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Republic of South Africa

**IN THE HIGH COURT OF SOUTH AFRICA
(WESTERN CAPE DIVISION, CAPE TOWN)**

Case No: 4621/2014

Before:
The Hon. Mr Justice Binns-Ward

Hearing: 19-20, 23 March, 16-19 April,
21-23 May, 6 August 2018
Judgment: 10 September 2018

In the matter between:

A M

First Plaintiff

(in his personal capacity and on behalf
of his minor son **J M**)

S M

Second Plaintiff

(in her personal capacity and on behalf
of her minor son **J M**)

and

THE MEC FOR HEALTH, WESTERN CAPE

Defendant

Judgment

BINNS-WARD J:

Introduction

[1] This action concerns a claim for compensation against the provincial health department arising out of the tragically catastrophic consequences of a head injury suffered by a young boy. The plaintiffs are the child's parents. They have sued in a representative capacity on behalf of the minor and also in their personal capacities.

[2] Pursuant to an agreement between the parties' legal representatives, a ruling was made in terms of Uniform Rule 33(4) shortly after the commencement of the hearing directing that the issues of negligence and causality would be tried separately from, and before, the remaining issues in the action. This judgment is confined to the adjudication of those issues. It was implicit in the parties' agreement that they accepted that if causal negligence on the part of the treating medical officer were established, it would be reasonable in the given context - in particular, the defendant's admission that the treating medical staff had been under a legal duty of care to treat the patient with professional skill and care - that liability for such damages as the plaintiffs might prove would follow;¹ in other words, that the element of wrongfulness for the purpose of delictual liability² would also have been established.

[3] The plaintiffs alleged that the ultimate consequences of the child's injury followed directly upon the professional negligence of the duty registrar who initially examined him when he was brought to the provincial hospital trauma unit. A veritable litany of grounds of negligence was pleaded in their particulars of claim. In his opening address, their counsel, Mr *van der Merwe* SC, abridged these by explaining that essentially the plaintiffs' case was that the duty registrar had been negligent in the following respects -

- i. by failing to refer the child for radiographic examination, which would have identified that he had sustained a linear skull fracture in his left temporo-parietal region and served (in counsel's words) as 'a red flag warning' to the treating physician to look out for intracranial injury;

¹ Cf. *Oppelt v Head: Health, Department of Health Provincial Administration: Western Cape* [2015] ZACC 33, 2015 (12) BCLR 1471 (CC), 2016 (1) SA 325 at paras. 53 and 97 and *Chapeikin and another v Mini* [2016] ZASCA 105 at para. 24.

² The claim was also pleaded, in the alternative, in contract. Having resisted the proposition when it was raised with him during the opening address, the plaintiffs' counsel eventually conceded in argument after the completion of the evidence that the claim pleaded in contract could not be sustained.

- ii. by failing to keep the child under observation for a period after initial examination and to reassess his condition at the end of such period before discharging him;

and

- iii. by failing to give ‘a full and proper explanation’ to the child’s father of the necessity to keep the child under observation for signs of any deterioration in his condition after his discharge from the trauma unit.

The first two of these grounds of alleged negligence involve an examination, in a mainly uncontested factual context, of the reasonableness of the clinical judgment made by the treating doctor; whilst, as will appear, the third turns more on a purely factual determination.

The factual context

[4] The plaintiffs’ son, J, fell and hit his head against the hard road surface outside their home in Heideveld, Cape Town during the afternoon of 23 August 2011. He was six years and eight months old at the time. His 18-year old elder brother, Jason, who looking after him at the time, was alerted to the incident when he heard J crying. J’s father was informed by Jason about the accident when he returned home from work at approximately 17h20. J’s father’s related that he had been told that it had happened just after 16h00, when J had been watching his cousin, Tyler, riding on a skateboard. A neighbour’s dog had escaped from its owner’s yard and run into the road. J had been tripped when the chain attached to the dog caught around his leg.

[5] J’s father found his young son sitting on the bed in the main bedroom. He was dressed at the time in the pyjamas into which he had been changed from his school clothes before the incident. J burst into tears when he saw his father and complained that his head was sore. He was able to tell his father what had happened to him. There was nothing in the version of events given to the J’s father by either of his sons to suggest that J had lost consciousness at any stage after his fall. There was also nothing to indicate that he had vomited, or had a seizure. J’s reported ability to relate what had happened to him was inconsistent with his having experienced amnesia.

[6] J’s father was concerned about the size of the swelling that he observed on J’s head and decided immediately to take him to the nearby Red Cross War Memorial Children’s Hospital, about 20 minutes’ drive away. He described the swelling as

being about ‘the size of half a tennis ball’, but conceded under cross-examination that he may have previously used the description ‘half an orange’ for vivid effect. He did not feel it to ascertain its consistency.

[7] J was examined by the registrar on duty in the paediatric hospital’s trauma unit. The documented record of his examination and treatment there that was put in evidence consists of the ‘trauma unit record’ form completed by the duty registrar,³ the ‘trauma register’⁴ and the ‘head injury’ child patient discharge form that is given to the child’s caregiver when a child with a head injury is discharged home from the trauma unit (‘the head injury form’).⁵

[8] The trauma unit record is a pro forma document that is filled in by the treating doctor. J’s form, which, save for the particulars concerning his reception at the unit, was completed by the duty registrar, recorded the following information:

- i. His reception in the unit at 18h10 on 23 August 2011;
- ii. ‘Cause’: Fall Stairs/Steps
- iii. ‘Place of occurrence’: Own home inside
- iv. ‘Admission’: Not admitted
- v. ‘Disposal from trauma unit’: Home/GP
- vi. ‘Unconscious’: No
- vii. ‘Shock’: No
- viii. ‘Resuscitation’: No
- ix. ‘Anaesthetic’: None
- x. ‘Self Infliction’: No
- xi. ‘Abuse’: No
- xii. ‘Anatomy’: Skull
- xiii. ‘Pathology’: Closed tissue
- xiv. ‘ABBR Injury Score (AIS)’: Minor
- xv. ‘Treatment’: ‘Advice/Medication/HIF’ [head injury form]

[The information provided in respect of (ii)-(xv) was provided by selection from predetermined multiple choice possibilities embedded in the standard form]

³ Tab 7, pp. 1-4 in the trial file. The ‘trial file’ comprised of copies of the pleadings, pre-trial minutes, the expert witnesses’ *curricula vitae*, evidence summaries and ‘joint minutes’, the relevant medical records and the medical literature to which reference was made in the course of the oral evidence. The documents were arranged in separate sections of the trial file identified by numbered tabs.

