Supreme Court of New South Wales - Court of Appeal Decisions

Ambulance Service of NSW v Worley [2006] NSWCA 102 (3 May 2006)

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NEW SOUTH WALES COURT OF APPEAL

CITATION: Ambulance Service of NSW v Worley [2006] NSWCA 102

FILE NUMBER(S):
40113/05

HEARING DATE(S): 10/04/06-12/04/06

DECISION DATE: 03/05/2006

PARTIES:
Ambulance Service of New South Wales - Appellant
Stephen Paul Worley - Respondent

JUDGMENT OF: Tobias JA McColl JA Basten JA

LOWER COURT JURISDICTION: Supreme Court

LOWER COURT FILE NUMBER(S): SC 20456 of 2001

LOWER COURT JUDICIAL OFFICER: Barr J

COUNSEL:
P. Garling SC/M. Windsor - Appellant
D.J. Russell SC/P.S. Jones - Respondent

SOLICITORS:
Frances Allpress, General Insurance Law Department - Appellant
Forners - Respondent

CATCHWORDS:

NEGLIGENCE – duty of care owed by paramedic to patient - postman stung by bee developed allergic reaction and suffered severe shock – paramedic administered adrenaline intravenously – whether paramedic following protocol – whether open to paramedic to administer adrenaline intramuscularly – whether patient 'in extremis' - whether dosage too high or too frequent – whether failure to monitor patient properly – whether Ambulance Service vicariously liable
NEGLIGENCE – duty of care owed by Ambulance Service to patient – standard of care in preparing and promulgating protocol to be followed by paramedics – whether Ambulance Service exercised due care in preparing protocol – whether protocol should have provided for the administration of adrenaline intramuscularly where patient not on the point of death - whether scientific evidence supported the view that a change to the protocol was reasonably required
DAMAGES – consideration of Safety, Rehabilitation and Compensation Act 1988 (Cth) – whether amount paid under that Act arose out of the bee sting, rather than the intracranial haemorrhage – whether injury identified as bee sting involved a valid determination under s14 of the Act – Griffiths v Kerkemeyer damages – past gratuitous services - whether award was appropriate – funds management – whether need for such assistance itself flowed from tortious conduct

LEGISLATION CITED:
Ambulance Services Act 1990 (NSW), s4, s26
Civil Liability Act 2002 (NSW), ss5O, 5P
Crown Proceedings Act 1988 (NSW), s5
Law Reform (Vicarious Liability) Act 1983 (NSW), s10
Safety, Rehabilitation and Compensation Act 1988 (Cth), s5, s14, s24, s48, s54, s62, s64, s68, s74

DECISION:
(1) Appeal allowed
(2) Judgment of trial judge set aside and in lieu thereof order that judgment be entered for the defendant
(3) Order that the Respondent pay the costs of the Appellant of the appeal and in the Court below
(4) Grant the Respondent a certificate under the Suitors' Fund Act 1951 (NSW)

JUDGMENT:

IN THE SUPREME COURT
OF NEW SOUTH WALES
COURT OF APPEAL

CA 40113/05

SC 20456/01

TOBIAS JA

McCOLL JA

BASTEN JA

3 May 2006

AMBULANCE SERVICE OF NEW SOUTH WALES v STEPHEN PAUL WORLEY

The Ambulance Service of New South Wales appealed against a decision of the Supreme Court awarding damages to Mr Worley, who while working as a postman was stung by a bee and suffered an allergic reaction. The treating paramedics diagnosed Mr Worley with anaphylaxis and noted the symptoms of severe shock, which appeared to engage the protocol for the administration of adrenaline intravenously. The officer did so which caused Mr Worley to develop an intracranial haemorrhage. As a result he suffers from right-sided hemiplegia and associated physical difficulties.

The Supreme Court held that the paramedic was negligent in intravenously administering the adrenaline. The Ambulance Service was held vicariously liable.

The issues for determination by the Court of Appeal included:

(i) whether the paramedic was negligent in administering the adrenaline intravenously when Mr Worley was not on the point of death; and
(ii) whether the Ambulance Service was negligent in the preparation and promulgation of the relevant protocol on the basis that
(a) the protocol was unclear and confusing resulting in its application in unsuitable circumstances; or

(b) it should have provided for intramuscular administration of adrenaline to patients who were not on the point of death.

Held in relation to (i):

By Basten JA (Tobias JA and McColl JA agreeing):

The paramedic was not negligent in intravenously administering the adrenaline. Though he may have understood the protocol to mean that intravenous injection of adrenaline was required in cases of severe shock, the understanding was not negligent. Such an interpretation was open on the reading of the protocol. 'Nice judgement' as to whether and when the patient was at the point of death is unlikely to be required of a paramedic

faced with a severe case of anaphylaxis by the protocol. The evidence supported the conclusion that the paramedic did not act unreasonably in his understanding and application of the protocol: at [73]-[89].

Rogers v Whitaker [1992] HCA 58; (1992) 175 CLR 479 applied. *Florida Hotels Pty Ltd v Mayo [1965] HCA 26;* (1965) 113 CLR 588, *Sidaway v Governors of Bethlem Royal Hospital [1985] UKHL 1;* [1985] AC 871 and *Albrighton v Royal Prince Alfred Hospital* [1980] 2 NSWLR 542 referred to.

Held in relation to (ii):

By Basten JA (Tobias JA and McColl JA agreeing):

1. The claim that the protocol was unclear was not sufficiently pleaded or proved to support a finding of negligence: at [94]
2. The evidence did not demonstrate that the Ambulance Service failed to exercise due care in its preparation of the protocol. It was not established that its Medical Advisory Committee did not have available up-to-date information, nor was it established that they did not take into account that which was available regarding the use of intramuscular versus intravenous injection of adrenaline. Scientific evidence did not support the view that a change was reasonably required, nor did it support a finding that the Medical Advisory Committee was negligent in maintaining the protocol permitting the use of intravenous adrenaline for the specified indications in October 1998: at [133].

3. The evidence did not establish that the dosage and rate at which adrenaline was administered was unreasonable nor that the level of monitoring was not reasonably appropriate: at [145]–[148].

IN THE SUPREME COURT
OF NEW SOUTH WALES
COURT OF APPEAL

CA 40113/05

SC 20456/01

TOBIAS JA

McCOLL JA

BASTEN JA

3 May 2006

AMBULANCE SERVICE OF NEW SOUTH WALES v STEPHEN PAUL WORLEY

Judgment

1 **TOBIAS JA**: I agree with Basten JA.

2 **McCOLL JA**: I agree with Basten JA.

3 **BASTEN JA**: Mr Stephen Worley (the Respondent to the appeal and the plaintiff in the Court below) worked for Australia Post delivering mail. On 7 October 1998 he was stung by a bee at the base of his neck, whilst delivering mail at Quakers Hill, Sydney. He had an allergic reaction which led him to return on his motorcycle to the mail delivery centre at Glendenning, where he was based. He spoke to the manager of the centre who took him to the first aid room and telephone the Ambulance Service of New South Wales ("the Ambulance Service").

4 An ambulance with two officers arrived shortly thereafter and the treating officer diagnosed anaphylaxis, noted symptoms which appeared to engage the protocol for the administration of adrenaline intravenously and proceeded to administer 4 millilitres (mls), in 1ml doses 30 seconds apart. Each dose contained 0.1 milligram (mg) of adrenaline.

5 At some stage during or immediately after the treatment, Mr Worley suffered an intracranial haemorrhage and, as a result, suffers from right-sided hemiplegia and associated physical difficulties.

6 At trial, Mr Worley claimed that the Ambulance Service of New South Wales was liable for his condition, broadly speaking on two bases, namely:

(a) negligence on the part of the treating officer in administering intravenous ("IV") adrenaline, and
(b) negligence on the part of the Ambulance Service, (a statutory corporation) in preparing and promulgating a protocol which permitted treatment involving an unacceptable level of risk of severe adverse consequences.

7 The Ambulance Service denied liability and further alleged contributory negligence on the part of Mr Worley, in failing to obtain treatment to desensitize his allergic reaction to bee stings, in circumstances where he had been stung on four previous occasions, with increasing symptoms of allergic reaction.

8 The trial judge upheld the plaintiff's claim, finding negligence on the part of the treating ambulance officer, and rejected the defence of contributory negligence. He order that judgment be entered for Mr Worley in the sum of $2,628,032.57, of which an amount of some $266,000 was said to be repayable to the relevant Commonwealth authority on account of expenses and compensation for incapacity in respect of a

workplace injury: see *Worley v The Ambulance Service of New South Wales* [2004] NSWSC 1269.

9 The notice of appeal challenged the findings of the trial judge in relation to liability and, in addition, aspects of his Honour's assessment of damages. Mr Worley filed a notice of contention seeking to uphold the judgment below with respect to liability on grounds relating to the protocol, as to which the trial judge had made no finding, because he had found negligence on the part of the treating officer.

10 The issues raised will be identified and addressed in the following manner:

(1) The claim pleaded [11];
(2) The theory of the case [19];
(3) Principles of liability [29];
(4) Background [41];
(5) The Ambulance Service protocols [52];
(6) Was the ambulance officer negligent? [60]
(7) Negligent protocols: lack of clarity [89];
(8) Negligence in preparation of protocols: introduction [95];
(9) Content of protocols: IM administration [102]
(10) Content of protocols: dose, rate of administration and monitoring [134];
(11) Protocols: conclusions [150];
(12) A global approach: unacceptable treatment [151];
(13) Damages [156];
(14) Orders [185].

The claim pleaded

11 In order to understand the manner in which questions of liability were dealt with by the trial judge, it is necessary to take account of the way the plaintiff pleaded his case and the way in which the trial was conducted.

12 Proceedings were commenced by way of statement of claim filed on 28 May 2001. Although particulars of injuries and loss were later provided, the statement of claim was not amended or otherwise particularised.

13 The first aspect of the claim to be noted is that the proceeding was brought against the Ambulance Service, rather than the State. The State might properly have been sued, as the Ambulance Service, established under the *Ambulance Services Act* 1990 (NSW) was said to be a corporation representing the Crown: s 4. Suit might thus have been brought against the State pursuant to s 5(2) of the *Crown Proceedings Act* 1988 (NSW). Secondly, the injury, loss and damage are pleaded to have resulted from the administration of 0.4 mg of adrenaline intravenously: pars 7 and 8. The cause of action was pleaded in paragraph 9, which, in whole, reads as follows:

"9. The said injury, loss and damage were caused by the negligence/breach of duty of the Defendant through its employees, servants and/or agents.

PARTICULARS

(i) Failing to administer the adrenaline to the Plaintiff intramuscularly.

(ii) Failing to administer the adrenaline to the Plaintiff subcutaneously.

(iii) Failing to ensure that the adrenaline administered to the Plaintiff was not administered too rapidly having regard to the Plaintiff's condition.

(iv) Failing to ensure that excessive amounts of adrenaline were not administered to the Plaintiff having regard to his condition.

(v) Failing to follow widely accepted practices in the administration of adrenaline for the treatment of anaphylaxis.

(vi) Failing to follow accepted and recommended medical and pharmacological practice in the administration of adrenaline.

(vii) Failing to ensure that the treatment protocol followed and adopted recommended and accepted medical and pharmacological practice for the administration of adrenaline.

(viii) Failing to monitor or correctly monitor the condition of the Plaintiff.

(ix) Failing to carry out any proper assessment of the condition of the Plaintiff.

(x) Failing to rely upon medical advice.
(xi) *Res ipsa loquitur*."

14 At some stage, and certainly by the time judgment was reached below, the last two particulars had been effectively abandoned and no reliance was placed on par (ii), concerning subcutaneous administration of adrenaline: see [103] below.

15 Three other points should be noted in relation to the pleading: first, there was no assertion that adrenaline should not have been administered and, secondly, apart from particular (vii), referring to the "treatment protocol", each of the particulars appears to have related to the conduct of the ambulance officer who carried out the treatment.

16 With respect to the complaint of failure to assess (particular (ix)), the content was unclear from the pleading and from the manner in which the case was presented. However, it resurfaced in the second amended notice of contention as a failure of the protocol to provide for a regime of adequate assessment of the patient's response to each dose of adrenaline. This was in substance a complaint of failure to monitor blood pressure, and it may be assumed that this was the intended thrust of the particular.

17 It will be necessary to address the factual circumstances in more detail below, but it is convenient to note at this stage that there were two officers who accompanied the ambulance to the mail delivery centre, namely Mr Page and Mr Parsell. Mr Page was the treating officer, but unfortunately he had died prior to the trial. Mr Parsell, who was an acting district officer by time of the trial, was able to give evidence as to some of the steps taken by his colleague, but he was also carrying out his own duties, which included being absent from the first aid room for a short period, in order to bring the stretcher from the ambulance.

18 The primary issue in dispute was whether, in October 1998, it was negligent to permit a paramedic to administer adrenaline intravenously to a patient suffering an anaphylactic reaction, unless the patient was on the point of death. In the alternative, the plaintiff argued that IV adrenaline was only indicated for a patient in severe shock and, although his blood pressure measured 78mm/Hg systolic, he had not been in severe shock. Finally he claimed that if IV adrenaline was indicated, it was nevertheless administered too fast or in too great a dose, and without proper monitoring of his blood pressure during its administration.

The theory of the case

19 The pleading set out above is deficient in two significant respects. First, in relation to the conduct of Mr Page, the treating ambulance officer, the particulars are silent as to whether his negligence arose from a failure to follow the relevant treatment protocols, or arose despite following the protocols. In the event, this deficiency may be put to one side. For reasons discussed below, it should be accepted that Mr Page followed the protocols, upon an understanding of their import which was reasonable, and was acting in accordance with the directions of the Ambulance Service in so doing. There was no breach of any duty of care on his part in this respect.

