2,760 incurred in 1993 before Mr. MacLean's vehicle was equipped with hand controls, housekeeping (cleaning) expenses totalling $9,709, and $2,100 for snow removal. The defendants urge that no award be made because the housekeeping and snow removal services began in November 1992 and must therefore have been required by Mr. MacLean's condition at that time, and also because Mr. MacLean claimed the chauffeur cost as an expense for income tax purposes. I do not find these arguments at all persuasive. As a result, I assess these expenses at $14,569.

5. Additional Agreed Upon Expenses

149 The parties have also agreed on the following assessment of damages:

(i) the Saskatchewan Health subrogated claim in the amount of $149,740;
(ii) home renovation costs of $79,000.

6. Future Care

(i) Life Expectancy

150 Based on the Canada Life Tables, Mr. MacLean's life expectancy is to age 79.343. At trial the defence attempted to suggest that because Mr. MacLean has been a smoker of approximately one pack of cigarettes a day for over 30 years, a reduction of 25%, or four and a half years, should be made to his life expectancy.

151 Although there is no evidence of the effects of smoking on life expectancy, the defendants ask that I take judicial notice of the deleterious effects of smoking on Mr. MacLean's life expectancy, and they cite in support the decision of the Nova Scotia Court of Appeal in Campbell v. Varanese (1991), 102 N.S.R. (2d) 104.

152 With respect, I do not regard Campbell v. Varanese as standing for such a proposition. In that case the trial judge made a deduction of 35% for contingencies, the most important of which in his judgment was that of the probability of divorce and/or remarriage affecting the deceased widow's dependency. The Court of Appeal made no mention whatever of the effects of smoking other than to recite the defendant's argument on the point. The fact that the court reduced the trial judge's assessment does not support the defence contention. Moreover, the life tables include non-smokers and smokers alike. I decline to make any deduction.

(iii) Care and Equipment Costs
(a) Agreed Upon Items

153 The claims for Mr. MacLean's care and equipment needs are set forth in Exhibit 29. Several of them have been accepted and agreed to by the defendants, namely:

	Item	Cost	Replacement Period
*	Manual Wheelchair	$1,800.00	every 5 years
*	Wheelchair maintenance	169.00	annually
	and Repairs	272.00	every 5 years
*	Cushion (2)	70.00	every 5 years
*	Back Support	42.00	commencing at age 65
*	Transfer Board		& every 5 years
*	Commode	204.00	at age 70 years
*	Inspection Mirror	21.00	every 7 years
*	Bath Seats	228.00	every 5 years
*	Hand Hold Shower	80.00	every 7 years

* Foot Care Nurse 288.00 annually

(b) Items in Dispute

1. Home Maintenance

154 The issues here are three-fold:

(i) Whether the claimed expenses are truly extraordinary in the sense that they would not have to be incurred but the for the subject tort.
(ii) Whether any part of the expenses should be reduced as a result of the share of the workload taken on by persons other than Mr. MacLean.
(iii) Whether the funding ought to continue to age 70 or to age 75.

155 This item was costed at $1,560 annually for hiring a handyman for three hours per week at $10 per hour to attend to yard maintenance, snow shovelling, window and eavestrough cleaning, as well as minor repairs to the exterior of the house.

156 While, but for the tort, Mr. MacLean would have been expected to continue with lighter yard maintenance and minor yard repairs it is uncertain, because of his preexisting leg weakness and balance problems, whether he would have continued with the remaining home maintenance tasks. Indeed, the MacLeans began to retain a snow shovelling service about November 1992. Although such is not the case for all but a few of the other future care costs, I think a reduction of 25% would be appropriate.

157 While Mr. MacLean was primarily responsible for home maintenance, Mrs. MacLean did help somewhat, and would expect to continue assisting in the future as well. I assess her contribution at 20%.

158 The plaintiff's rehabilitation expert, Kim Wilson-Wiles, provided for these expenses to age 75 on the assumption that at that age Mr. MacLean would have required assistance with these chores in any event. The defence rehabilitation expert, Sandra Vellone, allowed for them to age 70 only. I think on the evidence of Mr. MacLean 75 would be the more likely age.

159 Accordingly, I assess the home maintenance expenses at 55% of $1,560, or $858, annually, such funding to continue to age 75.