⁴ Tab 7, p. 31.

⁵ Tab 7, pp. 5-6.

- xvi. ‘History’: *Pt’s foot caught and he fell, bumping L side of head. No LOC [loss of consciousness], no vomiting, no seizures.*
- xvii. ‘Examination’: *Pt awake & alert GCS 15/15.*
- xviii. *Vitals: RR [respiratory rate] 22; HR [heart rate] 92; BP [blood pressure] 104/68; T [temperature] 36,1°C. [These readings were also recorded on a ‘child triage trauma score’ document,⁶ which scored admitted patients according to various criteria for priority of treatment. The triage trauma score document, which was completed by the nursing staff also reflected a notation that J’s blood oxygen saturation was 99%. The duty registrar transcribed the information concerning J’s vital signs from the triage score document.]*
- xix. *Bump L temporal area above & behind ear.*
PEARL [pupils equal and reactive to light]. Congruent N [normal] eye movements.
No other neurology.
- xx. © [Plan of management]
- *Reassurance*
 - *HIF [head injury form]*
 - *F/U PRN [‘follow / up’ and ‘pro re nata’ (i.e. ‘if necessary’)]*

[The italicised parts of the information given in xvi-xx above represent the examining doctor’s handwritten notes, with the meaning of the acronyms inserted by me in non-italicised script between square brackets.]

The trauma unit record form contained a page with various anatomical drawings, on which the treating physician could mark the position of any injury that had been noted. The duty registrar omitted to annotate that part of the document. She conceded that she should have done so. I did not, however, understand any of the expert witnesses to seriously suggest that that the omission had been material in the current case. The written notes adequately described the position of the visible injury.

[9] Inasmuch as the note on the trauma unit record recording that the accident had happened ‘indoors’ was inconsistent with the facts, it bears mention that in his testimony J’s father used the word ‘floor’ instead of ‘ground’. That use of language could, in my view, mislead the listener as to the locality of the incident. That said, the occurrence indoors of a skateboard-related incident would be somewhat out of the ordinary, I would have thought. The duty registrar’s evidence was of no assistance in this regard as she had no independent recollection of the history that she took, other than that evident from her notes on trauma unit record. She was also unclear, six and a

⁶ Tab 7; p. 3.

half years after the event, whether she had elicited the history from J's father, or J himself. She did, however, remember that she had been able to converse with J.

[10] The Glasgow Coma Scale ('GCS') score of 15/15 recorded on the trauma unit form indicates that J was found by the examining doctor to be fully conscious and alert. In a patient over 4 years old the score is determined with reference to the total points achieved on testing using three indices: Eye Opening (score 1-4), Verbal Response (1-5) and Motor Response (1-6). An optimal response in respect of each index gives a total score of 15 (4+5+6) out of a possible 15 points (GCS 15/15), whereas a total lack of responsiveness on each index would give the lowest possible total score of 3 (1+1+1) out of 15 (GCS 3/15).⁷

[11] It subsequently became apparent, in circumstances to be discussed later in this judgment, that J had sustained a linear skull fracture. The fracture would not have been palpable on physical examination, and was verifiable only upon radiological examination by X-ray or CT-scan.

[12] The expert medical evidence indicated that severe pain in the given circumstances could be indicative that the patient had sustained a skull fracture, and therefore be a pointer to the need for a radiological examination to be undertaken. An elevated heart rate or blood pressure reading is often indicative of the incidence of significant pain. It was common ground that J's recorded vital signs, including heart rate and blood pressure, were within acceptable ranges. It was understandably uncontested that J must have been experiencing some degree of pain as a consequence of his head injury. However, his normal vital signs readings were supportive on the probabilities of the reliability of the duty registrar's evidence that he had not offered any complaint or shown any visible signs that his pain was severe.

[13] The trauma register reflects that J was seen in the trauma unit between 18h15 and 18h30 and that he was discharged home after being given some Panado. Panado is a paracetamol-based mild analgesic. The recorded information is essentially consistent with J's father's recollection of the events, but there was doubt as to whether he correctly recalled by whom the medication had been administered. He said that the syrup had been administered by the doctor. The duty registrar did not,

⁷ Tab 9; p. 31.

however, recall having prescribed or administered Panado, but said that this could have been done by the nursing staff in the unit. (The trauma register, in which the reference to Panado appears, is in point of fact written up by the nursing staff, not the attending physician.) Mr M testified that he was also given medication in an orange and white box to take home with J. He understood that the boxed medication was to treat pain and nausea. The provision of the boxed medication was not noted in the hospital records.

[14] Some criticism was directed during the trial at the ‘scantiness’ of the notes made by the duty registrar. The register reflects that three other children with injuries were received in the unit and also attended to by the same medical officer within 35 minutes of J’s arrival there. Two of them were infants aged 2 years or younger and the other was another six-year old boy. The other six-year old boy and one of infants both arrived at the unit at 18h20, just five minutes after the duty registrar commenced examining J. Two of the three other patients had head injuries. I mention this because Dr. Goosen, a general surgeon much experienced in trauma unit work who testified at the instance of the plaintiffs, conceded that the detail of the notes that a treating doctor might make in the trauma unit would be affected by the exigencies of the situation in which the physician was operating.

[15] It is generally accepted, understandably so, that head injury patients should be assessed as soon as possible after arrival at an accident and emergency unit. And it appears from the medical literature to which I was referred in the course of the evidence that infants under two years old are particularly vulnerable to life threatening consequences from even relatively minor head trauma, and therefore requiring of especially urgent assessment. Notwithstanding her concession under cross-examination that her failure to expressly note certain matters on the trauma unit record could not be ascribed to time constraints, it seems clear to me from the information in the trauma register that the duty registrar would have been working under some pressure at the time.⁸ In this regard it is convenient to record at this point that the registrar impressed in the witness box as a notably self-effacing witness. I should also mention that the opinion was expressed by an expert witness, Prof Taylor,

⁸ In his heads of argument, the plaintiffs’ counsel argued that J was the first patient in the trauma unit for about two and a half hours. That is true, but the duty registrar had been on duty for only ten minutes when J presented as the first of four patients to arrive at the unit within a short period.

who testified at the instance of the defendant, that the notes made by the registrar were ‘adequate’ despite their scantiness.

[16] J’s father testified, consistently with the indications to that effect noted in the trauma register, that the duty registrar was able to attend to them immediately upon their arrival at the trauma unit. He said that he placed J in a sitting position on a bed and briefed the registrar as to what had happened. Mr M confirmed that J was also able to give his own account of the accident to the doctor.