20 The second area of deficiency in the pleading was more significant and gave rise to a lack of clarity as to the alternative base upon which the case was run. As noted above, the only particular which directly complained of the "treatment protocol" was particular (vii) which asserted that the Ambulance Service failed to ensure that the protocol followed and adopted "recommended and accepted medical and pharmacological practice for the administration of adrenaline". This particular obviously had nothing to do with Mr Page: on no view of the evidence did he have any responsibility for the content of the protocols. However, the particular was buried amongst ten other particulars which are formulated in terms which appear to apply directly only to the conduct of the treating ambulance officer. The pleading did not identify any aspect of the conduct of the Ambulance Service as demonstrating direct (rather than vicarious) negligence, nor as to vicarious liability, liability for any particular officer or employee. Indeed, it did not refer to any specific aspect of the process by which the protocols were adopted and maintained. It did not state that the adoption by the Ambulance Service of the key protocol in 1994 was negligent nor that maintaining the protocol in October 1998 had at some point become negligent, and if so, when and why.

21 Further, the complaint in relation to the treatment protocols failed to specify the respects in which the protocols were deficient. The reader was left to infer that the complaint was to be identified by comparing the terms of the relevant protocols with the complaints addressed in the other particulars. In other words, one should infer that a complaint as to the failure to administer adrenaline intramuscularly ("IM"), should be read, at least in part, as a complaint that the protocol failed to provide for that route of treatment.

22 As will appear below, the deficiencies in the pleadings, including the failure to distinguish between claims of direct breach of duty on the part of the Ambulance Service and breaches of duty by its officers for which it was vicariously liable, resulted in the absence of any clear structure to the way the evidence was adduced and linked to a particular breach of duty. For example, there was voluminous evidence as to what might be identified as accepted or recommended medical or pharmacological practice, but very little attempt to show how that material should be reduced to a protocol capable of proper application by an ambulance officer in the field.

23 Another reason for the focus on the conduct of the treating officer may, as senior counsel for the Appellant noted in the course of argument, have been encouraged by the separate reliance in the statement of claim on a contract said to have arisen between the plaintiff and the Ambulance Service, into which was to be implied a term requiring that the plaintiff would be treated in accordance with "accepted medical and pharmacological practice". It was not suggested in the appeal that any different duty or standard of care arose from this alternative legal source: it was rather the tendency to which the alternative claim gave rise, namely a specific focus on the nature of the treatment divorced from the specific duty owed by the treating officer, which coloured the proceedings at trial.

24 Counsel for Mr Worley sought to take succour from this emphasis, arguing that the negligence in preparation of the protocols only crystallized into a cause of action upon the treatment being administered to the plaintiff. However, for reasons noted below, that approach tends to compound the error.

25 Understandably, given the way the case was presented to him, the trial judge gave little attention to the claim that the treatment protocols involved a breach of a duty of care and made no express finding in relation to that element of the case. When the Ambulance Service appealed against the finding that Mr Page was negligent, the plaintiff filed two notices of contention. At the appeal, the contentions primarily relied upon were two identified in the amended notice of contention which read as follows:

"1. His Honour should have found that the appellant was negligent in failing to have in place as at 7 October 1998 a protocol which made it clear to all ambulance officers that IV adrenaline was only to be administered if the patient was at the point of death.
2. His Honour should have found that the appellant was negligent in failing to have in place as at 7 October 1998 a protocol which required the use of IM adrenaline for patients who are not in such a state that they required IV adrenaline."

26 During the hearing of the appeal, counsel for Mr Worley sought to rely on the proposition that particulars (iii) and (iv), namely that the adrenaline was administered too rapidly and in an excessive amount, were to be understood as complaints about the protocol and were complaints which did not require a notice of contention, because the trial judge had made factual findings in the plaintiff's favour. This position was ultimately abandoned and, on the third morning of the appeal, a second amended notice of contention was presented with additional matters identified in the following terms:

"1A His Honour should have found that the Appellant was negligent in failing to have in place as at 7 October 1998 a protocol which restricted the administration of IV adrenaline to only those patients who were at the point of death.
...
2A His Honour should have found that the Appellant was negligent in failing to have in place as at 7 October 1998 a protocol:

(a) Which provided for a lower dose/rate of administration of adrenaline intravenously, than was provided for in Protocol 201 then current;

(b) Which provided for the monitoring of vital signs, including blood pressure, between each dose of adrenaline;

(c) Which provided for taking account of the patient's response to each dose of adrenaline."

27 Counsel for Mr Worley sought to rely in support of those contentions on findings of fact made by the trial judge. The Court was pressed with the obligation not to interfere with such findings in circumstances where the trial judge had had the opportunity, not available to this Court, to hear and consider in detail the evidence from the witnesses: reliance was placed on *Fox v Percy [2003] HCA 22;* (2003) 214 CLR 118 at [23]. This principle extended, it was submitted, to the trial judge's assessment and acceptance of the expert witnesses, reliance being placed on the judgment of this Court in *Ahmedi v Ahmedi* (1991) 23 NSWLR 288 at 299 (Clarke JA, Kirby P and Handley JA agreeing). It is unnecessary in this case to deal with the scope and operation of that principle in relation to expert evidence. As explained by Mahoney JA in *X & Y (by her Tutor X) v PAL* (1991) 23 NSWLR 26 at 31-33, it may be important to consider the specific issue addressed by the experts. As his Honour noted at 33G, in relation to evidence of a causal connection between a particular condition and a consequence:

"That evidence was based to a significant extent upon the clinical experience of the medical witnesses and, in general, they adhered to the conclusions which they had drawn from that experience. In cases of that kind the expert's conclusion may not be able to be demonstrated by syllogistic reasoning but may depend, to a greater or lesser extent, upon 'feel' or 'judgment'."

28 The principle of restraint may apply differently in circumstances where the question is not one of causation, but of assessing the standard of care to be applied. However, and in

any event, the principle of restraint is only relevant where the trial judge has asked and answered the correct question. As will be seen below, the question whether the Ambulance Service was negligent in the preparation of and adherence to the relevant protocols in force as at October 1998 should primarily have been addressed on the basis of medical and scientific publications available at that time, on which it was reasonable for the Ambulance Service to act. To take but one illustration, his Honour noted the evidence of a number of doctors that blood pressure should have been monitored between the administration of aliquots. He noted Dr Sutherland's disagreement with that requirement and stated at [241]:

"I disregard that opinion and prefer the opinions of the other experts I have mentioned."

However, in determining the relevant standard of care, the question was not simply whether one opinion should be preferred and another disregarded, but whether the alternative view was unreasonable, in the sense that the Ambulance Service could not reasonably have adopted such a view in formulating the protocol.

Principles of liability

29 Ambulance officers are not medical practitioners, let alone specialists in emergency medicine. Their training is by no means insignificant, but it does not equip them with the theoretical knowledge which would permit a fine evaluation of alternative treatments. In a case such as the present, their two functions were to stabilize the condition of a patient, so far as their skills and resources permitted, and to ensure his speedy transfer to an available hospital. There was no complaint in relation to their performance of the transfer function.

30 Perhaps surprisingly, and not including the treating medical practitioners, each party at trial called five medical specialists, whose evidence was directed mainly to the question as to what was accepted medical and pharmacological practice in relation to the administration of adrenaline in 1998. Without objection, experts in emergency medicine discussed their own practices in well-equipped teaching hospitals, with far less attention being given to the position of ambulance officers and the nature and purpose of the protocols which governed their conduct. The trial judge was asked to make findings as to what was accepted medical practice, which he did. He does not appear to have been asked to address the question 'was the Ambulance Service negligent, in 1998, in formulating a protocol for the treatment of anaphylaxis in the field, which provided for the administration of IV adrenaline where specified indications were present?' Nor did he provide an answer, expressed in those terms.

31 Indeed, senior counsel for Mr Worley took the matter to a higher level of abstraction than the mere identification of accepted medical practice in 1998. For example, he sought to rely upon evidence given by Dr John Raftos, a specialist in emergency medicine, that he himself had not administered IV adrenaline since 1981, when a patient he was so treating had suffered a cardiac arrest. Dr Raftos expressed the view that IM adrenaline was equally efficacious. However, as will be noted below, Dr Raftos was adamant that

there were two schools of thought in the medical profession in 1998 on this question and that his own staff used IV adrenaline, a course of conduct which he did not consider inappropriate.

32 Reliance on this evidence to establish a standard of care in formulating a protocol is problematic. It requires an application of the principles discussed in *Rogers v Whitaker* *[1992] HCA 58;* (1992) 175 CLR 479 at 486-487, beyond the formulation of the standard required of the duty to warn of material risks, in a quite different area, namely the appropriate treatment for a person suffering an identified level of anaphylactic reaction. On the other hand it is true that the joint judgment in *Rogers* did not limit its statement of principle to the duty of disclosure. Rather, having identified the relevant standard as that of the "ordinary skilled person exercising and professing to have that special skill", their Honours continued (at 487):

"But, that standard is not determined solely or even primarily by reference to the practice followed or supported by a responsible body of opinion in the relevant profession or trade. Even in the sphere of diagnosis and treatment, the heartland of the skilled medical practitioner, the *Bolam* principle has not always been applied."

33 The *Bolam* principle, there discussed, was expressed earlier in the judgment by reference to a passage in the opinion of Lord Scarman in *Sidaway v Governors of Bethlem Royal Hospital* *[1985] UKHL 1;* [1985] AC 871 at 881 in the following terms:

"The *Bolam* principle may be formulated as a rule that a doctor is not negligent if he acts in accordance with a practice accepted at the time as proper by a responsible body of medical opinion even though other doctors adopt a different practice. In short, the law imposes the duty of care: but the standard of care is a matter of medical judgment."

34 For the proposition that the standard is not determined "solely or even primarily" by reference to accepted practice in the particular profession or trade, reference was made to the judgments of Barwick CJ and Windeyer J in *Florida Hotels Pty Ltd v Mayo* *[1965] HCA 26;* (1965) 113 CLR 588, a case involving a breach of the duty of an architect to supervise construction work. However, the breach of duty in that case was concerned with the extent to which an architect could rely upon the assurance of a foreman as to when concrete was to be poured, and as to whether standard periodic inspections were sufficient to ensure that directions were followed. What was reasonably to be expected of the architect did not depend upon any esoteric scientific principles or experience, but merely a standard practice.

35 In *Rogers*, in relation to the comment about "the sphere of diagnosis and treatment", reference was made to *Albrighton v Royal Prince Alfred Hospital* [1980] 2 NSWLR 542 at 562-563. That case involved a girl whose spinal deformity was sought to be corrected by straightening and lengthening her spine by halo-pelvic traction. There was an indication that her spinal cord was tethered in such a way that traction could result in the cord being severed with resultant paraplegia. That happened and the treating specialist and hospital were sued in negligence. The trial resulted in a directed verdict for the

defendants, which was overturned on appeal. One question which arose on the appeal, was whether the trial judge had been correct in excluding the expert testimony of an English practitioner who had not practised in Australia. *Bolam* was not cited in the judgment, but the principle lay at the heart of this aspect of the defendant's case and was rejected by Reynolds JA in a passage at pp 562-563 relied on by the High Court in *Rogers* at 487 (fn 34). His Honour concluded at p 563C:

"Though evidence of local practice is admissible as to whether what was done constituted negligence, local practice provides no basis for the exclusion of evidence by experts lacking local experience as to the correct way in which a particular treatment should be performed, or whether a particular treatment should be given at all."

36 To say that the reasonableness of diagnosis and treatment in a particular case is not to be determined solely or even primarily by reference to accepted practice may tend to mislead, unless the phrase "accepted practice" is further analysed. The principle that accepted practice is not determinative of a standard may be accepted. The parties are entitled to call evidence as to the basis of accepted practice and as to developments in medical science which may call that practice into question. Thus, a distinction may need to be drawn between the medical science which underpins a practice and the practice itself. Medical science will, in many cases, be the primary point of reference in determining the appropriate standard: see *Rogers*, 175 CLR at 492-493 (Gaudron J). The role for "simple common sense", to which her Honour referred at p 493, may be different in relation to questions of causation from its role in relation to the duty of care. Common sense may be coloured by specialist knowledge and experience. It is necessary for a person without medical training to guard against an opinionated judgment which flies in the face of expert opinion, even where the expert is unable to articulate with precision the basis for his or her conclusions.

37 Indeed, as counsel for the Appellant pointed out in the course of argument, it would be wrong to read too much into the dictum with respect to diagnosis and treatment set out at [32] above. In a passage at p 489, dealing with breach of the requisite standard of care, the joint judgment in *Rogers* noted that there is "a fundamental difference between, on the one hand, diagnosis and treatment and, on the other hand, the provision of advice or information to a patient". Their Honours continued:

"*Whether* a medical practitioner carries out a particular form of treatment in accordance with the appropriate standard of care is a question in the resolution of which responsible professional opinion will have an influential, often a decisive, role to play; *whether* the patient has been given all the relevant information to choose between undergoing or not undergoing the treatment is a question of a different order. Generally speaking, it is not a question the answer to which depends upon medical standards or practices." (Emphasis in original.)

38 Why professional opinion should be influential or decisive in relation to compliance with the standard, but not in terms of identifying the standard, is not entirely clear. However, nothing turns on that for present purposes. In *D'Orta-Ekenaike v Victoria*

Legal Aid [2005] HCA 12; (2005) 79 ALJR 755 at [189], McHugh J rejected the proposition that the advocate's immunity could be justified on the basis that it was distinguishable from the burden which liability for negligence might impose on a medical practitioner. His Honour noted:

"Competing demands, matters of fine judgment with heavy potential consequences, unexpected outcomes and new information at a crucial moment, for example, are all features of defences to claims of negligence in medical practice. The *Bolam* test of professional liability, which has now been adopted in most Australian jurisdictions by statute, is intended to preclude judges and legal practitioners imposing their own views as to what is negligent practice in many professions. This is particularly so in the case of medical practice where lawyers cannot be expected to appreciate the true reality of participation in that profession. If lawyers and judges had such insight, arguably the common law might have adopted immunities, or higher thresholds of negligence in other professions."