2. Bowel and Bladder Supplies

160 The parties now agree that the annual cost is $1,726.

3. Reacher, Sock Aid and Long Handled Scrub Brush

161 These relatively minor items were not contested, and I assess them at $14, $19, and $5, respectively, requiring replacement respectively every ten years, every seven years, and annually.

4. Housekeeping

162 This claim is for $4,368 annually representing the cost of hiring a housekeeper one day per week for six hours at a rate of $14 per hour. Despite the defence argument to the contrary, I am of the view that this is properly compensable as an extraordinary expense, but, because the MacLeans actually employed a housekeeper from as early as November, 1992, some allowance should be made for the fact that Mr. MacLean's preexisting condition may have been a factor in that decision (although not so much a factor as it was with respect to home maintenance). In my view a deduction of 15% would be appropriate.

163 Mr. and Mrs. MacLean shared the housework equally. A 50% reduction should be made for her share.

164 The defence contends that the rate should be set at $10 per hour, the same as the handyman rate, but I am not persuaded that the $14 rate is anything but realistic. Accordingly, I allow housekeeping services at 35% of $4,368, or $1,529 annually.

5. Transportation

165 Ms. Wilson-Wiles recommended a modification to Mr. MacLean's van to install a lift for his wheelchair, at a cost of $10,000, which would be required by age 65 and which would have to be replaced every seven years. Ms. Vellone agreed that such a modification was appropriate but that such device could be obtained for $6,772. Her evidence was unchallenged. I assess this cost at $6,772 starting at age 65 and to be replaced every seven years.

6. Cellular Phone and CAA Membership

166 These expenses are no more than would be incurred by a prudent traveller with Mr. MacLean's disability. They will provide a source of assistance and comfort in the event of vehicle breakdown. The cost of the cell phone is $200 replaceable every seven years. The membership is $90 per year.

7. Attendant Services for Recreation and Leisure

167 This claim is for the annual cost of $1,750 to be paid to a personal attendant to accompany Mr. MacLean for ten days in his pursuits of hunting and fishing. Defence counsel submits that this and the next two items (exercise equipment and family airfare) should not be characterized as future care costs because, being provision for additional amenities which will improve Mr. MacLean's quality of life, they are more appropriately subsumed within the functional purpose of general non-pecuniary damages.

168 As authority for this argument the defence relies on the decision in Scarf v. Wilson (1986), 39 C.C.L.T. 20 (B.C.S.C.), aff'd (1987), 47 C.C.L.T. 109 (B.C.C.A.) reversed in part, [1989] 2 S.C.R. 776. At trial Cumming J. disallowed the claim for certain weightlifting equipment and for attendant services on vacation. He did so on two grounds. Firstly, he found them unrealistic and secondly, he found that they would be better addressed under the claim for non-pecuniary damages. Interestingly, he did allow the claim for an exercise machine. The only issue dealt with in the Court of Appeal was Cumming J.'s gross up of the award for income tax purposes, on which point it was reversed by the Supreme Court of Canada.

169 I do not consider that Scarf v. Wilson represents the law in Ontario. Unlike a claim for general non-pecuniary damages, which is "a loss incapable of being replaced in any direct way" (see Dickson J. in Andrews v. Grand & Toy Alberta Ltd., supra, at 262), Mr. MacLean's pecuniary claims have a monetary value that relates directly to equipment needs and assistance arising as a direct consequence of his disability. At pages 241 and 242 of Andrews, Dickson J. stated the governing principle:

> In theory a claim for the cost of future care is a pecuniary claim for the amount which may reasonably be expected to be expended in putting the injured party in a position he would have been if he had not sustained the injury ... money is a barren substitute for health and personal happiness, but to the extent within reason that money can be used to sustain or improve the mental or physical health of the injured person it may properly form part of a claim.

170 On this basis I conclude that these items are properly part of future care. I assess the attendant services at $1,750 per year.

8. Exercise Machine

171 Ms. Wilson-Wiles proposed a Moto Med Pico exercise machine at a cost of $9,461. This is a machine which provides both active and passive motion to both upper and lower limbs and is usually reserved for quadriplegics. The Sammons Preston table top hand bike and table with optional foot adaptor costs much less at $1,515 and would be appropriate for Mr. MacLean's strengthening and conditioning. I assess this item at $1,515.