[17] J’s father left his son with the duty registrar and went elsewhere in the building to collect J’s patient folder. He said that when he returned about 15 minutes later the doctor informed him that she had examined J and determined that it would not be necessary to send him for a scan. She said that J would be ‘fine’. The first plaintiff confirmed that he was given a copy of the head injury form when J was released to be taken home.

[18] It is evident from the copy of the head injury form in the trial file⁹ that it was signed by the trauma unit registrar, who also endorsed her name and university degree qualifications (M.B., Ch.B.) on it.¹⁰ J’s father said that he was unable to remember if the registrar had signed and endorsed the document in his presence.

[19] The head injury form read as follows in English and Afrikaans:

NAME / NAAM: [J’s surname and initial] J

He / She has a head injury.

Bring your child back to hospital immediately at any time of the day ir (*sic*) night if he / she should complain of:-

- a severe headache
- become increasingly difficult to wake
- loose (*sic*) consciousness
- start vomiting excessively
- have fits or develop paralysis
- or in any way behave peculiar (*sic*)

Hy / Sy het ’n kopbesering.

⁹ See note 3 above, concerning the character of the ‘trial file’.

¹⁰ Tab 7; p. 5.

Bring hom / haar onmiddelik – enige tyd van die dag of nag terug na die hospitaal indien hy / sy :-

- kla van 'n swaar hoofpyn
- meet (*sic*) lomerig word of nie maklik wakker gemaak kan word nie
- bewusteloos word
- begin om op te gooi
- stuiptrekkings kry of verlam word of hom/haar ip (*sic*) enige manier snaaks gedra (*sic*)¹¹

I have quoted both the English and Afrikaans versions of the instructions because they differ slightly in their detail. English is the home language in J's family, but his father was conversant with Afrikaans. The English and Afrikaans versions of the instructions both appeared, the one immediately above the other on the obverse side of the single page document. The reverse side of the page contained instructions in isiXhosa.¹²

[20] J's father testified in his evidence in chief that he had been instructed to take the head injury form home and read through it, and that he should telephone the hospital if he had any concerns. He said that he had not been given any explanation as to the significance of the form's content. He did also say, however, albeit only under cross-examination and having been confronted with a note of the instructions that had been given to one of the plaintiffs' expert witnesses, that he had been instructed to 'monitor' J. He understood that to mean that he should 'watch' or 'keep an eye on' him. He did not say what it was that he been told to watch out for. He resisted the proposition put to him in cross-examination that the trauma unit registrar would have acted in accordance with her usual practice, which was to expressly explain to the patient's caregiver the importance of looking out for signs of drowsiness, sleepiness, vomiting, seizures and worsening pain. Under cross-examination, J's father said that he '*didn't worry about [the form] too much because the doctor told me he was fine*'.

¹¹ 'He/She has a head injury.

Bring him/her back to the hospital immediately at any time of the day or night if he/she:-

- *complains of severe headache*
- *becomes more drowsy or cannot be woken easily*
- *becomes unconscious*
- *starts to throw up*
- *has seizures or develops paralysis or in any manner behaves strangely*

(My translation.)

¹² English, Afrikaans and isiXhosa are designated as the official languages of the Western Cape Province in terms of s 5 of the Constitution of the Western Cape, 1997 (Western Cape Act 1 of 1998).

[21] It must be said, however, that J's father's recollection of his exchanges with the duty registrar, particularly whether she had asked him questions about loss of consciousness, vomiting or seizures, was hazy. For example, he said that she *may* have asked him about seizures, and that *if* she had, his answer would have been 'no'. It was evident that he did not pretend to any recollection of the detail of their conversation. As already mentioned, he was also unable to recall whether the duty registrar had signed and endorsed the head injury form with her name and academic degrees in his presence, or not.

[22] Mr M was also given a sick certificate in terms of which J was booked off school until 26 August 2011 (i.e. for two days).

[23] Upon leaving the trauma unit J's father carried his son to the car, even though the child was in a condition to have walked there unassisted. He explained that he had carried the child as a way of cossetting or comforting him. He put J lying down on the back seat of the car and then drove to collect J's mother from her place of work about 10 minutes' drive away. During the journey J complained that his head was still sore, but soon went off to sleep. His father said that he thought that the Panado syrup had made J drowsy. The expert evidence was that Panado can have a sedative effect on a tiny percentage of users. Indeed, it is regarded as safe to administer to head-injured patients because its effect is unlikely to mask developing symptoms of undiagnosed traumatic brain injury. But J's father said that he had often used Panado syrup in the past to help his young children go to sleep at bedtime when they were feverish or in pain. He indicated that if he had been warned to be alert to signs of drowsiness in J he would have taken his son back to the hospital immediately when he fell asleep in the car.

[24] J did not wake up when his mother got into the car at approximately 19h00, and when she moved him onto her lap he remained asleep. On arrival at the family home J was carried to his parents' bedroom, where he usually slept with them in the bed, and put under the bedcovers. He did not wake up at any stage while being moved about. He also remained asleep when his parents came to bed at approximately 21h30. J's father said that he had not tried to awaken J before he retired to bed for the night because he had not been aware that he should do so to check on the child's condition. He had also not been concerned that J should use the lavatory, as the child would normally do before retiring for the night.

[25] It was J's father's habit to take the child to the lavatory between 03h00 and 04h00 hours every morning. When he tried to arouse J in the early hours of 24 August 2011 he was unable to awaken him, and noticed that he was in what he referred to as 'a deep sleep – not a normal sleep'. He was concerned by this and immediately telephoned the hospital. He testified that he used the telephone number on 'the page that they gave me'. He said that a woman, whom he was unable to identify, answered his telephone call. He said that she had asked when J usually woke up. He told her that it was at 06h30. She advised him that if J were still in a deep sleep at 06h30, he should bring the boy back to hospital.

[26] Very soon after his father's telephone call to the hospital J wet the bed and vomited. His parents changed his clothing preparatory to taking him back to the hospital. J then suffered a seizure. His parents rushed him to the hospital, where he was admitted.

[27] The entries on the clinical notes in J's patient folder reflect that he arrived back at the hospital at 04h00 and was sent by the duty registrar for an emergency CT-scan.¹³ The neuro-surgeon on duty that night was summoned by telephone and, according to the notes, began attending to J at approximately 04h20.¹⁴ The CT-scan identified that J had a linear temporo-parietal fracture under the swelling on the left side of his head. It also identified that J's middle meningeal artery had been damaged, which had led to intracranial bleeding and the resultant development of an epidural haematoma.¹⁵ The damage to the artery was associated with the fracture.