39 At least in relation to New South Wales, the reference to the statutory imposition of the *Bolam* test, or at least a variety of it, is contained in ss 5O and 5P of the *Civil Liability Act* 2002 (NSW). Those provisions maintain the dichotomy suggested in *Rogers* between a breach of duty to give a warning or other information, and other forms of professional negligence: the *Bolam* principle (in its statutory form) applies only to the latter. The *Civil Liability Act* does not, it should be noted, apply to the present case. However, the broader point made by McHugh J as to the nature of the exercise to be undertaken by the Court in assessing negligence by other professionals, is relevant.

40 In the present case, as counsel for Mr Worley emphasised, although the cumulative experience and knowledge of 10 experts could identify only one case of intracranial haemorrhage caused by the administration of the intended doses of adrenaline, all accepted that such a haemorrhage was a risk of intravenous administration of adrenaline and could identify the scientific bases of the risk. Thus, the trial judge was entitled to accept, as a matter of causation, that the administration of adrenaline caused or materially contributed to the intracranial haemorrhage. Where there is an accepted risk, which materialises, the courts have been willing to accept causation for legal purposes, despite the lack of scientific clarity as to the relationship between the two events.

Background

41 Before considering the specific complaints raised by the notice of appeal and the responses noted by the notice of contention, it is necessary to provide some further factual background.

42 Whilst delivering mail on a motorcycle, on 7 October 1998, Mr Worley suffered a bee sting at a time between approximately 11 and 11.30am. He saw the bee before it stung him and he grabbed and killed it. There was no doubt that he suffered a bee sting. As has been noted, he had been stung on four previous occasions over the preceding six years

with increasing allergic reactions. His response on this occasion was to rest and drink water. Looking in his rear vision mirror, he noted that his neck was starting to redder and he decided to go back to the mail delivery centre. The trip took him approximately 20 minutes. On the trip back, he spoke with another mail delivery officer, Ms Julie Ferguson. Mr Worley asked her if she would ride back with him, and told her he had been stung by a bee. She did not return with him, but said "his face was a bit red and flustered, but he didn't seem to be that bad": Tcpt, p 147.

43 On arrival at the mail delivery centre, Mr Worley dismounted from his motorcycle and felt that in doing so he had lost control of his bowels: Tcpt, p 32. Mr Worley said that he found it "a bit hard to breathe" on the trip back, but otherwise negotiated the 5.4 kilometres without anything adverse happening. He agreed that his throat had begun to swell up at that time: Tcpt, p 90. He had a severe pain in his chest by the time he reached the mail delivery centre: Tcpt, p 91.

44 Prior to the arrival of the ambulance, the manager at the mail delivery centre said that Mr Worley was leaning against the wall when he recounted his story of the bee sting and was unsteady in his gait in walking to the first aid room. Further, as noted by the trial judge at [171] and [172]:

"Mr Worley later told his psychiatrist, Dr Robertson, that he was finding it hard to breathe and that he had chest pain and dizziness. He felt groggy and found it hard to walk. He was concerned about losing control of his bowels.
This last symptom was significant, I think. As it turned out, Mr Worley had not defaecated, but his bowels were obviously affected. Moreover it was as he dismounted from his motorcycle at the mail depot that he experienced the sensation of loss of control. Professor Rosen called it an ominous sign. This and the fact, as he told the psychiatrist, that he was finding it hard to walk shows that his symptoms were getting worse. ... His request for water was consistent with a worsening of his condition. The fact that his brain was functioning well does not point to any different conclusion. I accept the evidence of Professor Fisher that the autoregulatory machinery of the body redirects blood flow to the brain in such circumstances, so a patient can be very ill and still employ complex processes of thought and speech."

45 At 12.01pm, the manager of the mail delivery centre rang for an ambulance. The ambulance arrived at 12.17pm. The Ambulance Service records contain the following entry in relation to the condition of Mr Worley:

"Pt [patient] c/o [complained of] feeling itchy/dyspnoeic. Pts face red/swollen. Pt c/o severe pain to neck associated c bite. Audible exp wheeze. Obvious swelling to face. Tongue not swollen. Nil difficulty swallowing. Pt post treatment. Pt c/o severe itching to genitalia."

46 The patient report also noted that, at 12.20, Mr Worley's pulse rate was 100 and his blood pressure was 78 systolic, with a respiration rate of 28 breaths per minute. At 12.21 Mr Page administered 0.4 mg adrenaline IV in four equal parts at 30-second intervals.

The result was indicated as a reduction in dyspnoea and increase in blood pressure. At 12.25 he administered haemacell intravenously, with an improvement in perfusion.

47 By 12.30pm, when Hartmann's solution was administered IV, the pulse rate was down to 80 and the blood pressure up to 90 systolic. The respiration rate was recorded at 24.

48 Mr Worley was conscious throughout this treatment and was sitting on the bed in the first aid room. As Mr Page inserted a cannula in his right hand, Mr Worley made a joke which indicated that he was mentally alert.

49 The ambulance left with Mr Worley at 12.30pm. Mr Page travelled with him in the back of the ambulance, which Mr Parsell drove. Shortly after the trip commenced, Mr Worley complained of a severe pain in his head which caused him to remove the oxygen mask and say "my head feels like it's about to explode": Tcpt, p 38.

50 There is no doubt that at some stage Mr Worley suffered an intracranial haemorrhage, to which the administration of adrenaline IV made a material contribution. His Honour made a finding to that effect at [95]-[96], a finding which, despite some disagreement amongst the medical experts, was clearly open on the evidence. Although the Appellant challenged this finding, the written submissions, which were not explained in oral argument, were confusing as to whether the challenge was to the physical cause of the haemorrhage, or as to the relationship between the haemorrhage and any breach of duty. The real causation issue turns on whether this adverse outcome would have been avoided by an intramuscular administration of adrenaline, a matter addressed below.

51 There is no doubt that the intracranial haemorrhage left Mr Worley with a number of permanent disabilities. These were mainly physical, although they were accompanied by some change in personality and a mild cognitive disability. These matters will be referred to below in relation to the question of damages.

The Ambulance Service protocols

52 Ambulance officers in New South Wales are trained to operate in accordance with protocols which prescribe the appropriate response in relation to the various situations in which officers may encounter in the field. The protocols do not avoid the need for ambulance officers to be trained to diagnose particular conditions. Further, they require officers to assess symptoms. Nevertheless, they give straightforward guidance in relation to diagnosis and assessment of symptoms and prescribe treatment, with limited room for discretionary choice of treatment.

53 In the present case, the Ambulance Service records show that Mr Page acted in accordance with his understanding of two specific protocols, which need to be considered. The first was Protocol 8, entitled "Anaphylactic Reactions". It had two boxes, the first headed "Diagnosis", which read as follows:

DIAGNOSIS
May occur in response to drugs especially antibiotics, X-ray contrast media, certain foodstuffs and insect bites especially bee sting.
May present with:-

Upper airway obstruction due to swollen tongue or laryngeal oedema.

Lower airway obstruction with bronchospasm.

Hypotension.

Bright red skin with sometimes urticaria.

54 Little turned on this aspect of the protocol: Mr Worley reported that he had been stung by a bee and there was no dispute that Mr Page correctly diagnosed him as suffering from an anaphylactic reaction. The term "urticaria" includes hives and other forms of itching weals.

55 The second part of Protocol 8 concerned treatment and read as follows:

TREATMENT
1. **BASIC PROTOCOL 2.**

NASOPHARYNGEAL AIRWAY may be useful if tongue is swollen.

2. **CANNULATE** and administer HARTMANN'S.
3. **ADRENALINE** is indicated if any one of the following are present:-
Upper airway obstruction.
Lower airway obstruction.

The "keys signs" of severe shock except skin is often warm and pink.

4. **IF HYPOVOLAEMIC SHOCK PERSISTS** despite adrenaline follow Protocol 42.
5. **SALBUTAMOL** for mild bronchospasm.
6. **URGENT TRANSPORT**.
Compression Bandage is no longer used for anaphylactic reaction.

56 Mr Worley did not have a swollen tongue and hence the nasopharyngeal airway was not used. Presumably basic Protocol 2 was followed, although nothing was indicated in that respect, nor was it an issue at trial. The other steps were taken. The patient report assessment indicated that the airway was clear, and breathing was present but shallow. It also indicated that circulation was present and that his cheek was pale. Skin temperature was cold and he was vomiting.

57 The key signs of severe shock were identified in a separate Protocol 42, entitled "Hypovolaemia". That protocol identified anaphylaxis as a cause of "relative"

hypovolaemia, involving an increase in the size of the vascular bed known as "vasodilation". The protocol then provided:

THE "KEY SIGNS" OF SEVERE SHOCK:
1. **POOR BRAIN PERFUSION**
Restlessness.
Altered L.O.C.
2. **POOR SKIN PERFUSION**
Cold
Pale
Sweaty
Capillary refill 2 seconds.
With relative hypovolaemia the skin may be warm and pink.
3. **TACHYCARDIA**:
Adult 100.
...
4. **HYPOTENSION**:
Adult 90 systolic.
...

58 Mr Worley satisfied the key signs of severe shock in the sense that he fell within the definition of hypotension, and was on the verge of tachycardia prior to treatment, with a pulse rate of 100. It also seems that he was on the cusp of poor skin perfusion, but not poor brain perfusion. As the medical evidence explained, the tendency of the body, when in shock, to concentrate the available blood supply in the key organs, including the brain, may well give rise to poor skin perfusion, without poor brain perfusion.

59 So far as the indications in Protocol 8 were concerned, it was accepted that the indications for administration of adrenaline were satisfied with respect to Mr Worley's condition. However, it was also necessary to consider the protocol identified as "Pharmacology 201" in relation to the administration of adrenaline. The relevant protocol in this regard was dated 29 April 1997 and indicated at its foot that it had been approved by Dr Tony O'Connell, Chairman, Medical Advisory Committee and by Dr Barbara-Ann Adelstein, Medical Director of the Ambulance Service. The protocol provided separately for dose and administration in relation to adults and children. Leaving aside some introductory matters and the paediatric administration, the protocol read as follows:

USES:
1. Cardiac arrest:

...

2. Bradycardias if pulse rate <50, poorly perfused with B.P. <80 systolic, and unresponsive to Atropine.

3. Cardiogenic shock if pulse rate <150 and poorly perfused with B.P. <80 systolic.

4. Asthma if “in extremis” with decreased L.O.C. [level of consciousness] or minimal air movement.

5. Anaphylaxis with upper or lower airway obstruction or shock with B.P. <90 systolic in adults.

ADVERSE EFFECTS:

1. Tachycardia and arrhythmias due to the BETA 1 effect. In excess it can cause ventricular fibrillation.

2. Severe hypertension due to the ALPHA effect.
3. Tissue necrosis if extravasation from vein occurs.

PREPARATION:
Adrenaline – 1:10,000 solution 1mg per 10ml Min-I-Jet.

DOSE:

ADULT

1. **CARDIAC ARREST:**
10ML OF 1:10,000 ADRENALINE IV as a bolus according to Protocol 15 and Protocol 16.
Repeat every 5 minutes whilst in arrest – there is no maximum dose.
Give twice the IV dose down the endotracheal tube if a vein is not available.

2. **BRADYCARDIA:**
Bolus of **1ML OF 1:10,000 ADRENALINE IV EVERY 30 SECONDS** until pulse rate 50 or B.P. 80 followed by a continuous ADRENALINE INFUSION.

10 ml of 1:10,000 Adrenaline diluted in 90mls Hartmann’s in a burette.

Administer via a paediatric microdrip.
Commence at 30 drops a minute.

Titrate to maintain a pulse rate of 50 or a B.P. of 80 systolic.

3. ***CARDIOGENIC SHOCK:***
ADRENALINE INFUSION

10 ml of 1:10,000 Adrenaline diluted in 90mls Hartmann’s in a burette.

Administer via a Paediatric microdrip.
Commence at 30 drops a minute.

Titrate to maintain a pulse rate of 50 or a B.P. of 80 systolic.

4. **ASTHMA OR ANAPHYLAXIS**
1ML OF 1:10,000 ADRENALINE IV EVERY 30 SECONDS until the patient is no longer “in extremis” or a maximum of 5mls.

Monitor E.C.G. continuously.
Can be repeated every 5 minutes.
Give IM as a bolus if a vein is not available.

60 It may be noted that the indications for use of adrenaline in relation to anaphylaxis in Protocol 8 did not use the term "in extremis", although the indications in relation to asthma did. Consistently, Protocol 201, under the heading "Uses" made the same distinction in paragraphs 4 and 5. The term "in extremis" is also used in Protocol 201 as one of two reasons to stop the administration, under the heading "asthma or anaphylaxis".

Was the ambulance officer negligent?

61 Pursuant to s 26 of the *Ambulance Services Act* 1990 (NSW), Mr Page could not personally have been liable for his own negligence. That section provides:

26 Exculpation from certain liability
An employee of the Ambulance Service or an honorary ambulance officer is not liable for any injury or damage caused by the employee or officer in the carrying out, **in good faith**, of any of the employee's or officer's duties relating to:
(a) the provision of ambulance services, or

(b) the protection of persons from injury or death, whether or not those persons are or were sick or injured.

62 Even though Mr Page could not be held liable (and was not sued) the Ambulance Service could be vicariously liable for a tort committed by him: see *Law Reform (Vicarious Liability) Act* 1983 (NSW), s 10. Although the Ambulance Service itself claimed some sort of immunity at trial, that claim was unsuccessful and was not pursued on appeal.

63 With respect to the role of ambulance officers, his Honour noted at [146] that recruits to the Ambulance Service obtained seven weeks training where they learn the elements of anatomy, physiology, pathophysiology and pharmacology. There follows a nine-month period of training on probation on the job. His Honour continued at [147]:

"Each officer has a set of protocols. Each set is kept up to date. Each officer is required to follow the requirements of the protocols. There is no discretion to do otherwise. Each officer who attends a patient is required to sign a completed Patient Report Form. The form must list by number the protocols that apply."

His Honour said at [149]:
"The protocols use medical terminology. Ambulance officers are taught by medical practitioners and others who use medical terminology. They are expected to know the meaning of medical terms used in the protocols."

64 The trial judge found that Mr Page was negligent at [242]. The reasoning to this conclusion involved two stages. The first asked whether, properly understood, the protocol applied to Mr Worley and held that it did not. The second step asked whether the mode of administration of adrenaline "chosen" by Mr Page was reasonable and answered that it was not.