9. Family Airfare

172 An annual cost of $2,746 was claimed for Mr. MacLean's son and his family from Grand Falls, Newfoundland to visit Mr. and Mrs. MacLean in Saskatchewan. This claim was based on the lack of wheelchair accessible accommodation in Grand Falls, where Mr. and Mrs. MacLean were in the habit of paying a yearly visit to his son and his family. However, since Ms. Wilson-Wiles' report was written Mr. MacLean's son and his family had moved to Stephenville, Newfoundland where such accommodation is available. This item is accordingly disallowed.

10. Attendant Care Services

173 It is clear that Mr. MacLean does not require attendant care currently. He has normal function in his upper extremities. However, on the evidence of Dr. David Berbrayer, a specialist in rehabilitation medicine with a special interest in and experience in spinal cord injuries, as well as on the evidence of Dr. Donat, it is equally clear that the situation will change in the future. As Mr. MacLean ages he will decline physiologically. While it is true that having suffered his disability in his late middle years he will have had many less years of wear and tear on his upper limbs compared to those who suffer spinal injuries in their 20s, he will nonetheless find it increasingly more difficult to function as time goes by.

174 With gradual physical decline he will require care. As he ages his mental acuity will also likely decline. Being confined to a wheelchair, chronic pain and increasing reliance on medications will all affect his ability to compensate and function. Even before trial he was experiencing extreme fatigue and lack of energy.

175 He will require assistance in transferring from his bed to wheelchair, bathing, bowel and bladder management, dressing and undressing, meal preparation, and in his exercise programme. There is always a risk that his wife may predecease him or that he may suffer setbacks, such that he would require an attendant earlier than age 70 or for more than four hours a day, but the claim is based on care for four hours a day at age 70. I find this to be perfectly reasonable in the circumstances. The annual cost is $20,440 starting at age 70.

11. Medications

176 Mr. MacLean was taking a number of medications, including morphine for pain (annual cost $1,032), Duvoid for bladder control ($424), antibiotics for treatment of urinary tract infections ($80), Senokot for bowel management ($91.61), and Baclofen for spasticity ($601). Although Duvoid and/or Baclofen may be suspended or stopped from time to time, as they have in the past, similar preparations such as Neurontin and Prinivil are taken. I find the claim reasonable and assess it at $2,229 annually.

12. Morphine Pump

177 It is agreed that the cost of a morphine pump is $7,790 and that it is a necessary expense. The only issue is the frequency of replacement. Ms. Wilson-Wiles researched the replacement period and determined it to be every four years after an initial purchase in 1999. In her report Ms. Vellone agreed with the four-year replacement frequency. Although Dr. Brebrayer felt the period would be somewhat higher, between five and seven years, I prefer to rely on the four-year opinions as being the product of more current research.

13. Professional Services

178 Although there is no suggestion that Mr. MacLean is anything but a well-adjusted individual, not requiring psychological intervention or counselling, or any further assessments or investigations at this time, I find that he would benefit from an annual physiotherapy and occupational therapy evaluation. I find the sum of $500 would be adequate to cover such annual evaluation.

14. Gross-Up

179 At their suggestion, I leave it to counsel to calculate the gross-up for income tax. Again, if they cannot agree, I may be spoken to.

15. The Saskatchewan Government Assistance Programme

180 As at the trial date there was a significant degree of funding for assistive devices in the Province of Saskatchewan through the Saskatchewan Aids to Independent Living (SAIL) Programme and through the Saskatchewan Abilities Council. The items, which have been allowed as future care costs, and for which such funding is currently available, are those indicated by an asterisk on Exhibit 29. The list comprises wheelchair, wheelchair maintenance and repairs, cushions, back support, bowel and bladder supplies, commode, reacher, bath seat, medications and professional services.

181 While no one can predict with any degree of certainty whether the list of funded items will remain constant in the future or whether it will be increased or reduced, and one cannot therefore always rely on future funding, it was Ms. Vellone's opinion that the present funding will continue in view of the stated governmental policy of promoting public health outside of institutional settings.

182 The defendants therefore urge a percentage reduction of the costs of those items presently funded in amount appropriate to the uncertainty of the situation. They suggest a reduction of 50%.

183 Defence counsel point for support to Holder v. The Greater Niagara Hospital et al., October 6, 1997, unreported, (O.C.G.D.) in which MacFarland J. applied a 50% reduction to certain future care costs for the infant plaintiff on account of the likely continuation of funding through the Assistive Devices Programme of Ontario, and to Dube (Litigation Guardian of) v. Penlon Ltd., July 28, 1994, unreported, [1994] O.J. No. 1720 in which Zuber J. applied a similar reduction in respect of items covered by the same programme.