[28] The displacing effect on the brain of the increasing intracranial pressure caused by an epidural haematoma eventually results, if unchecked, in encephalic herniation, which gives rise to the complicating consequences that in this case manifested in J's resultant permanent disability. J underwent emergency surgery to make an opening in his skull (a craniectomy) in order to relieve the pressure within

¹³ Computed tomography.

¹⁴ Tab 7; p. 18.

¹⁵ The term '*extradural haematoma*' is also used to describe an epidural haematoma. An epidural haematoma is a build-up of blood in the intracranial space between the skull and the dura, which is the membranous outer encasement of the brain.

his brain caused by the epidural haematoma. But, as the CT-scan confirmed, an uncal herniation had by that time already occurred.¹⁶

[29] Tragically, while the surgery saved J's life, the intervention was too late to avoid the consequences of the damage already caused by the intracranial pressure built up by the expanding epidural haematoma. J was rendered spastically tetraplegic. The medical witnesses engaged by both sides in the case were agreed in their opinion that by the time J was brought to the hospital in the early hours of 24 August 2011 matters would have already deteriorated too far for there to have been any hope at that stage of obtaining a better outcome. They were also agreed that the treatment that J received that morning was entirely appropriate and above criticism.

[30] J's father was unable to offer any explanation why the clinical notes related to J's treatment at the hospital on the morning of 24 August 2011 noted that J had fallen from a skateboard ('J-board') when a dog's leash 'got caught under [the] wheel',¹⁷ or why the notice given by his attorney to the defendant, in terms of s 3 of the Institution of Legal Proceedings against certain Organs of State Act 40 of 2002, had alleged that J had been admitted for treatment at the hospital 'following a skateboarding accident'.¹⁸ He denied that he had told his attorney, or any doctor that J had fallen from a skateboard. The provenance of this incorrect information was not satisfactorily explained and remains a mystery. One would have thought that the attorneys' letter would have been written in accordance with the instructions obtained by them from their clients, the plaintiffs.

[31] I should also mention that in response to a request by the defendant for trial particulars concerning 'the circumstances resulting in J's head injury', the plaintiffs alleged that J's fall had happened '[w]hile J was playing with his skateboard, the leash of a large dog caught J's leg while the dog was running and J was as a consequence thrown onto the road, landing on his head'. The pleaded version of the occurrence therefore also differed from that related in the first plaintiff's evidence. Neither of the persons identified as having been present when J fell was called as a witness.

¹⁶ The uncus forms part of the brain's temporal lobe. The process of uncal herniation involves the displacement of the uncus within the brain.

¹⁷ Tab 7; p. 18.

¹⁸ Tab 7; p. 32ff, at p.33 (para. 2).

[32] Before moving on to treat of the evidence of the trauma unit registrar I should record that J's father made a generally satisfactory impression on the witness stand. I have no reason to doubt that he gave his evidence of the events of nearly seven years ago to the best of his recollection. It was evident, however, that his memory was not always accurate and reliable. In addition to the matters I have already described, he was disquietingly vague about whether or not he had met with the expert witness, Dr Goosen, at any time before the trial, even as recently as 2015. This served to indicate that he did not have a good or reliable memory.

The evidence of the trauma unit registrar who attended to J on the evening of 23 August 2011

[33] The duty registrar who attended to J in the trauma unit testified at the instance of the defendant. She had graduated with her primary medical degrees in 2006, and thereafter served the usual two-year period as an intern, followed by one year's community service as a qualified medical doctor and a subsequent period of about 18 months' 'pre-specialist work' at the Victoria Hospital in Wynberg. She completed an ATLS course¹⁹ in 2007 during her internship. In August 2011, she had just commenced serving her registrarship to qualify as an orthopaedic specialist. She has since qualified as an orthopaedic surgeon and currently works as such with a speciality in paediatrics at the Red Cross Hospital. It was not in issue that the duty registrar had been appropriately qualified at the time to undertake the initial diagnosis and treatment of J when he was brought to the trauma unit. The allegation in the amended particulars of claim that she should have summoned more senior medical personnel for assistance was not supported, even by the plaintiffs' expert witnesses.

[34] The duty registrar testified that she had knowledge at the time of the Guidelines for Integrated Management of Head Injury at Red Cross Hospital (third draft).²⁰ To the best of her recall the document had been included in an information pack with which she had been briefed when she commenced working at the hospital. However, she was not aware of, and had not previously seen, the Head Injury Guidelines Handbook for the Western Cape to which extensive reference was made

¹⁹ ATLS is the acronym for 'Advanced Trauma Life Support'. ATLS is a system developed by the American College of Surgeons for the effective care and immediate management of traumatically injured patients.

²⁰ Tab 9; p. 1 ff.

during the evidence of the expert witnesses. It was not contended from any quarter that a doctor on duty in the trauma unit should have followed either of these guidelines on a prescriptive basis. Their evident purpose was to encourage a standardised approach to diagnostic and treatment questions, of which practitioners would in any event be expected to have a general knowledge that they would bring to bear according to the exigencies of the varying circumstances of each patient presenting for treatment.

[35] The duty registrar also testified that the Red Cross Hospital ‘Imaging Protocol for Head Injuries’²¹ was prominently displayed on a wall in the trauma unit. She regarded the protocol as being of a generally prescriptive effect, but accepted that she could, and indeed would be obliged to, depart from it if the critical needs of a particular presented case demanded that.

[36] The duty registrar testified that J would have undergone a triage assessment²² by qualified and experienced nursing staff when he arrived at the trauma unit. She pointed out that the records reflected that he had been categorised as falling into the green group, which indicated that he had been determined to be a patient in the lowest category for priority of treatment. Her own examination of the patient gave her to believe that J had sustained ‘*a minor injury with an extremely low risk of having a serious underlying brain injury*’. Later in her evidence she stated that she had considered the risk of J developing an epidural haematoma to have been ‘*virtually zero*’. Assuming that the swelling on J’s head did not have a boggy (used in its sense of ‘spongy’) or fluctuant consistency, the medical literature to which reference was made in the trial bore out the reasonableness of the doctor’s assessment. I shall discuss this in greater detail presently when I consider whether the duty registrar acted reasonably in not referring J for a radiological examination.