65 With respect, this reasoning is flawed. Mr Page did not "chose" the mode of administration, or the rate of administration. What he did was to apply Protocols 8 and 201, according to their terms. That course was in accordance with his training and the directions given by the Ambulance Service, as noted in the passage extracted at [59] above. If Mr Page made a mistake, it was in applying the protocols in circumstances where they were not applicable. His Honour held that he did make that error, stating "[t]he evidence showed that he misunderstood them": at [158]. However, at no point did his Honour ask the critical question, namely was Mr Page negligent in misunderstanding the protocols?

66 Had he asked that question, it seems likely that he would have answered it in the negative. Thus at the beginning at [158], his Honour stated:

"The protocols were drafted in a manner likely to confuse the reader. It is unfortunate that they were expressed partly in a language unlikely to be understood by ambulance officers, when a single English expression could have been used to say what was meant. Mr Parsell's evidence about his understanding of the meaning of the Latin term shows that ambulance officers were taught that it meant something different from what the Medical Advisory Committee intended it to mean."

67 The Latin term in question was "in extremis", which appears in Protocol 201, but not in Protocol 8. It will be necessary to turn to his Honour's understanding of the protocols in due course, but for present purposes the question is whether Mr Page's understanding (assuming it to be wrong) was negligent. If in fact the protocol was confusing, was in language which would not readily be understood by ambulance officers and was misunderstood also by Mr Parsell, there is a clear inference that either the drafting of the protocol or the training received by ambulance officers (or both) was deficient. But that conclusion is not easily reconciled with the finding that the conduct of the ambulance officers themselves, in misunderstanding the protocols, was negligent. At [159] his Honour stated:

"Since the protocols permitted the intravenous administration of adrenaline only to patients who were on the point of death and since Mr Worley was not on the point of death, Mr Page treated him in a manner that he was not permitted to employ. Whether he did so because by teaching or otherwise he misunderstood the protocols does not matter."

68 Dealing only with the question of Mr Page's negligence, it is not possible properly to conclude that he was negligent, without answering the question which the trial judge eschewed. For this reason alone, the finding of negligence on the part of Mr Page and hence that basis for vicarious liability of the Ambulance Service, cannot stand.

69 There is, however, a second reason why the finding cannot be accepted. That depends on his Honour's conclusion that the Medical Advisory Committee "intended" the protocol to apply, thus permitting intravenous administration of adrenaline, only to patients who were "on the point of death".

70 Given other evidence accepted by his Honour, that conclusion was at least curious. First, it seems to have been generally accepted that anaphylaxis following a bee sting can be a life-threatening condition. Not all states of anaphylaxis are serious, but the protocol did not require the administration of adrenaline in mild cases. Further, as Professor Malcolm Fisher stated, although there were risks attendant on the administration of IV adrenaline, "[t]here have been more deaths due to anaphylaxis than adrenaline": Tcpt, p 852. Further, as his Honour held at [186], referring to the medical evidence:

"Everybody agrees that for any patient there will come a stage at which only intravenous administration is advisable. Nice judgment may be needed about whether in any particular case that stage has been reached."

71 Despite his acceptance that "nice judgment" may be needed as to what particular stage has been reached in a particular case, his Honour noted the evidence of Professor Fulde that while Mr Worley "was not in extremis" he was "critical and quickly heading towards that state": at [175]. He also noted Professor Fulde's comment that "once a patient crashes you might not be able to save them". He expressed the view that, because Professor Fulde had wrongly assumed that blood pressure had been taken lying down, rather than sitting up and because he assumed that Mr Worley's wheeze had failed to respond to salbutamol, Professor Fulde had exaggerated the seriousness of the condition. Nevertheless, the basis for his Honour's conclusion that "there was no risk that he would soon become in extremis" (at [177]) is unclear. In any event, the correct question was whether the ambulance officers might reasonably have expected his condition to worsen and, being satisfied that IV adrenaline was an option, have reasonably concluded that it was properly indicated, according to the protocols.

72 Given the findings in relation to the expectations of ambulance officers, noted at [63] above, and the symptoms of anaphylaxis (as compared with asthma) it seems inherently unlikely that the protocols were intended to impose on ambulance officers an obligation to determine how close a seriously compromised and deteriorating patient was to death.

73 It is clear that in reaching this conclusion, his Honour took the extensive evidence from highly trained specialists in emergency medicine and other relevant fields in order to judge the reasonableness of the conduct of a Level 4 ambulance officer, albeit with some 23 weeks training, designed to cover every situation likely to be faced by an ambulance officer in the field. This is not a judgment which can properly be made about a person who is said, at [158] to be unlikely to understand the medical term "in extremis". It requires rationalization with the underlying principle on which ambulance officers were required to operate, as stated at [147], namely that officers were required to follow protocols and there was no discretion to do otherwise. Against this background, it would be surprising if a protocol required an ambulance officer, when faced with a moderately

severe case of anaphylaxis, a life-threatening condition, which was likely to deteriorate if not treated, to make the kind of “nice judgment” as to whether and when the patient was at the point of death. Nor was any of this put to Mr McCarthy, the person with responsibility for training ambulance officers and a member of the protocol committee.

74 Central to his Honour’s conclusion as to the operation of the protocol was the finding that the Medical Advisory Committee “intended” that the administration of IV adrenaline was indicated in relation to anaphylaxis only when the patient was on “the point of death”. The reasoning to that conclusion involved three steps. First, although the indications in Protocol 8 did not use the term “in extremis”, and despite the fact that Protocol 201 used the term “in extremis” for asthma but not anaphylaxis, nevertheless the indication that treatment should continue “until the patient is no longer ‘in extremis’ or a maximum of 5mls” should be read as imposing a further constraint on the indications earlier identified with respect to anaphylaxis. The fact that the heading to that section was “Asthma or Anaphylaxis” and that being “in extremis” was a relevant indication in relation to asthma, did not affect its construction.

75 The three indications given for use of adrenaline in Protocol 8 and the three indications for its use given in Protocol 201 in relation to anaphylaxis, can be applied without reading them as subject to the limiting words “in extremis”. This appears to have been the understanding of various medical practitioners, including Dr Rosen and Professor Vinen in his first report, each of them accepting that the protocol was engaged and that Mr Page acted correctly in applying it. This aspect of his Honour’s reasoning process was at least doubtful.

76 **Secondly, his Honour held that the term “in extremis” in medical parlance meant “on the point of death”. However it is not a term with a precise meaning. Even the English translation would seem to involve a level of likelihood of death and an implicit condition, namely absence of appropriate treatment. It presumably does not require fine distinctions to be made between the imminence of death as opposed to permanent brain damage, for example.**

77 The only ambulance officer who gave evidence was Mr Parsell who, by the time of the trial, was the Acting District Officer for the Western Sydney Sector and gave evidence that in the nine and a half years prior to May 2000 (when he took up supervisory duties), he had attended almost 18,000 patients. Mr Parsell was asked to identify the relevant instructions given in the protocols and to explain the process of monitoring the patient using the E.C.G. and monitoring the pulse in the radial artery.

78 Mr Parsell also gave evidence of having attended patients to whom IV adrenaline was administered on numerous occasions: Tcpt, p 797. He was taken in chief to the terms of Protocol 201 and gave this evidence:

“Q. As an ambulance officer, did the expression ‘in extremis’ have some meaning for yourself?
...

A. Yes it did.
Q. Is it contained in a training manual or in a protocol somewhere?
A. It is contained within the protocol that patients who present with those signs as indicated earlier with the upper airway obstruction, lower airway obstruction, systolic blood pressure of less than 90, that patient is compromised, therefore would be classified as being in extremis."

Mr Parsell was cross-examined about his recollections of the day in question, and the accuracy of his memory, but there was no challenge to his understanding of the protocol.

79 The key evidence as to the intended meaning of the protocol was that of Dr Tony O'Connell, who had been the Chairman of the Medical Advisory Committee since 1996. Dr O'Connell was called to give evidence in part about the process by which the protocols were prepared and the reason for including relevant indications in them. The latter evidence was rejected in chief as being expert opinion evidence which should therefore have been dealt with by way of an expert report served before trial: Tcpt, pp 703 and 718. On the other hand, he was allowed to give evidence that the dosage contained in the protocol was "based on the range of doses which were in common use throughout the literature and throughout the practice of the members of the Committee": Tcpt, p 719. He was also asked, without objection, as to the basis for a change in Protocol 201 in September 2001.

80 In cross-examination, he was asked about the need to weigh the potential risks of treatment against the benefits which might be obtained and the risks of failing to treat. He was taken through the indications for use of IV adrenaline and agreed that the word "severe" was expressly used only in relation to shock. The following exchange then took place (Tcpt, pp 736-738):

"Q. So what I am putting to you is simply this. If you read that protocol and follow what it says and you have previously told us that ambulance officers had to follow the protocol, then that led you inevitably to the administration of the adrenaline IV That's right, isn't it?
A. No.
...
There are no other protocols which direct how it should be administered, however, there is a background of education and experience which the officers who would have the competency to administer intravenous adrenaline would have ... .
As we were talking about before, this is a protocol for the lowest common denominator, however, the lowest common denominator for this portion of the protocol is the highest level of ambulance officer, level IV and V, as no other ambulance officer can give the intravenous adrenaline.
...
A. As you said, there are two protocols which are relevant here. One of them is the protocol 8 which refers to the condition, anaphylaxis. The other is the Pharmacology 201 which refers to the pharmacology of adrenaline. In the pharmacology of adrenaline the patients are only given intravenous adrenaline until the patient is no longer in extremis. In

other words, the implication of that is that you have to be in extremis to commence the administration of intravenous adrenaline, so the officers have to follow both protocols and so they only apply the symptoms of upper airway obstruction, lower airway obstruction and the key signs of severe shock for patients who are in extremis.
Q. And if they are not in extremis then they should not administer the adrenaline intravenously?
A. Yes.
Q. Would you agree with me that when you said you set out the protocols to the lowest common denominator, it is not particularly clear that, indeed, that was the direction that these or any ambulance officers should have adopted. Do you agree with that?
A. No.
Q. You don't agree with that?
A. No, I think it's quite clear."

81 The plaintiff sought to rely upon this evidence as indicating the intention of the protocol accepted by his Honour, namely that the Committee intended the protocol to operate only where the patient was "on the point of death". However, that meaning of the term was never put to Dr O'Connell. The only evidence as to his understanding of the Latin phrase occurred in the following uninstructive exchange in cross-examination (Tcpt, p 732):

"Q. So that in a case where someone were in extremis, and I think you know the meaning of that word – is that right?
A. Yes."

82 There are internal indications that Dr O'Connell might have taken a broader view of the phrase than meaning simply "on the point of death". For example, at Tcpt p 733, the following exchange occurred:

"Q. ... If someone were not in the extremis position, you and your Committee would have severe reservations about putting forward a protocol which carried with it potentially catastrophic side-effects?
...
A. It would be a fact which would be taken into account in proposing any protocol. The more in extremis the patient, the more risky therapy would seem appropriate." (Emphasis added.)

83 Apart from adopting a somewhat relative view of the meaning of "in extremis", the 2001 version of Protocol 201, under the heading "Asthma or Anaphylaxis", included the possibility of IM or subcutaneous administration and stated in relation to IV administration:

"If in extremis (signs of severe shock or impending arrest) 1ml of 1:10,000 (100 mcg) ADRENALINE IV every 30 seconds or until patient is no longer in extremis."

It was not put to Dr O'Connell that he meant anything by the term "in extremis" other

than that which appears above in parenthesis, in a protocol which he approved and signed as being approved on 26 September 2001.

84 Reading the whole of Dr O'Connell's evidence, it is difficult to believe that he expected ambulance officers to make "fine judgments" about whether a patient was on the point of death: consistently with the 2001 protocol, he expected officers to act on signs of severe shock or signs of impending cardiac arrest, which were identified in the versions of the relevant protocols extant in 1998. Neither he nor Mr Parsell was cross-examined to suggest any other view. (Mr Parsell was called in the defendant's case, after Dr O'Connell.)

85 The only other person with direct involvement with the Ambulance Service to give evidence in relation to the meaning of the protocols was Mr Graham McCarthy who was, at the time trial, superintendent of the Ambulance Service. He had worked with the Service as an education officer since 1986, a function he continued until 1999 when he took up a management role in relation to clinical education of ambulance officers. Although he was a member of the Protocol Committee in 1998, and gave some evidence as to how it operated, he was not asked any questions in cross-examination in relation to that Committee, to suggest, for example, that it had been negligent in its drafting of or adherence to the relevant protocols. Accordingly, it was not part of the defendant's case that the Protocol Committee had demonstrated relevant negligence.

86 Mr McCarthy was also asked questions in relation to the indications for the use of intravenous adrenaline. He treated the indications as separate bases for the use of adrenaline and not as cumulative. He was asked (Tcpt, p 1090):

"Q. And if you look at the uses of adrenaline at 5 [in Protocol 201] there is no reference there to the patient being in extremis, is there?
A. No, there's not."

He was not cross-examined in relation to that evidence, nor was it suggested to him that the commencement of IV administration in accordance with the protocol needed to be understood by reference to the circumstances in which administration should cease, nor was there a single question put to Mr McCarthy to suggest that the protocol was unclear. This last point was a matter of some significance, given Mr McCarthy's evidence that "the protocol needed to be a practical document, precise, easily read by ambulance officers" (Tcpt, p 1080) and that he was responsible for the training of the ambulance officers, including Messrs Page and Parsell, in their understanding and use of the protocols.

87 Neither Dr O'Connell nor (by inference) Mr Parsell, nor Mr McCarthy thought that the protocols in force in 1998 were unclear. In the absence of any alternative definition being put to Dr O'Connell or to Mr McCarthy or Mr Parsell, it is reasonable to infer that the phrase "in extremis" included, relevantly for an ambulance officer reading the protocol, a person exhibiting the signs of severe shock. The language used, taken with the relevant indications with respect to asthma, no doubt informed the officer's

understanding, as may have his or her training, about which none of the witnesses was cross-examined. To know whether a specialist in emergency medicine would adopt the same language when considering a person in the intensive care unit of a major teaching hospital, or have the same understanding of the protocol was of little direct assistance.