184 Counsel for Mr. MacLean submits that no deduction at all be made, or, at most, that any deduction be a modest one. He argues that under the principle of restitutio in integrum a tort-feasor cannot effectively shirk his responsibility by foisting on the public the duty to provide care for the injured party whose need for care is the consequence of the tort-feasor's negligence.

185 In Holder the infant plaintiff had a life expectancy of less than 5 years. MacFarlands J. stated, at p. 28, that had the child's life expectancy been longer she might have been inclined to proceed as Cunningham J. did in Granger v. Ottawa General Hospital (1996), 7 O.T.C. 81

(O.C.G.D.) when he refused to factor in funding available under the similar Quebec Government Plan, and as Molloy J. did in Dann (Litigation Guardian of) v. Guest, May 30, 1996, reported, [1996] O.J. No. 1912 (O.C.G.D.).

186 It seems to me that if anyone should be forced to run the risks attendant on government funding it should not be the innocent party. Funding under the Assistive Devices Programme is not mandatory; it depends upon the political and social conscience of the government of the day. In days of increasing cutbacks to social spending continuation of existing funding is by no means certain. If the defendants' argument were to prevail and if funding were to be reduced or discontinued all together, it would mean that an innocent party might find himself shouldering his own future care expenses.

187 In Dube, Zuber J. decided that the full costs of subsidized items should not be allowed because the government contribution was not the subject of subrogation. With great respect the decision seems to clash with the same judge's decision made a year before in Stein (Litigation Guardian of) v. Sandwich West (Township), June 30, 1993, unreported, [1993] O.J. No. 1772, in which he had come to the opposite conclusion in much the same circumstances. The Stein decision was upheld by the Ontario Court of Appeal, reported [1995] O.J. No. 423, in which Lacourcière J.A., in delivering the judgment of the court, stated that Zuber J.'s refusal to apply a reduction was justified and that the principle of restitutio in integrum was a complete answer to the suggestion that the injured party was recovering a windfall or that there was any double recovery involved.

188 For those reasons I decline the invitation to factor in a reduction on account of government funding.

VI. CLAIMS OF IRENE MACLEAN

1. Family Law Act

189 Mrs. MacLeans' life has undergone a great upheaval because of her husband's disability. She has been obliged to assume many responsibilities which had previously had been his or shared. Accustomed in the past to an equal division of household duties, she now had to take over almost sole care and management of the household. She has devoted much of her time to attending to Mr. MacLean's needs and to providing him with care and assistance, comfort and support. Their lives now seem to be marked by a series of crises of some kind or other.

190 Their social life has been reduced significantly. Many activities are now denied to them because of wheelchair inaccessibility. I assess her claim for the loss of guidance, care and companionship at $45,000.

2. Claim for Past Income Loss

191 By agreement of the parties I assess her past income loss at $10,000.

3. Claim for Future Income Loss

192 The plaintiffs' accountant, Gordon Krofchick, quantified the plaintiff's economic loss. He estimated Mrs. MacLean's future loss at $17,014, on the basis of 20 working hours lost annually (based on the average from 1996 and 1997) at an hourly rate of $140 (her 1998 rate) less assumed direct expenses at 50%, for an annual loss of $1,400 multiplied by a PV factor of 12.153 (date of birth February 27, 1943) assuming a 2.5% discount rate not adjusted for mortality and also assuming a retirement age of 70.

193 There are two difficulties with this calculation. Firstly, there is no evidentiary basis for the assumption that she will not retire until age 70. Secondly, it presupposes that each hour lost from the office will necessarily be a billable hour. I think that a more realistic figure for her future loss is $10,000 and I assess it at that figure accordingly.

VII. FAMILY LAW CLAIM OF COLIN B. MACLEAN

194 Colin MacLean did not testify. He lives in Newfoundland with his wife and children and sees his father and his stepmother just once a year. There is no evidentiary justification for an award in his favour. Indeed, although such a claim was pleaded, it was not referred to in argument, and I disallow it.

VIII. CONCLUSION

195 There should be judgment accordingly in favour of the MacLeans against Dr. Willinsky, but otherwise the action should be dismissed. If counsel are unable to agree on the calculations, the form of judgment, costs, or prejudgment interests, I may be spoken to.

DILKS J.

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