[37] The registrar was certain that she would have investigated the consistency of the swelling on J’s head. Her evidence initially was that had it been fluctuant she would ‘at the very least’ have made a note of that. She later explained that she would have regarded a fluctuant swelling as indicative of the possibility of an underlying

²¹ Tab 7; p. 30, quoted in para. [94] below.

²² ‘Triage’ is a medical term applied to the system of assigning an order of precedence for the treatment of multiple patients according to the severity of their injuries or condition.

skull fracture. Had she found that the bump was fluctuant she would therefore have referred J for a CT-scan. In this regard it perhaps bears mention that the registrar did refer another patient who presented at the unit minutes after J's arrival for a scan.

[38] The duty registrar did not make a note of the consistency of the swelling on J's head. I understood that the main purpose of the trauma record notes was to serve as a record of diagnosis and treatment and a guide for subsequent treatment of the patient by the same or other clinicians if needs be. It was against that background that Prof Taylor stated that the word 'bump' used by the duty registrar in the note of her examination was in any event not one that he, as a practitioner very familiar with interpreting other doctors' clinical notes, would ordinarily associate with a protuberance that was fluctuant or boggy in character. I accept that there is something in that. Although the words are to a great extent synonymous, one would, I think, generally be more inclined to describe a boggy enlargement very evidently caused by a collection of fluid as a 'swelling' rather than a 'bump' or a 'lump'. It has to be acknowledged though that the basis for making any such etymological distinction is intuitive, rather than scientific. With the wisdom of hindsight it is easy to highlight that the debate could have been avoided had the duty registrar inserted the adjective 'fluctuant' or 'non-fluctuant' before the word 'bump' in her notes. At the end of the day, the actual character of the protrusion on J's head requires a factual finding on the basis of the evidence adduced in the trial. The significance of its consistency is undisputed; the onus of proving it burdened the plaintiffs.

[39] It was common ground that the duty registrar did not carry out an otoscopic examination to determine whether J had suffered a basilar skull fracture. Her explanation for this omission, which attracted criticism from the expert witnesses called by the plaintiffs, was (i) that she considered the occurrence of such an injury highly unlikely in the context of the history she had been given of how J had injured his head, and (ii) that he did not exhibit any clinical signs such as bleeding from the ears or 'raccoon eyes' pointing to such an injury. Prof Taylor testified that he would not criticise the duty registrar in the circumstances for not having conducted such an examination. He did so accepting her explanation for her decision that it had not been necessary. As it was, J did not have a basilar skull fracture.

[40] The criticism directed at the registrar's omission to do an otoscopic examination appears to have been elicited in order to underpin an argument that the

duty registrar's examination of J had been superficial. The emphasis laid by the plaintiffs' experts on the 'scantiness' of the duty registrar's clinical notes seems to have been intended to imply the same effect.

[41] As mentioned, Prof Taylor, on the other hand, whilst choosing not to quibble with the description of the notes as 'scanty', considered them to be adequate for purpose. The purpose of such notes, he explained, was to record the patient's condition upon examination, and any treatment provided, for the benefit of any other medical officer who might subsequently have to attend to the patient. Save that I would have thought that the registrar should have noted her finding in respect of the consistency of the swelling and the time interval between injury and examination, I can find no fault with Prof Taylor's opinion that the registrar's notes adequately served their purpose in the given circumstances. In making this assessment I had regard to the medical literature referred to by the expert witnesses in the course of the trial, which gave me an insight into the factors that might be considered materially significant in the assessment of head injury patients presenting at accident and emergency centres soon after they had been hurt.

[42] The doctor's evidence concerning her omission to have completed the section of the form marked 'hours since injury' was unsatisfactory. She initially sought to explain the failure to complete the relevant part of the form by saying '*So usually you would, as a patient presents and often they come with a history, they don't really wait for you to ask, but if it wasn't clear from the history given I would ask what happened, when, where. That is just a simple recipe basically for establishing an injury history*'. That, of course, did not provide an answer to the question why the form was not completed in the relevant respect. It was only under cross-examination that it emerged that the witness did not establish, and had no idea of, the time that elapsed between J sustaining the injury and presenting for examination in the trauma unit. Having regard to the established significance in such matters of a changing or deteriorating state in the hours subsequent to time of injury, the omission to determine the length of interval between J's fall and his arrival at hospital reflected poorly on the quality of the history-taking aspect of the examination.

[43] The plaintiffs could make little of the point, however, because had the doctor ascertained the information it would have supported, rather than detracted from, her assessment that J was at a very low risk of having suffered a clinically important brain

injury. This is so because it would have established the objective fact that there had been no deterioration in his level of consciousness two and a half hours after his fall. Thus, as Mr *van der Merwe* reasonably conceded in his oral argument, if the doctor had been negligent in this regard, it was negligence in the air.

[44] The duty registrar explained that the word ‘*Reassurance*’ that appears after the symbol © that prefaces the last section of her examination notes in the trauma unit record was shorthand to minute that she had had a conversation with J’s father when she discharged the patient. Her evidence in this respect was as follows: ‘*I do not recall the details ...of this conversation, but my usual practice would be to briefly mention all the salient risk factors – maybe not all of them come to think of it – but I do recall in my general practice I would say look out for drowsiness, for sleepiness, vomiting and seizures or fitting as a sign of a developing brain injury. And I would also say in that conversation that if any matter of concern arises they should bring the patient back in*’. She said that it was ‘possible’ that she had told Mr M to read the head injury form. She had no recollection of having signed the form, and was indeed surprised to have found her signature on the discovered document. It was apparently not her standard practice to sign head injury forms.

[45] The witness acceded to a proposition by the plaintiffs’ counsel that her use of word ‘reassurance’ denoted ‘*something along the lines of “look I didn’t find anything wrong so there is nothing to worry about”*’. However, the effect of that concession has to be assessed against the evidence of Mr M that he was instructed by the doctor ‘to monitor’ J. That, in turn, begs the question ‘how likely would it be that an instruction to monitor a patient would be given without any indication of what it was that should be looked out for?’ In my view, the inherent probability is that a clinician instructing a layperson to monitor a patient would advise the person what it was that they should look out for.