88 Having identified the need for "nice judgment", the trial judge then proceeded to consider whether Mr Page got the judgment right. He concluded at [242]:

"In my opinion Mr Page administered too much adrenaline far too fast and without any regard for the consequences."

Given that there was no question but that Mr Page administered the adrenaline strictly in accordance with the dosage and other specific requirements prescribed by Protocol 201, these findings of his Honour constituted a criticism of the protocol rather than of the conduct of Mr Page. In particular, to suggest that Mr Page administered the adrenaline "without any regard to the consequences" could be understood or, perhaps, misunderstood, as a slur on Mr Page's professionalism which was without foundation and which found no support in the evidence.

89 Although it may be accepted that Mr Worley was not on the point of death when IV adrenaline was administered by Mr Page, on the other hand, he was suffering from a potentially life-threatening condition which had advanced to a level of moderate severity; he was exhibiting signs of severe shock as identified in Protocol 42: see [57] above. Mr Parsell thought the protocols were engaged and, one should infer that Mr Page did too. Various medical specialists (including Drs Rosen, Fisher, Fulde and Raftos) took a similar view. The appropriate conclusion is that Mr Page had not been shown to have acted unreasonably in his understanding and application of the protocols. Absent a finding that he had acted without reasonable care in those respects, there was no basis for concluding that he did not demonstrate and apply the skills expected of an ambulance officer, Level V, qualified to administer intravenous adrenaline.

Negligent protocols: lack of clarity

90 If Mr Page was not negligent, the second way in which the Ambulance Service could have been liable for negligence was if it, through its relevant officers, had been negligent in the preparation and promulgation of the relevant protocols. This matter was the subject of the notice of contention, as originally filed, which had two limbs. The first limb asserted that the protocols were "unclear and therefore confusing", resulting in their application in circumstances to which they did not apply. The evidence in relation to this matter has been dealt with above in considering whether Mr Page was negligent in his application of the protocols. For this argument, it is necessary to assume that the protocols were intended only to apply to a patient at the point of death, but were imprecisely expressed, so as reasonably to permit a broader understanding of their application. However, for the reasons identified above, the conclusion that they were

intended to have a narrow application, limited to patients at the point of death, could not properly be accepted.

91 It was suggested during the course of argument that the narrow reading of the protocols only arose during the cross-examination of Dr O'Connell. If true, that might explain why the plaintiff's case, as will be noted below, was substantially directed to a criticism of the content, rather than the expression, of the protocols. As Professor Malcolm Fisher noted in his report of 10 November 2003:

"It appears, however, that both Dr Vinen and Dr Rosen agree that the paramedics acted in compliance with their protocols, and therefore the issue is whether the NSW protocols were appropriate at the time of the event that occurred."

92 Dr John Vinen, in his initial report of 27 May 2001, had expressly stated that conclusion. However, in his second report of 1 May 2003, he expressed the view that the ambulance protocol "is for patients who are 'in extremis'" when commenting on Dr Gordian Foule's report at p 3. In his further report of 21 January 2004, Dr Vinen stated:

"The ambulance officers treating Stephen Worley may have followed the ambulance protocols referred to by Professor Fisher in his report. The problem is that the protocols are unclear in that they specify the use of adrenaline intravenously for patients 'in extremis' ... ."

93 Dr Rosen, in his first report of 7 April 2002 had also stated that he could not fault the paramedics for following their protocol: p 6. In his second report of 1 July 2003, Dr Rosen stated:

"There was no question that the paramedics were acting according to their protocols. The question is whether the protocol was safe."

After seeing Professor Fisher's report, Dr Rosen responded, in part, on 25 February 2004 in the following terms:
"I have repeatedly stated that I am criticising the protocol, and not the paramedic behaviour."

94 Dr John Raftos, in his report of 22 February 2003, concluded that "the ambulance officers' use of adrenaline conformed with their protocols at the time": p 9. He repeated that opinion in a second report of 8 August 2003, after being provided with reports from Dr Rosen (dated 7 April 2002) and Dr Vinen (dated 1 May 2003).

95 In the absence of appropriate cross-examination of Dr O'Connell and Mr McCarthy (and possibly Mr Parsell) putting to them the proposition that the protocol was unclear, the plaintiff could not have succeeded on that (unpleaded) case. The fact that the trial judge understood the protocol differently does not entail a finding that it was unclear to an ambulance officer trained in its application. Accordingly, the first limb of the notice of contention should be rejected.

Negligence in preparation of protocols: introduction

96 It was open to the plaintiff to establish that, even if Mr Page followed the protocol, with adverse results, the Ambulance Service would be liable in negligence because it had failed to exercise due care in the preparation of the protocols. To establish that case, the plaintiff sought first to establish that the administration of IV adrenaline was not part of accepted medical practice and, to the extent that the protocol permitted such administration to a patient who was not on the point of death, it was formulated negligently. For this purpose it should be accepted, whether or not the last conclusion was correct, that the protocol permitted this wider use, in accordance with the express indications, either unqualified by the words "in extremis", or giving those words a broader scope than the phrase "at the point of death" to include, relevantly, "signs of severe shock".

97 The second limb of the notice of contention sought to establish a limit beyond which accepted medical practice would not think it reasonable to administer intravenous adrenaline. However, much of the evidence at trial which addressed that topic (and it extended over 1,000 pages of transcript) dealt with the question in those general terms. What needed to be addressed (and largely was not) were the precise variations which should have been included within the protocols, in order to bring them within the limits of what was reasonable. The second limb of the notice of contention asserted that the protocol should, in October 1998, have required the use of IM adrenaline for patients, such as Mr Worley, who were not on the point of death.

98 Before addressing these arguments, it is convenient to note an underlying issue as to Mr Worley's blood pressure when treated at the mail delivery centre. That is because one of the accepted indications for the administration of adrenaline to a person suffering an anaphylactic reaction is that he or she is suffering from shock or hypotension. Part of the allergic reaction may involve the dilation of the blood vessels and a loss of fluid into the surrounding tissue.

99 The readings with respect to Mr Worley's blood pressure were systolic, that is the pressure created by the contraction of the heart. Blood pressure is generally measured by use of a sphygmomanometer, which involves the inflation of a cuff around the patient's limb. However, the precision of the measurement may depend upon whether a stethoscope is used to listen for the point at which the blood supply is re-established (auscultation), rather than relying upon feeling a pulse (palpation). The trial judge accepted that Mr Page measured the blood pressure by palpation: [191].

100 Mr Page recorded Mr Worley's blood pressure at 12.20pm as 78 systolic. Because it was measured by palpation, Dr Rosen concluded that it was in fact not less than 80 systolic: Tcpt, p 343. That figure was accepted by the trial judge at [191]. The experts also gave evidence as to the difference between a blood pressure taken while the patient is recumbent and whilst sitting. His Honour accepted that the difference may be "a few millimetres of mercury": at [192]. His Honour made no finding as to what an accurate

systolic blood pressure would have been for a recumbent patient, but it was not suggested to this Court that Mr Worley's true blood pressure when taken at 12.20pm was above 90 systolic. A reading below 90 is treated in some of the medical literature discussed below as indicating hypotension and shock, as in Protocol 42.

101 The case for the plaintiff does not appear to have been run on the basis that the Court needed to determine his true systolic blood pressure at the time IV administration was commenced. Had that been the case, one would have expected questions to be asked of Mr Parsell and of Mr McCarthy, a superintendent with the Ambulance Service responsible for education, as to how ambulance officers were trained to take and record blood pressure. Without that evidence, the Court would not know whether Mr Page had made some allowance for what were treated by the medical experts as well-known matters affecting blood pressure readings, and in relation to the position of the patient when considering whether a particular reading was above or below a standard measure. Rather, the case appears to have been run on the basis that, to succeed, the plaintiff needed to establish that adrenaline should only be administered intravenously if the patient was "in extremis", that is, on the point of death.

102 Against that background, it is convenient to turn to the complaints as to the content of the protocols, commencing with the combined complaint that IV adrenaline should not have been permitted except with respect to a patient assessed to be on the point of death and that, for a patient in Mr Worley's circumstances, only IM adrenaline should have been prescribed.

Content of protocols: IM administration

103 In a passage at [162] the trial judge noted:

"It was common ground that the drug indicated for anaphylaxis was adrenaline. Although Mr Worley pleaded a case for failure to administer the drug subcutaneously he never pursued such a case. The choice was only ever between intravenous and intramuscular administration."

104 However, there were difficulties in establishing the factual basis for proper treatment because of the lack of hard scientific data with respect to the treatment of anaphylaxis and the effects of the administration of adrenaline. The trial judge appears to have accepted the evidence of Professor Fisher on this question that there was "tremendous variability of the anaphylactic response", there was a relatively high risk of death and it was not possible to extrapolate accurately from animal data as to the effects of adrenaline. The risk of intracranial haemorrhage was widely accepted as a risk, but was not a problem encountered in practice. Professor Fisher said that in two decades of clinical and academic experience, he had never heard of an intracranial haemorrhage resulting from the administration of appropriate doses of IV adrenaline until the present case and was unimpressed by the single case mentioned anecdotally by Dr Rosen as

being the sum total of his extensive experience over 30 years. His Honour then concluded at [179]:

"... there has for years been a debate and a diversity of opinion about the relative benefits and risk of adrenaline, particularly as to its dosage and manner of administration. Simply put, adrenaline administered intravenously has been said to work faster than when administered intramuscularly and therefore to offer a more reliable means of improving perfusion. Everybody seems to agree that in severe cases the appropriate manner of administration is intravenous. Adrenaline administered intramuscularly can have the same beneficial effects but may produce them more slowly and less predictably. Intravenous administration presents risks, including the risk of intracerebral haemorrhage. For present purposes any risks associated with intramuscular administration may be ignored."

105 **With respect, the risks of intramuscular administration of adrenaline could not properly be "ignored". They were relevant for two reasons. First, in establishing a standard of care, as Professor Fisher noted, it was necessary to take into consideration the possibility that intramuscular administration would be ineffective, requiring a switch to intravenous administration. By either route, the intended purpose of the treatment was to increase the patient's blood pressure. The cumulative effects of intravenous administration following intramuscular administration needed to be addressed. Secondly, one cannot conclude that intravenous, in place of intramuscular, adrenaline was causative of the harm, without identifying the risks of intramuscular adrenaline. While the intramuscular route was described as "safer", the evidence did not demonstrate that it was necessarily risk free.**

106 In his written submissions in support of the contention, Mr Worley's counsel argued:

"Had Mr Worley been administered IM adrenaline, the evidence suggested that his anaphylactic reaction would have been controlled and improved, without him bearing the catastrophic consequences of a intracerebral haemorrhage brought on by the administration of IV adrenaline."

107 It will be necessary to examine not only the express findings of the trial judge but also the evidence to identify whether that conclusion was not merely "suggested", but established on the balance of probabilities, despite the fact that no notice of contention, including the amended notice of contention filed on the last day of the hearing of the appeal, sought such a finding.

108 Assuming in Mr Worley's favour, that a finding of causation may properly be made (an issue addressed further below), the question remains whether, in 1998, the Ambulance Service was negligent in failing to adopt at least the alternative of IM administration in cases which would include that of Mr Worley. In this respect, the plaintiff was entitled to rely upon the acknowledged change three years later, in September 2001, when the Medical Advisory Committee adopted a new protocol which

included the possibility of IM administration of adrenaline. However, Mr Worley could not simply rely on the new protocol (apparently adopted without reference to or knowledge of his claim) because it permitted IV administration in the case of "signs of severe shock", a criterion which he would have satisfied, given his condition as outlined at [100] above, having a systolic blood pressure below 90mm/Hg and which, according to Protocol 42, was one of the "key signs" of severe shock (see [57] above).

109 The assessments of the New South Wales protocols, as at 1998, were widely disparate. Dr Peter Rosen, an American emergency specialist of undoubted standing, expressed the view that "this is a dangerous protocol which was a time-bomb waiting to explode": Tcpt, p 381. However, this appears to have contained an element of hyperbole. Dr Rosen noted that "for severe cases we do recommend intravenous administration, otherwise intramuscular". His evidence continued (Tcpt, p 423):

"Q. But you criticise the protocol for advocating intravenous use for severe bronchospasm, don't you?
A. No, I don't. I don't know where you are getting that from. I criticise the protocol because it does not offer any other route of administration for any patient with anaphylaxis, not because it recommended it for severe anaphylaxis. That was my criticism of the protocol, that the paramedics had no option but to give it intravenously and that is a dangerous practice."

110 Dr Rosen was asked about a passage which appeared in *Emergency Medicine: Concepts and Clinical Practice* (3rd ed, 1992), of which he was the Editor-in-Chief, which stated at p 1055:

"If the patient demonstrates other airway obstruction, acute respiratory failure from severe bronchospasm, or shock (systolic BP under 80[mm/Hg], not in association with ventricular tachydysrhythmia), IV epinephrine should be administered, with a total initial dose of 0.1ml per kg of 1:10,000 solution to a maximum of 5ml of 1:10,000 (0.5 mg)."

(Epinephrine is the American term for adrenaline.)

111 In his first report, Dr Rosen, in a passage which otherwise accurately reflected the text quoted above, changed "should be administered" to "may be administered". He was cross-examined as to why he had taken that step without referring to the change. The change was noted by the trial judge who accepted that Professor Rosen "did not change the text to suit the case". **His Honour expressed the view that the word "should" had a range of meanings and whilst "closer to 'must' than 'may' is, ... it does not mean 'must'." However, this is really beside the point. The question was not what a court, or even the author, thought what the text meant: the question was whether a committee of medical experts advising the Ambulance Service could reasonably rely on the text in 1998 (when it was then current) to support the protocol. The answer to that question must be in the affirmative.** And there was other support in the American literature, including *Emergency Medicine: A Comprehensive Study Guide* (4th ed, 1996) published by the American College of Emergency Physicians, and known as Tintinalli,

the name of the Editor-in-Chief, Professor Judith E. Tintinalli. That authority, at p 210, stated:

"Treatment begins with attention to the airway. A high flow of oxygen via facemask and immediate administration of epinephrine are indicated. If signs of shock are present, intravenous administration of 0.3 to 0.5mg of a 1:10,000 solution is preferred. ... Subcutaneous administration of 0.3 to 0.5 mg of a 1:1,000 solution is indicated if there is no significant circulatory compromise."