[46] It was put to the duty registrar in cross-examination that as she had no recall of the content of her conversation with Mr M when she discharged J, she was in no position to contest his evidence that she had not told him to bring J back to hospital if he showed signs of drowsiness. She acceded to the proposition. I understood her to make the concession on the basis that if it were to be accepted that Mr M had an actual recollection of the conversation, whilst she did not, she would not be qualified to argue with him about its content. In that respect the answer was purely logical. I

did not understand the answer, however, to detract from the essence of her evidence in this regard, which was that while she had no independent recollection of the actual content of the conversation, it was her practice to draw attention to the features of concern for which a caregiver of a head-injury patient should look out for. Drowsiness was one of those. In context, the witness was clearly asserting that she believed that it was improbable that she had not mentioned drowsiness as a symptom that Mr M should look out for.

[47] The witness did, however, concede *‘that it would have been reasonable to provide more information to the father of what to look out for and also to stress the fact of any change or any worrying features, and more – have more emphasis on the drowsiness - potentially waking I’m still not 100% sure about that - but it would have been reasonable to give him more information and perhaps have been more emphatic about bringing him back. That would have been reasonable.’* The duty registrar proceeded on this aspect:

‘...I don’t know, I might be mixing up current thoughts with thoughts back then. I treated him like I treated all minor head injuries, with a perfunctory²³ but what I would consider sufficient information and the head injury form, not expecting, not anticipating in the least the ...’ (intervention)

Mr van der Merwe: *‘No, obviously not, you wouldn’t have sent him home if you had anticipated.’*

‘Ja, so reasonable to have perhaps spent more time, a little more time, explaining more. I will concede that.’

Mr van der Merwe: *‘And that might have made a difference?’*

‘It may have made a difference, yes.’

Mr van der Merwe: *‘Yes?’*

‘And it may not have.’

²³ It is plain from the context, especially the following words *‘but what I would consider sufficient information’* that the witness, whose first language, I suspect, is Afrikaans, used the word ‘perfunctory’ in its accepted sense of ‘brief’, and not in its primary sense of ‘carried out without real interest, feeling, or effort’.

Mr van der Merwe: *'It is likely on the facts of this case that it would have made a difference?'*

'I don't know.'

[48] In re-examination, the duty registrar testified about her discharge instructions to Mr M as follows:

Ms Gassner: *'And then on the discussion you had with Mr M you said your usual practice is to highlight what is concerning in cases of this kind, with minor head injuries. What would the particular feature be that you would highlight, what would be most concerning?'*

'So my usual practice would have been to warn them about drowsiness, decreased level of consciousness, vomiting and seizures.'

Ms Gassner: *'And you say that is your usual practice. Is there any reason why you would have followed or not followed this practice in the present matter?'* ---- *'No'.*

'Thank you, Dr xxx'

[49] In my judgment, the passages from the duty registrar's evidence that I have just quoted do not represent any advance on her position that she was unable to recall what she said to J's father and her professed belief in the circumstances that she would have acted in accordance with her usual practice in such situations. Her apparent concessions that she could reasonably have placed greater emphasis on certain things were purely speculative in character, and therefore of no assistance in determining what actually happened. The doctor was understandably affected by the consequences that had befallen J and it was clear to me that her conscience was racked by thoughts of what she might have been able to have done to avoid the tragedy. Nothing that she said by way of apparent concessions under cross-examination detracted from the essence of her evidence, which was 'I am unable to remember what I said, but I believe that it would have been along the lines of what I habitually say in such circumstances, which is to tell the caregiver to watch out for the tell-tale warning signs: drowsiness, loss of consciousness, vomiting or fitting, and to bring the patient back to hospital if any of them manifest'. Her evidence certainly did not amount to, nor was it intended by her to be understood as, an admission of negligence.

[50] The duty registrar agreed that she would not have advised Mr M to periodically awaken J during the night. The question was put in the context of the suggestion by the plaintiffs' expert witnesses that J should have been wakened periodically during the night. Her evidence was that had she considered monitoring of that nature to be necessary, it would have reflected a level of concern on her part that would have decided her against discharging the patient. She would have admitted him as an in-patient. As she also pointed out, persuasively in my view, a child that was wakened in the middle of the night would probably be drowsy, which is one of the most important signs for a need to return the patient to hospital. Sending a child assessed to be fit for discharge home with instructions that it be woken in the middle of the night would conduce to many such children being unnecessarily returned to hospital by parents understandably anxious about their drowsiness.

[51] Prof Taylor was also clearly not an enthusiastic proponent of the value of periodic night-time awakening. He said that he might have suggested that J should be woken once during the night, but stressed that periodically waking a patient during normal sleeping hours was of limited value because a patient with an undiagnosed epidural haematoma might present as normal one minute and deteriorate catastrophically a moment later. Much would depend on the extent of compensation by the brain for the volume of the bleeding into the patient's intracranial space. This could vary widely between individuals. He said that there are cases in which a patient might show little in the way of symptoms to raise concern before the cataclysmic occurrence of a decompensating herniation of the brain. As mentioned, it is the herniation of the brain consequent upon the mass effect of an enlarging haematoma that causes the sort of irreversible damage manifested in J's case. Prof Taylor was of the view that advising a caregiver to awaken a patient at given intervals was very much a matter for clinical judgment according to the apparent needs of the given case.

[52] The example of a warning discharge instruction form given in the (2008) eighth edition of the ATLS manual gave the following information concerning drowsiness as a sign to look out for: '*Drowsiness or increasing difficulty in awakening patient (awaken every 2 hours during period of sleep)*'.²⁴ But the example is stated to be for use in the context of the discharge of patients with 'minor' or

²⁴ Tab 9; p. 78.

‘mild’ traumatic brain injury. The document states that ‘minor traumatic brain injury is defined by a history of disorientation, amnesia, or transient loss of consciousness in a patient who is conscious and talking’. J did not have such a history. The sample warning sheet in the subsequent edition of the manual, published in 2012, omitted any reference to wakening the patient every two hours.²⁵ Prof Taylor ventured that the omission of the prescription in the later edition might have been in recognition of the opinion expressed in his view that there was no place for a hard and fast rule applicable to every case. The Western Cape Guidelines, in giving a summary of ‘signs that a person who has been discharged within 48 hours from hospital following a head injury should go or be taken to their nearest Emergency Centre’,²⁶ make no mention of wakening the patient at any intervals or at all. The NICE Guidelines also do not advise that head injury patients should be regularly wakened during sleeping hours. Dr Edeling’s opinion was that the appropriate intervals for wakening a sleeping minor head injury patient to check for any deterioration in consciousness could vary. He postulated intervals as long as four hours, but stated that he would have counselled waking J every two hours because of the swelling on J’s head and his assessment of the significance of the injury mechanism.

[53] It is apparent that there is a diversity of expert opinion and practice on the matter. Bearing in mind that J presented as an ‘outlier case’ in respect of the likelihood of having suffered a clinically important traumatic brain injury, and that the chances of his having done so could respectably be statistically rated as 1/2000 or 0,05%, it does not seem to me that he would have been reasonably regarded as an obvious candidate for frequent periodic awakening during the night.

[54] In my judgment it has in any event not been established as a matter of probability that waking J at pre-indicated intervals during the night would have led to J being returned to hospital sufficiently early to allow the evacuation of the haematoma before the uncal herniation occurred. J did prove difficult to wake shortly before 4 o’clock in the morning, but those attempts were immediately linked in time to the manifestation of the other symptoms – vomiting and fitting – that caused his parents to rush him back to the emergency ward. In my view, the onset of drowsiness

²⁵ Tab 9; p. 103.

²⁶ Tab 9; p. 29.

that caused J to nod off to sleep in the car after leaving the hospital and his remaining asleep when being shifted about in the car when his mother entered the vehicle and thereafter while being carried into the house when his parents reached home were the signs that should have alerted his parents to return him to the hospital without delay. These were signs that in my view should have concerned the plaintiffs had they been advised to look out for drowsiness, or when they read the head injury form. The stage of possibly waking the child at intervals during the night should not have been reached on the facts of the case. Pre-emptive action should have been taken before then.

[55] The duty registrar was unable to explain why she had booked J off school for two days. She said that decisions to book a child off school were often influenced by parent requests, but she acknowledged that she would be guessing if she were to venture that had been the case in this instance. The question was not canvassed in any detail with Mr M, but he did admit to spoiling J and treating him as his 'baby'. In the circumstances I would not have been surprised had he requested extra time for J to stay home. Nothing turns on this. I do not accept the suggestion implicit in some of the questioning of the doctor in cross-examination that the two days off school indicated that she considered J's condition to be any less benign than she testified that she had considered it to be. It is after all common ground that the duty registrar conveyed to J's father that she did not consider that the child's injury was serious.

The expert opinion witnesses

[56] Two experts gave evidence in support of the plaintiffs' case; Dr Jacques Goosen, who is a general surgeon, and Dr HJ Edeling, who qualified and practised as a neurosurgeon, but for the past 10 years has had an exclusively consultative practice, predominantly of a medico-legal nature. Prof Allan Taylor, who was called by the defendant, is an associate professor of neurosurgery at the University of Cape Town. Each of these witnesses has impressive qualifications and extensive relevant practical experience, especially Dr Goosen and Prof Taylor. Of the three experts, Prof Taylor had the greatest depth of practical experience in the specialist field of neurosurgical work. He pointed out that at least 50 per cent of his clinical work was trauma-related.

[57] Dr Goosen has held senior appointments at a number of hospitals. He was Head: Department of Surgery at the Ernest Oppenheimer Hospital in Welkom

between November 1987 and August 1998 and also Head of the Spinal Unit at that hospital from January 1996. He was thereafter the senior specialist surgeon at the trauma unit, University of the Witwatersrand and at the Johannesburg²⁷ and Milpark Hospitals for three years until 2002, and from 2002 to 2012 he was the Principal Surgeon and Head: Trauma Unit, Johannesburg Hospital and Witwatersrand University. He teaches at ATLS courses²⁸ at the University of the Witwatersrand and was appointed as an adjunct professor there in 2007. He is currently the Director of the Netcare Union Hospital trauma unit in Johannesburg. He has held leadership positions in various professional societies, including the Trauma Society of South Africa and Advanced Trauma Life Support, South Africa. He has delivered many papers and written widely in peer reviewed professional publications, and contributed book chapters in books on trauma published by, amongst others, Oxford University Press and the World Health Organisation.

[58] Dr Edeling qualified as a neurosurgeon in 1992 after serving two years as a neurosurgical medical officer / registrar at the (then) Johannesburg General and Baragwanath Hospitals. He was a consultant neurosurgeon and lecturer at the Johannesburg Hospital and Witwatersrand University Medical School in 1993-94 and has been in private neurosurgical and medico-legal practice since 1993. He has not carried out surgical operations since 2008. He was for some time an ATLS instructor.

[59] Prof Taylor qualified as a neurosurgeon in 1995. In addition to his teaching post at the University of Cape Town, he is also the clinical head of neurosurgery at the Groote Schuur Hospital and works privately at the Netcare-associated University of Cape Town Private Academic Hospital. He has been a visiting professor at the University of the Witwatersrand and at Rush University, Chicago. He is President of the Federation of South African Surgical Societies and is also the incoming president of the World Federation of Interventional and Therapeutic Neuroradiology. He has authored over 50 peer reviewed publications and book chapters and has made more than 80 academic congress presentations. His publications include a contribution to an article in the (2000) SA Medical Journal entitled 'Treatment of head injuries in the public sector in South Africa' and another (co-written with D Roytowski) with the

²⁷ Subsequently renamed Charlotte Maxeke Hospital.

²⁸ See note 19 above.

title ‘Malpractice Litigation and defensive practice in Neurosurgery’. Prof Taylor was a member of, and the ‘working author’ in, a technical group of specialist practitioners that produced the Head Injury Guidelines for the Western Cape (2008), to which copious reference was made in the course of the evidence. He also contributed to a policy document entitled ‘Protocol for the management of head injuries; A policy document to ensure fair distribution of limited resources’.²⁹

The legal principles pertaining to the adjudication of medical professional negligence

[60] In *Mitchell v Dixon* 1914 AD 519 at 525 it was held that:

... a medical practitioner is not expected to bring to bear upon the case entrusted to him the highest possible degree of professional skill but he is bound to employ reasonable skill and care.

The Constitutional Court’s judgment in *Oppelt v Head: Health, Department of Health Provincial Administration: Western Cape*³⁰ formulated the question in cases of this sort by way of the following general proposition: ‘In respect of medical negligence, the question is how a reasonable medical practitioner in the position of the defendant would have acted in the particular circumstances’.³¹ The critical questions in this regard in the current case are whether the duty registrar, employing reasonable skill and care, should have appreciated that there was a clinically cognisable prospect that J had sustained an intracranial injury and whether - according to the general level of knowledge then available to her as a medical practitioner³² - she unreasonably omitted to take proactive steps to have pre-empted its late diagnosis. This is no more than a context specific application of the generally expressed test for negligence in *Kruger v Coetzee* 1966 (2) SA 428 (A) at 430E-H.