112 The plaintiff also sought to support his case through two experts called by the Ambulance Service, namely Professor Malcolm Fisher, an intensive care specialist at Royal North Shore Hospital, who also had some experience lecturing to the Ambulance Service and Dr Raftos, to whom reference has been made above. Dr Fisher had stated in his report of 10 November 2003 (p 3):

"I believe the NSW Protocols were appropriate at that time, even though I am a recognised advocate of intramuscular adrenaline. This has been a [controversial] topic for many years, and remains so."

He noted that he had published an article in the British Medical Journal in 1992. "At that time I recommended intramuscular adrenaline if the reaction was progressing slowly, was not severe, when venous access was difficult and if given early. These recommendations were attacked by some correspondents. In a further requested article in 1995 I suggested adrenaline should be given intravenously only in severe cases and monitored patients which caused further controversy [and] was challenged by correspondents."

113 Dr Fisher noted that he was "unimpressed with Dr Rosen's suggestion that blood pressure below 80mm/Hg systolic is shock and above is not shock". He said, "While simplifying concepts is important in preparing paramedic protocols this is a gross over-simplification". He also noted:

"In our own large series of patients with anaphylaxis the presence of bronchospasm, which Mr Worley had, signals a significant increase in the risk of death from anaphylaxis. The paramedics, on first contact, had no way of knowing whether Mr Worley was improving or deteriorating."

114 Inevitably, Dr Fisher was pressed with the view that in 1998 the protocol should have included IM adrenaline: Tcpt, p 900. He reiterated his view that "the protocol at that time was reasonable". The next question acknowledged that there was debate "as at 1998", but suggested there was no reason not to include IM administration as well as IV in a protocol. Dr Fisher noted the important boost to the proponents of IM adrenaline given by a 1999 British Resuscitation Council paper and continued:

"Once again, the difficulty is the accuracy of the scientific data upon which it is based in terms of writing protocols, and while we can look at what this guy says and what this

guy, you have really got to look at all of them and there is no question that the overwhelming data in the saving of life with anaphylaxis is related to the intravenous use of adrenaline. But there is no question that there has been a swing towards the use of intramuscular injection of adrenaline and particularly if that is given early."

115 Dr Fisher was pressed further on the basis that the 2001 protocol permitted subcutaneous and intramuscular as well as intravenous administration: Tcpt, p 901. The cross-examination continued:

"Q. Given the state of knowledge which existed back in 1998, there would be no reason why that could not have applied back in 1998 and given the ambulance officers that choice?
A. Yes. The timing ... I mean the 1999 British Resuscitation Council paper, you know I am vindicated. One of the things I thought of over lunchtime, me treating, I am very prejudiced because when I am treating anaphylaxis I am thinking that if this guy dies you are going to look a complete clown."

116 Dr Raftos, who had only used the intramuscular route since 1981, was cross-examined about the textbooks on which he had relied to express the view that the 1998 protocol was acceptable. At Tcpt, p 966, he was asked:

"Q. In not one case, leaving aside the Fulde [sic] which does not deal with rate, is there any consistency between the text and the rate of administration and the 1998 protocol?
A. Nor is [there] any significant agreement between ... the individual texts and I think that what you are saying is that ... the protocol doesn't exactly represent those texts, true. But it is in my opinion anyway a reasonable representation of them, and after all it is only my opinion."

117 He was pressed in cross-examination with the proposition that in every case where the patient is not "in extremis" IM administration and not IV is indicated. He said that he personally would give intramuscular adrenaline. His Honour noted (Tcpt, p 1026):

"Q. You are asked to agree with the proposition that where a patient is not in extremis it is never appropriate to give IV administration. Do you agree with that proposition?
A. That's our knowledge today. I don't that that was established. I think that that understanding was in the process of being established several years ago. The knowledge is more clear today. It's not totally inappropriate to give intravenous adrenaline, some of my colleagues do it, but they inject it very slowly in very dilute solutions, so that's a special circumstance. I don't do that, I use intramuscular adrenaline and I use it exclusively, probably because of discussion that was occurring at around about the time that this incident took place. But at that time I believe that some of my colleagues were still using intravenous adrenaline and other authorities were using it or promoting its use."

118 The cross-examiner took up the proposition that in 1998 it would have been appropriate "to have included the option of administering the adrenaline IM" (Tcpt, p 1027) and elicited this reply:

"Look, discussion was occurring at that time and it was on-going about which way it was best to give adrenaline. I certainly didn't stop anyone in my departments from using intravenous adrenaline if they felt that that was appropriate, and I obviously didn't use it myself. But the broad scope of opinion at that time I believe, as was reflected by the various texts, was that intravenous adrenaline was still recommended for use in these circumstances."

Dr Raftos was further questioned about protocols then in operation in the Victorian Ambulance Service and in New Zealand. The questioning continued (Tcpt, p 1030):
"Q. And in accordance with what was known, the safest way of dealing with a patient who was not in extremis was to at least start of with the SC or IM route, monitor the condition, and if there wasn't an appropriate response then to move on to the IV?
A. That was my personal feeling at the time and it is reflected in these protocols, but there were other schools of thought at that time which didn't necessarily agree with that."

119 Others supported that view. They included Professor Gordian Fulde, the author of *Emergency Medicine: The Principles of Practice* (3rd ed 1998), who was called by the defendant.

120 Dr John Vinen, an emergency physician, gave evidence for the plaintiff, having prepared a number of reports. The second report of 1 May 2003 post-dated and was partly in response to reports by Drs Fulde and Raftos. He expressed the view that whilst Mr Worley was suffering from "a potentially life-threatening condition" his condition was "serious but not critical" when treated by the ambulance officers. He expressed the further view that:

"None of the conditions where the use of IV adrenaline is indicated were present when [Mr Worley] was being treated by the ambulance officers."

To the extent that that opinion was based upon the protocols, it treated them as restricting the administration of IV adrenaline to cases of "impending death". However, in his report of 27 May 2001, he expressed the view that the ambulance officers had followed the protocols and noted that adrenaline is "life-saving in cases of serious anaphylaxis".

121 The plaintiff also obtained an opinion from Professor Howes, a clinical pharmacologist. In a report of 5 December 2003, he commented on the treatment, but not on the protocols.

122 Most of the material relied upon in the proceedings went to the question of what was accepted medical practice in 1998 in relation to the administration of IV adrenaline. However the texts, and much of the discussion, related to practice in the emergency medicine departments of modern hospitals. Professor Fisher, who had lectured at one

time to New South Wales ambulance officers, adverted in his evidence to the situation of a paramedic in the field, but most of the medical specialists had no experience of, and were asked only indirectly to comment on, the preparation on protocols and the various considerations which had to be taken into account in dealing with the preparation of such protocols for use by ambulance officers. The exception was, of course, Dr O'Connell who was questioned at some length on this aspect of the case. The trial judge's consideration of Dr O'Connell's evidence was, however, almost exclusively limited to his use of the term "in extremis", a matter discussed above. It is therefore necessary to reconsider the thrust of Dr O'Connell's evidence, particularly in cross-examination, in relation to the case based upon the failure to provide for IM administration of adrenaline.

123 There was extensive cross-examination about the consideration given by the Medical Advisory Committee to other routes of administration during 1996 and 1997 and, indeed through to 2001. Two factors were isolated. First, there was pressure from regional areas to introduce other means of administration on the basis that they involved less risk and could be undertaken by level 3 ambulance officers in areas where officers at levels 4 and 5 were less frequently available. The second factor was that the Medical Advisory Committee was aware of "contentions" that IM adrenaline involved less risk and was as efficacious. Dr O'Connell agreed that the Committee was aware of those contentions but stated that one "needs a basis of evidence to make a decision about a change in protocol": Tcpt, p 744.

124 The examination of medical testimony in 2004, particularly having regard to its volume, was liable to distract attention from the heart of the case which complained of the contents of two particular protocols. One might have expected that such a challenge would be based on one or more of three grounds. First, it might have been argued that the Medical Advisory Committee did not have on it, or have access to, people with the appropriate expertise to formulate a protocol for the administration of adrenaline to patients suffering an anaphylactic reaction. No such case was put and it must be assumed that the Committee had on it or had access to people with the relevant expertise. Secondly, it might have been put that the Committee could not reasonably have maintained the protocols in their form as at October 1998, had they taken account of scientific or medical opinion, as expressed in standard texts or peer reviewed articles. It is true that Dr O'Connell (the only member of the Medical Advisory Committee called to give evidence) was asked whether he could remember "the literature that you and your Committee referred to which led to the change in the ambulance protocol which occurred in September 2001?" Dr O'Connell said he could not remember the exact literature: Tcpt, p 739. What was achieved by that inquiry is unclear. A significant purpose of the 2001 amendments had been to make adrenaline available intramuscularly to a wider range of patients, by permitting the less risky form of administration to be undertaken by Level 3 (rather than Level 4 or 5) officers. More importantly, Dr O'Connell's attention was not drawn to particular statements in the literature, as it stood in October 1998, which might have demonstrated that his Committee had been negligent in failing to amend the protocols to restrict the IV administration of adrenaline. Had that occurred, Dr O'Connell, being the responsible officer of the defendant in this respect, would have had the opportunity to say whether or not a particular body of medical opinion had been

overlooked or, in the alternative, why it had been considered, but not acted upon. The plaintiff's case in this respect was simply not put to the key witness for the defence.

125 The alternative course taken was to put all of the material before the trial judge and invite his Honour to form his own view as to whether the Medical Advisory Committee had acted unreasonably in failing to limit IV administration of adrenaline to a patient expressly identified as "on the point of death".

126 It is, nevertheless, desirable to look at the indications for administration of intravenous adrenaline, as identified by the plaintiff in a table of the "adrenaline literature" handed up with written submissions at trial. More than 50 publications are listed, although some post-date October 1998 and some had been superseded by that date. The first four columns of the table identify the publication, the route of administration, the amount of adrenaline and the rate at which the dose is to be administered. The fifth column is headed "In extremis". For most publications, that column is blank, although in some there is reference to conditions which counsel no doubted intended to equate with the patient being on the point of death. However, entries are recorded in only 20% of cases and then the terminology used is not defined. The various texts and protocols referred to demonstrate a range of views in relation to the use of IV adrenaline. For example, the London Ambulance Service paramedic training drug protocol prescribed IV adrenaline of twice the dose permitted in New South Wales for anaphylaxis, but only in relation to cardiac arrest, permitting IM adrenaline only with respect to anaphylactic shock. Moving from that position, the Victorian Ambulance Service Clinical Practice Guidelines for October 1997 provided for IV administration of adrenaline for anaphylaxis, in a case of "extremely poor perfusion", which included a blood pressure of less than 60mm/Hg systolic or which was unrecordable. The relevant indications are clearly more limited than those contained in the New South Wales protocols. On the other hand, the Ambulance New Zealand protocol for 1998 provided that subcutaneous adrenaline should be given to adults suffering a severe anaphylactic reaction, requiring a dose of 0.5mg of 1:1,000 solution. The protocol further required the administration of 1 litre of saline solution rapidly if the blood pressure were below 100 systolic. It continued, "if the patient has not improved" 1ml (0.1mg) of IV adrenaline should be administered every minute as needed.

127 The ACT Ambulance Service provided for 10mls (1mg) of IV adrenaline to be administered to a 100kg adult who was "hypotensive and/or in severe respiratory distress". For anaphylactic shock, the Queensland Ambulance Service provided for the administration of adrenaline either subcutaneously, intramuscularly or intravenously. As a guiding principle it directed that the "aggressiveness of therapy should match the seriousness of the allergic reaction".

128 As already discussed, there were a number of medical texts which were also relied upon. The *Australian Medicine Handbook 1998*, in dealing with adrenaline for anaphylaxis and bronchospasm stated:

"IM or SC route is generally regarded as safer than IV, and is preferred initially, or when IV access is difficult, or when the patient is not monitored. However, IV administration is necessary when shock occurs."

129 Dr Raftos, in his first report of 22 February 2003 stated:

"In the 1980's and 1990's, it was generally accepted that intravenous adrenaline was appropriate for use in severe anaphylactic reactions. There were four definitive texts in use in Emergency Department in NSW in 1998."

The four texts included Rosen, *Emergency Medicine, Concepts and Clinical Practice* (3rd ed, 1992), the key passage from which has been set out above at [110]. The second was Tintinalli, the key passage from which has also been referred to above at [111]. The third was Isselbacher, *Harrison's Principles of Internal Medicine* (13th ed, 1994) which supported intravenous infusion of 5ml (0.5mg) of adrenaline diluted 1:10,000 at 5 to 10 minute intervals for intractable hypotension. Fourthly, there was Fulde, *Emergency Medicine, The Principles of Practice* (3rd ed, 1998) described by Dr Raftos as the "definitive Australian text on Emergency Medicine in 1998". That text provided: "Adrenaline is the drug of choice for anaphylactic shock. Initially, give 10ml of 1:10,000 (1mg) adrenaline titrated against a response, then repeat as necessary or commence an infusion."

130 Dr Raftos concluded:

"This evidence indicates that the use of intravenous adrenaline 0.3-0.5mg (3-5 ml of a 1:10,000 solution) was widely accepted in Australia (and the rest of the world) by peer professional opinion in 1998 as competent professional practice for the treatment of severe anaphylactic reactions involving either shock or respiratory failure."

131 For completeness, it may be noted that three paramedic protocols from the Denver City Ambulance Service, San Diego County and Teton County, referred to by Dr Rosen all permitted the administration of IV adrenaline, albeit, in each case, after "base hospital physician contact", a system not used in New South Wales, for reasons explained by Dr O'Connell and not challenged by the plaintiff.

132 This review of the relevant material available in October 1998 fails to demonstrate that ambulance protocols generally restricted IV administration of adrenaline to cases where the patient was in extremis, in the sense of being on the point of death, or generally permitted only intramuscular adrenaline for persons suffering shock with a blood pressure below 90 systolic.

133 Further, it was not established that Dr O'Connell and his committee did not have available to them up-to-date information, nor that they did not take into account that which was available. The only tenable conclusion is that the scientific evidence did not support the view that a change was reasonably required, nor did it support a finding that

the Medical Advisory Committee was negligent in maintaining the 1997 protocol permitting the use of IV adrenaline for the specified indications, in October 1998.

Content of protocols: dose, rate of administration and monitoring

134 The third set of complaints about the content of the protocol constituted the final limb of the notice of contention filed on the last day of the appeal. It did not seek to identify the dosage or rate of administration which the Medical Advisory Committee should reasonably have adopted. It identified the element of monitoring which was said to be inadequate because of the failure to require the officer to monitor blood pressure between the administration of each 0.1mg [1ml] dose or aliquot of adrenaline. The means of monitoring sought was, as appeared from the argument, by the use of a sphygmomanometer, perhaps with auscultation. Use of this device, which included inflating and releasing a cuff around the patient's arm, would not have been feasible, given the 30 second intervals between doses prescribed by the protocol.

135 Before referring to the other protocols, it will be recalled that the New South Wales Ambulance Service Protocol Pharmacology 201, provided for the administration of 5mls of adrenaline, giving a total dose of 0.5mg, over a period of two minutes. As noted above, Mr Page in fact administered 0.4mg over a period which was probably no less than one and a half minutes. Accordingly, in order to show a casual relationship between any breach of duty and the harm suffered, it would be necessary to demonstrate that a protocol which provided for the dose in fact given would have been negligent.

136 The Ambulance New Zealand protocol provided for the administration of 0.1mg every minute, as needed, without a maximum dose being prescribed. The Ambulance Service Victoria guidelines provided for an initial dose of 0.3mg with, if necessary, further increments of 0.1mg every minute "until satisfactory results are obtained, or, side effects occur". The ACT Ambulance Service protocol provided for administration of up to 1mg for a 100kg adult, to be administered "slowly until condition improves, side effects occur or total dose is administered". The infusion could be repeated if there were no improvement after 5 minutes. The Queensland protocol provided for the administration of 0.1mg [1ml] every minute "until perfusion and respiratory status normalises", to a maximum total dose of 2mg [20mls].

137 As noted above, there were three Californian protocols discussed by Dr Rosen. The Teton County manual written in 1989 provided for the administration of "1mg [10mls] per minute slow intravenous push as ordered", the condition being that it must be undertaken pursuant to contact with a physician. The San Diego County protocol provided for 0.1-0.3mg [1-3mls] with the possibility of repeat administrations to a maximum of 0.5mg [5mls] each 10 minutes. The Denver protocol appears to have provided for 0.1mg [1ml] as a single dose, although its date of promulgation, content and operation as provided by Dr Rosen are somewhat obscure.

138 As may be seen from this summary, the proposition that a dose of 0.5mg [5mls] of a 1:10,000 solution of adrenaline was out of line with other ambulance protocols (other than the London Ambulance Service protocol which did not provide for IV administration) cannot be justified. The next question is whether the medical texts demonstrated a different approach. Dr Rosen's textbook, *Emergency Medicine* (4th ed, 1998) provided for a significantly lower dose, namely 10ml administered over 10 minutes of a 1:100,000 solution. However, in his report of 7 April 2002, Dr Rosen conceded:

"The dose dilution and rate of intravenous administration is controversial."

139 The *Australian Medicine Handbook*, published in 2002 (four years after the incident) provided for the administration of 0.5mg for a 100kg adult, "usually administered as 0.5-1ml aliquots every 1-2 minutes". It will be seen that the amount does not differ from that contained in the relevant ambulance service protocol, although the rate of 'usual' administration is said to be between one-eighth and one-half that prescribed by the protocol. Tintinalli prescribed a dose of 0.3-0.5mg [3-5mls], without identifying a rate of administration. Isselbacher, in *Harrison's Principles of Internal Medicine* prescribed a dose of 0.5mg [5mls], with doses to be given at 5-10 minutes intervals, but without prescribing a rate of administration. Dr Fulde's text (referred to by Dr Raftos as authoritative in Australia) provided for the administration of 1mg [10mls] "titrated against a response – then repeat as necessary or commence an infusion". In papers published in both 1992 and 1995, Dr Fisher indicated that the appropriate doses would be "0.3-0.5mg [3-5mls] to be administered slowly". Dr Fisher, it will be recalled, thought that the dose given was appropriate and the rate of dosage was also appropriate, despite his preference for intramuscular administration.

140 Whilst this sample of the evidence is selective, it refers to at least some of the texts which appear to have been accepted as authoritative for Australian purposes and fails to demonstrate that the Ambulance Service protocols were, in 1998, significantly at variance with the dosages and rates of administration (where noted) provided in the literature. Counsel for Mr Worley sought to disregard those texts which did not prescribe a rate of administration, but, as explained by Dr Fisher, that is not an appropriate course to take. In his evidence Dr Fisher referred to an article by Eric M. Barach and Ors "*Epinephrine for Treatment of Anaphylactic Shock*" in JAMA (27 April 1984) Vol 251 at p 2118-2122. At p 2121, the authors, having set out a table of dosages, dilutions and administration, state:

"As reflected in the table, at present there is no uniform dosage for IV epinephrine use in human systemic anaphylactic shock. This is probably partly because of a lack of information available on its use for this clinical setting."

141 Dr Fisher was asked to comment in cross-examination on the dosage recommended in *The Australian Prescriber* (1994) and the rates of administration in concluding his answer he stated (Tcpt, p 903):

“Last night I looked again at [Barach’s paper]. ... In terms of hard scientific data as to the dosage and rate, there is none and it becomes the arbitrary opinions of experts. I note that in the consensus all of the experts in February last year was we do not know the optimum dose or the rate and we are not likely to because we can’t do the studies and because the condition is so enormously variable.”

142 Dr Fisher was then asked about the *Australian Medicines Handbook*, referred to above. He said (Tcpt, p 904):

‘Yes, that’s getting there. If you are going to infuse drugs, adrenaline, I’ve talked about the half-life of adrenaline, it generally, if you start infusing a drug, generally you proceeded with a bolus and you get to good levels much faster. The half-life in a normal person we have said is a couple of minutes, although longer in a shocked patient. But it takes a certain number of half-lives of a drug to get to a therapeutic level. Generally if you wish to achieve an effect with a drug in most situations you tend to give bigger doses and aliquots somewhat smaller ... . It might have been fine in Mr Worley but someone who is sicker it is not enough. Indeed, we have given 1mg as a bolus in sick people.”

143 The oral testimony (and the written reports) of the medical experts confirmed, both indirectly and expressly, that questions of dosage and rate of administration were controversial and subject to differing opinions, without good scientific evidence for any particular option. That state of the evidence is inadequate to demonstrate that the dosage or the rate of administration adopted in the Ambulance Service protocol in 1998, reflected negligence on the part of the Medical Advisory Committee which recommended its adoption.

144 Furthermore, there was quite limited cross-examination of Dr O’Connell in relation to dosages and rates of administration at the relevant time. It was as follows (Tcpt, p 756):

“Q. Now, we know that the protocol sets out dosages and rates of administration for adrenaline IV?
A. Yes.
Q. Are you able to identify for the Court firstly in relation to the protocol which was dated 29 April 1997, the literature which you and your Committee relied upon to arrive at that dosage and rate?
A. I can’t name the exact articles, nor their date of publication and I think I might have referred to this yesterday, that there were a number of articles which suggested a number of doses and rates of administration and that these recommendations represented an agglomeration of the recommendations of those various articles as well as the individual experience of the members of the Committee.
Q. So what you are saying is that you are unable to identify specific literature, is that right?
A. Sitting here in the witness box, yes.”

145 No article was put to Dr O'Connell, nor was there any further questioning to challenge his description of the state of the publications, as he described them. On the other hand, the medical publications put into evidence provided support for the description he gave. It is not possible to find that the Medical Advisory Committee was negligent on the basis of this material.

146 There remains the question of monitoring. There is no doubt that Mr Worley was monitored by the ambulance officer who was treating him, by means of an ECG, by taking his pulse and by noting other aspects of his condition, including assessment of his airway, breathing, and appearance. The question is whether, in addition, the protocol should have required the monitoring of blood pressure by use of a sphygmomanometer in between the administration of each 0.1mg [1ml] of adrenaline.

147 In this respect, the ambulance protocols are likely to be of most assistance because they will deal with the position of ambulance officers treating a patient in the field, or even in a moving ambulance, without ready access to the facilities of a hospital emergency department. Each of the protocols envisaged that the user will watch for side-effects and note improvement in condition. None of them requires the taking of blood pressure at specific intervals. Nor, indeed, did the *Australian Medicines Handbook* or the *Australian Prescriber* wall chart, which was extensively discussed in the evidence.

148 One would have expected that, if the case were run on the basis of a failure to monitor blood pressure, Dr O'Connell would have been asked about the issue in cross-examination. That did not occur.

Protocols: conclusions

149 This part of the plaintiff's case was that the protocol should have provided for intramuscular adrenaline in cases other than impending death. Even if the plaintiff had established that there was negligence in failing to take this step, he needed to establish that IV adrenaline was not properly indicated for a person in shock. Whether his blood pressure was 78 systolic or marginally higher would only be relevant if shock could not reasonably be defined as a blood pressure of less than 90 systolic, which was a figure within the range suggested on the evidence, being that adopted in Protocol 201 and that identified as one of the "key signs" of severe shock in Protocol 42. It was no doubt for this reason that the plaintiff sought to insist on the inappropriateness of IV adrenaline for any person not "in extremis" or on the point of death. But if he failed in this respect, the absence of an alternative route of administration in the protocol, would not have been sufficient to establish his case, if he fell within the indications for IV adrenaline. The second contention should, accordingly, be rejected.

A global approach: unacceptable treatment

150 According to the plaintiff's case at trial, taking account of acceptable medical practice as described by the medical experts, he should not have been given IV adrenaline on the day in question or should have received a different rate or dosage, that would establish negligence on the part of the Ambulance Service, despite the fact that the treating officer was not negligent and that the protocols were not the result of negligence on the part of the Medical Advisory Committee.

151 This was the approach which appears to have been accepted by the trial judge. The conclusion that Mr Page administered too much adrenaline too fast was achieved by applying recommendations from medical texts. Presumably the same source was the basis for the finding that he acted "without any regard for the consequences". His Honour also found that Mr Page "failed to monitor the blood pressure" between the four administrations of 0.1mg at 30 second intervals, a finding which was justified on the facts although he also held that Mr Page was negligent in that respect: at [242].

152 The basis on which his Honour made these findings is not entirely clear. For example, at [237] he stated:

"In my opinion the dose of 4mg was, by any standard, massively concentrated when given over 90 seconds. That, of course, is not surprising, because the dose was prescribed for a patient whose perfusion was so bad that he or she was about to die."

That finding was both mistaken and unsupportable. The dose prescribed in the protocol was to a maximum of 0.5mg and the dose administered was 0.4mg, or 4ml of the particular solution, but not 4mg. (Related mistakes occur elsewhere in the judgment including at [236]: whether they were typographical or may have affect the conclusion reached is unclear.) Further, the conclusion that a similar maximum dose was only to be given in the case of a patient who was about to die was not consistent with the literature or with the expert medical opinion.

153 But in any event, these criticisms are beside the point. **The obligation to exercise care, undoubtedly imposed by law on the Ambulance Service in relation to its patients, is not an abstract duty but a duty which applies to the practice of paramedics attending at emergencies in order to stabilise a patient and convey him or her to hospital, as necessary.** There was nothing in the evidence to support any element of negligence other than in the conduct of the ambulance officer or in the preparation and promulgation of the protocols which he applied. Once it is concluded that negligence has not been established in those two respects, there is no separate abstract standard of behaviour with which compliance was required. There is no alternative basis for upholding the findings made below.

154 It follows that the plaintiff was a most unfortunate victim of misadventure. He is entitled to receive benefits in the nature of workers compensation, for an injury suffered in the course of his employment. He is not, however, entitled to damages for negligence on the part of the Ambulance Service.

Damages

155 The Ambulance Service also challenged a number of aspects of the assessment of damages undertaken by the trial judge. Since these issues were subject to argument on the appeal, it is as well that they should be dealt with, although in the light of the finding with respect to liability, they will remain moot unless the decision of this Court is overturned.

(1) Repayment to Commonwealth

156 The first major complaint made by the Ambulance Service is that it was required to pay damages involving past economic loss and out-of-pocket expenses, which had been met by the employer, Australia Post, but which Mr Worley was not obliged to repay out of any judgment he might obtain against the Ambulance Service.

157 This issue was said to turn on the operation of the *Safety, Rehabilitation and Compensation Act* 1988 (Cth) ("the *Compensation Act*"). The amount involved was said by the Appellant to be of the order of $266,000, although at [121] his Honour said it was $356,990.45.

158 The *Compensation Act* constituted a statutory body corporate known as Comcare: ss 68 and 74. Part II of the *Compensation Act* provided for the payment of compensation to Commonwealth employees. Relevantly for present purposes, s 14 provides:

14 Compensation for injuries

(1) Subject to this Part, Comcare is liable to pay compensation in accordance with this Act in respect of an injury suffered by an employee if the injury results in death, incapacity for work or impairment.

159 As a mail delivery officer, Mr Worley was an employee of Australia Post, a Commonwealth authority, and hence an "employee" for the purposes of s 14 of the *Compensation Act*: see s 5(1). The term "injury" was defined in s 4 as an injury "arising out of, or in the course of, the employee's employment". There was no dispute that Mr Worley satisfied this requirement and that payments were accordingly made under the *Compensation Act*.

160 In common with other similar forms of legislation, the *Compensation Act* provided for such payments to be recoverable from third parties in circumstances where an employee obtained a judgment against a third party. Thus, s 48 of the Act provided as follows:

48 Compensation not payable where damages recovered
(1) This section applies where:

(a) an employee recovers damages in respect of an injury to the employee ... being an injury ... in respect of which compensation is payable under this Act ... .

(3) If, before the recovery of the damages by ... the employee... any compensation under this Act was paid to the employee in respect of the injury ... the employee ... is liable to pay to Comcare an amount equal to:

(a) the amount of that compensation; or

(b) the amount of the damages;

whichever is less.

...

(7) Where an employee ... establishes to the satisfaction of Comcare that a part of the damages referred to in subsection (1) did not relate to an injury ... in respect of which compensation is payable under this Act, subsection (3) applies in relation to that employee ... as if the amount of the damages were an amount equal to so much of the amount of the damages as did relate to an injury ... in respect of which compensation is payable under this Act.

161 The sole question raised by the Ambulance Service was whether the amount paid to Mr Worley (presumably by or on behalf of Comcare) arose out of the bee sting, rather than the intracranial haemorrhage. If, it was contended, the payment arose out of the former rather than the latter, whereas the damages awarded by the Court related to the latter, there would be no liability to repay Comcare.

162 The defence, as pleaded, did not refer to the terms of s 48, nor did it adopt the terminology of that provision. This was apt to cause confusion and did. The substance of the defence was that when, on 15 October 1998, Mr Worley signed a form entitled "Claim for Rehabilitation and Compensation", no doubt made pursuant to s 54 of the *Compensation Act*, he referred to the injury as a bee sting. There was no reference to the intracranial haemorrhage. On 22 October 1998 Australia Post (not Comcare) apparently replied accepting liability under s 14 of the *Compensation Act* and approving payment "in respect of anaphylactic reaction to bee sting (toxic shock) sustained on 7 October 1998".

163 Some two weeks later, on 5 November 1998, Australia Post (not Comcare) again wrote to Mr Worley stating that the basis for the initial determination under s 14 of the *Compensation Act* had been amended so that it was now "in respect of intra cerebral haemorrhage resulting from the administration of adrenaline following an anaphylactic reaction sustained in the course of your employment on 7/10/98." The short point sought to be made was that a person who had made a determination with respect to liability under s 14 had no power to amend the description of the injury identified in the initial determination.

164 Support for this contention was sought in the decision of the Full Court of the Federal Court in *Lees v Comcare* [1999] FCA 753 (Wilcox, Branson and Tamberlin JJ). In particular, reliance is placed upon what the Court said at [35] in relation to the significance of a determination under s 14 of the Act. However, the five findings identified there are entirely beside the point. The issue being considered by the Full Court was whether the Administrative Appeals Tribunal had jurisdiction to consider a claim by Ms Lees for permanent impairment. Unless a decision had been made under s 24 of the Act and had been reconsidered under s 62, the Tribunal had no jurisdiction: s 64. The comments made by the Full Court in relation to the nature of a determination of liability under s 14 were for the purpose of demonstrating that such a determination did not extend to issues dealt with under s 24.

165 More significantly for present purposes, the Court noted at [30] and [31]:

"The form approved by Comcare as required by s 54(2)(a) reflects the generic nature of a claim under the section. It is headed 'Claim for Rehabilitation and Compensation'. It requires the provision of detailed information concerning the injury and time taken off work because of the injury, but it does not provide for the provision of information of the kind that would be necessary before a determination could be made under, for example, ss 16, ... 24 and 25 of the Act.
The claim, and the claim form, envisaged by s 54 of the Act reflects the practical reality that a claim for compensation is likely to be made relatively soon after the suffering of an injury, particularly if incapacity for work or significant medical expenses result from the injury. At the time that this initial claim is made it may be quite impossible for the employee to provide details of, for example, the fact or extent of any permanent impairment. For the reasons expressed below, the determination which is made on a claim, as required by s 54 of the Act, will ordinarily be a determination under s 14 of the Act."

166 The scheme of the Act thus described is inconsistent with the suggestion by the Appellant that no variation of a determination can be made under the *Compensation Act*, favourable to an employee, without some formal application being made or there being a formal redetermination under s 62. All that the Full Court held in *Lees* was that an employee could not seek review of a decision of the relevant determining authority by the Tribunal, until that decision had in fact been made and reconsidered.

167 In any event, the defence must address the operation of s 48(3) of the *Compensation Act*. If the amount paid by Comcare to Mr Worley was paid "in respect of" an injury which included his intracranial haemorrhage, then Mr Worley would be liable to make a repayment to Comcare in accordance with that provision. If the injury identified in the letter from Australia Post of 5 November 1998 involved a valid determination under s 14 of the *Compensation Act*, no question as to Mr Worley's liability under s 48(3) can arise. The suggestion that the determination was invalid is without merit and should be rejected. Indeed, it is by no means clear that the original identification of the injury as a bee sting would not itself have been sufficient, on the basis that that injury 'resulted in' an incapacity or impairment for the purposes of s 14(1). To avoid this conclusion, it would

be necessary to show that there was no sufficient causal connection between the bee sting and the intracranial haemorrhage, for the purposes of the *Compensation Act*. This alternative basis for liability in Comcare, and hence liability in Mr Worley to repay moneys to Comcare, was not explored.

168 His Honour's conclusion at [137] rejecting the defence, was correct. The appeal with respect to that finding should be dismissed.

(2) *Griffiths v Kerkemeyer* damages

169 The plaintiff's claim, as allowed by the trial judge, included an amount of $70,775 on account of past gratuitous services, from 7 October 1998 to 30 June 1999 (which was not challenged) and a subsequent amount calculated from 1 July 1999 until October 2004 of $158,091. That figure was calculated at the rate of 21 hours per week at an amount of $27.50 per hour. The Appellant argued that a more appropriate calculation would have allowed only 11 hours per week at a rate of $20 per hour, with a resultant reduction of the claim by approximately $100,000, together with a reduction in the amount of interest permitted.

170 In addition, his Honour allowed an amount of $460,651 for future gratuitous assistance, calculated at 16 hours per week at a rate of $28.50 per hour. The figure appears to have been calculated for a period of approximately 19 and a half years. The Appellant says the appropriate figure should have been calculated at the rate of $20 per hour, for 11 hours per week, for 15 years, giving a figure of $139,084.

171 There are significant sums of money involved in these complaints, but a troubling feature of this aspect of the appeal is the manner in which the issue was dealt with before the trial judge. Despite the sums at issue, the trial judge was merely provided with two schedules of damages and with virtually nothing else by way of submissions in order to resolve differences between the two. In relation to each item of the plaintiff's schedule, a figure was given, together with the basis of the calculation and the evidence upon which the claimed entitlement was based. The defendant responded with a schedule which contained only two significant categories of damage, namely general damages at $180,000 and gratuitous assistance, both past and future, amounting to a little over $300,000, including interest on past gratuitous assistance. In relation to some categories, virtually no references were given to justify the alternative suggestions. For example, while the second period of past gratuitous assistance was sought to be assessed on the basis now relied upon, no reason was provided to the trial judge for adopting the particular hours per week or hourly rate. Similarly, in respect of future gratuitous assistance, reference was made to a number of passages in the plaintiff's evidence, but none of them provided a justification for the alternative figures suggested. Accepting that these matters involve an evaluation of the amount of assistance required and a reasonable rate of assessment, in monetary terms, the trial judge was offered little to indicate why one set of figures should be preferred to another. In those circumstances, the difficulty for the Appellant is to show error in the figure adopted.

172 The Appellant also complains that the figures awarded were, in some global sense which is not identified, manifestly excessive; that conclusion must flow from individual elements of the claim made by the plaintiff at trial. But the plaintiff's claims were based on material in the evidence and could not be simply ignored as patently unsustainable. Where the defendant, without reasonable explanation, failed to offer a clear and reasoned alternative approach at trial, at least with respect to particular items where a challenge could properly have been made, it will encounter difficulty in demonstrating error on appeal. All that has been shown is that, absent any specific reason to do otherwise, his Honour adopted an evaluative judgment which was reasonably open to him. The challenge on this score should be rejected.

(3) Funds management

173 The plaintiff obtained an amount of $545,677 on account of "funds management". His Honour noted that the Ambulance Service had submitted that "there was no need for funds management": at [261]. He awarded an amount on the following basis:

"Mr Worley will receive a substantial amount of money after Australia Post has deducted the amounts to which it will be entitled. He has had no experience of handling large amounts of money. He suffers from intellectual difficulties which will make it impossible in my estimation to manage such a sum."

174 According to established principle, the mere fact that a plaintiff will be required to manage a fund, perhaps a substantial fund, for the rest of his or her life, will not justify the inclusion in the award of an amount to cover professional costs of assistance in managing the fund, unless the need for such assistance itself flowed from the tortious conduct. That principle was explained in *Nominal Defendant v Gardikiotis* *[1995] HCA 56;* (1996) 186 CLR 49. It was further explained in a judgment of the Court in *Willett v Futcher* *[2005] HCA 47;* (2005) 79 ALJR 1523. In the latter case, the Court held that a person who was incapable of managing his or her own affairs, and whose incapacity was caused by the negligence of the defendant, should receive "an amount assessed as allowing for remuneration and expenditures properly charged or incurred by the administrator of the fund during the intended life of the fund": at [49].

175 In the present case, it is not suggested that Mr Worley required the appointment of a guardian. However, his Honour held at [252] that, in addition to his physical disabilities caused by the haemorrhage, he suffers other disabilities:

"He suffers cognitive dysfunction. His personality has changed and has consequently suffered greatly. His condition is permanent."

176 Reading these findings with the findings referred to above concerning his intellectual difficulties, noted by the trial judge at [261], it should be inferred that the tortious conduct caused him to suffer intellectual disabilities of a kind which prevent him administering the fund which he would receive if entitled to damages. It was not

suggested in this case, in contrast to the circumstances identified in *Willett*, that there were any statutory provisions affecting the calculation of the costs of managing the fund. Accordingly, it was appropriate for his Honour to award an amount on account of funds management, which he did, on the basis of the evidence before him. The calculations presented depended on the amount under management, the costs of management and the period for which the fund would need to exist.

177 Once it is accepted in principle that an amount is properly awardable under this head of loss, the only issue raised with the calculations presented by the plaintiff at trial concerned the quantum of the fund. The Appellant submitted that the following items should be removed:

(a) the amount liable to be repaid under the *Compensation Act* to Comcare;
(b) the amount awarded for home modifications, and
(c) the amount for future equipment.

178 Those deductions should be accepted as they are amounts which will not require ongoing management. The Appellant submitted that the amount awarded for past gratuitous care should also be deducted, on the basis that the money would be paid to the people who had provided the care. However, there would have been no legal obligation for Mr Worley to take that step and there is, accordingly, there is no reason to remove that amount from the sum subject to management.

Out-of-pocket expenses: hydrotherapy

179 His Honour accepted a claim for $106,071 on account of “hydrotherapy”. This was apparently calculated at the rate of $25 per week for 15 years. The argument put for the Appellant was that this figure involved an element of double-counting, in that there was overlap with the allowance of an amount for upgrading Mr Worley’s home pool.

180 Whether that was so or not, all that was put by the defendant at trial was that an amount of $25 per week should be allowed for 15 years for hydrotherapy. Whilst that gave a figure of $15,805, nothing was put before the trial judge as to why the plaintiff’s figure should not have been accepted. The plaintiff’s calculation involved a cost of $105 per week, appropriately discounted.

Allowance for future surgery

181 The claim made by the plaintiff appears to have involved two hip operations, one of which was anticipated in August 2004, and a second some 14 years later. The only complaint now made by the Appellant in that regard, is that there was a failure to discount by 15%, on account of vicissitudes. Although it may be assumed that such a principle should be applied generally, if it had not been applied in the plaintiff’s calculation, it would have been reasonable to expect the defendant to have noted that and

made the point at trial. Rather, the plaintiff simply submitted that no amount should be allowed for future surgery and referred to evidence given by the plaintiff to the effect that if he required future surgery he would abide by his doctor's suggestions: Tcpt, p 64. That would not have assisted the trial judge to identify the present ground of complaint.

Other grounds

182 It is to be observed that the grounds argued by the Appellant on the appeal, in relation to the assessment of damages, were significantly narrower than those contained in the notice of appeal. The first ground, which was argued, if faintly, was that his Honour erred in failing to give reasons for the quantum of damages awarded. As was pointed out to counsel in the course of argument, if successful, that would merely mean that this Court should reassess the damages on a rehearing. However, and more significantly, his Honour should not have been criticised for failing to give reasons when he adopted a claim made by the plaintiff, by reference to supporting material, in preference to a simple denial of the claim, without reasoning, by the defendant. A formalistic response of that kind from a legally represented party should not be treated as necessarily engaging an entitlement to a reasoned explanation for its rejection. In the absence of reasoned submissions for taking a different course, his Honour was entitled to adopt relevant elements in the plaintiff's schedule as justified in the terms on which they were presented.

183 A further ground of appeal alleged that the award of damages were "manifestly excessive". As already noted, the award was calculated on an item by item basis. One would expect any manifest excess to be referable to specific items. A ground which seeks to attack an award globally, when the assessment was made on an item by item basis, will rarely be sustainable, unless it can be shown that the item by item calculation was an inappropriate approach. No such argument was presented in this case.

Conclusions as to damages

184 Apart from the amounts by which the fund under management should be reduced, in order to calculate an appropriate fee, the grounds of appeal relating to the assessment of damages should be rejected. However, because the plaintiff should have failed on liability, no purpose is served in recalculating the putative award.

Orders

185 In accordance with the foregoing reasons, the only orders required of the Court are as follows:

(1) Appeal allowed.

(2) Judgment of trial judge set aside and in lieu thereof order that judgment be entered for the defendant.

(3) Order that the Respondent pay the costs of the Appellant of the appeal and in the Court below.

(4) Grant the Respondent a certificate under the *Suitors' Fund Act* 1951 (NSW).