²⁹ The plaintiffs’ counsel argued, albeit faintly, that Prof Taylor’s authorship of the Western Cape Guidelines and his professional association with the provincial hospitals detracted from his independence as an expert witness. The argument was unconvincing. The witness described in unchallenged detail how the Guidelines were closely informed by the content of the internationally reputable NICE guidelines and his evidence on matters of professional opinion was generally supported by the medical literature to which the court was referred. He had no prior knowledge of or contact with the duty registrar in the case and testified that he had met her for the first time in the courtroom.

³⁰ *Supra*, at note 1.

³¹ At para. 71. See also, amongst others, *Van Wyk v Lewis* 1924 AD 438, at 461-2, quoted in *Goliath supra*, in para 15.

³² *Oppelt supra*, at para. 109.

[61] Expert opinion evidence is usually of cardinal importance in equipping a court to make the determination whether a medical practitioner has employed reasonable skill and care in the given context. Our jurisprudence on the adjudication of medical professional negligence in matters of diagnosis and treatment, and how to deal in that regard with conflicting expert opinion, has followed the approach adopted in the leading English cases, especially *Bolam v Friern Hospital Management Committee* [1957] 1 WLR 582, [1957] 2 All ER 118 (QB); *Maynard v West Midlands Regional Health Authority* [1984] 1 WLR 634, [1985] 1 All ER 635 (HL) and *Bolitho v City & Hackney Health Authority* [1997] UKHL 46, [1998] AC 232, [1997] 4 All ER 771 (HL). See in this regard *Michael & another v Linksfield Park Clinic (Pty) Ltd & another* [2001] ZASCA 12, 2001 (3) SA 1188 (SCA), [2002] 1 All SA 384, especially at para. 34-40; *Medi-Clinic Limited v Vermeulen* [2014] ZASCA 150; 2015 (1) SA 241 (SCA), at para. 4-8; *Goliath v MEC for Health* 2015 (2) SA 97 (SCA), at para. 8; and *Oppelt supra*³³ at para. 36 and 93.

[62] Whilst noting up the judgments referred to in the previous paragraph I came across a useful summary of the applicable principles in the selection of quotations of the most pertinent dicta in the salient English cases conveniently collected in the fairly recent judgment of Picken J in *John v Central Manchester and Manchester Children's University Hospitals NHS Foundation Trust* [2016] EWHC 407 (QB), (2016) 150 BMLR 168, [2016] 4 WLR 54, at para 41-44:

41. The position is as it was described in the directions given to the jury by McNair J in *Bolam v Friern Hospital Management Committee* [1957] 1 WLR 582 at page 586:

“The test is the standard of the ordinary skilled man exercising and professing to have that special skill. A man need not possess the highest expert skill; it is well established law that it is sufficient if he exercises the ordinary skill of an ordinary competent man exercising that particular art. Mr Fox-Andrews put it in this way, that in the case of a medical man, negligence means failure to act in accordance with the standards of reasonably competent medical men at the time. That is a perfectly accurate statement, as long as it is remembered that there may be one or more perfectly proper standards; and if he conforms with one of those proper standards, then he is not negligent. Mr Fox-Andrews also was quite right, in my judgment, in saying that a mere personal belief that a particular technique is best is no defence unless that belief is based on reasonable grounds. That again is unexceptionable. But the emphasis which is laid by the defence is on this aspect of negligence, that the real question

³³ At note 1.

... is whether the defendants, in acting in the way they did, were acting in accordance with a practice of competent respected professional opinion. ... I myself would prefer to put it this way, that he is not guilty of negligence if he has acted in accordance with a practice accepted as proper by a responsible body of medical men skilled in that particular art Putting it the other way round, a man is not negligent, if he is acting in accordance with such a practice, merely because there is a body of opinion who would take a contrary view."³⁴

42. Lord Scarman put things pithily in ***Sidaway v Governors Of Bethlem Royal Hospital*** [1985] AC 871 [[1985] UKHL 1] when, at page 881F, he explained 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 ***Maynard v West Midlands Regional Health Authority*** [1984] 1 W.L.R. 634, he stated at page 639:
- “... I have to say that a judge’s ‘preference’ for one body of distinguished professional opinion to another also professionally distinguished is not sufficient to establish negligence in a practitioner whose actions have received the seal of approval of those whose opinions, truthfully expressed, honestly held, were not preferred. If this was the real reason for the judge’s finding, he erred in law even though elsewhere in his judgment he stated the law correctly. For in the realm of diagnosis and treatment negligence is not established by preferring one respectable body of professional opinion to another. Failure to exercise the ordinary skill of a doctor (in the appropriate specialty, if he be a specialist) is necessary.”*
43. It is helpful also to have in mind Lord Browne-Wilkinson's observations in ***Bolitho v City & Hackney Health Authority*** [1998] AC 232 at pages 241G-242A :
- “.. in my view, the court is not bound to hold that a defendant doctor escapes liability for negligent treatment or diagnosis just because he leads evidence from a number of medical experts who are genuinely of the opinion that the defendant’s treatment or diagnosis accorded with sound medical practice. In the ***Bolam*** case itself, McNair J. [1957] 1 W.L.R. 583, 587 stated that the defendant had to have acted in accordance with the practice accepted as proper by a ‘responsible body of medical men’. Later, at p. 588, he referred to ‘a standard of practice recognised as proper by a competent reasonable body of opinion’. Again, in the passage which I have cited from ***Maynard's*** case [1984] 1 W.L.R. 634, 639, Lord Scarman refers to a ‘respectable’ body of professional opinion. The use of these adjectives - responsible, reasonable and respectable - all show that the court has to be satisfied that the exponents of the body of opinion relied upon can demonstrate that such opinion has a logical basis. In particular in cases involving, as they so often do, the weighing of risks against benefits, the judge before accepting a body of opinion as being responsible, reasonable or respectable, will need to be satisfied that, in forming their views, the experts have directed their minds to the question of comparative risks and benefits and have reached a defensible conclusion on the matter.”*

³⁴ [1957] 2 All ER 118 (QB) at 121-122.

44. Having referred to certain authorities, Lord Browne-Wilkinson went on at page 243A-D to summarise the position in the following way:

“These decisions demonstrate that in cases of diagnosis and treatment there are cases where, despite a body of professional opinion sanctioning the defendant's conduct, the defendant can properly be held liable for negligence (I am not here considering questions of disclosure of risk). In my judgment that is because, in some cases, it cannot be demonstrated to the judge's satisfaction that the body of opinion relied upon is reasonable or responsible. In the vast majority of cases the fact that distinguished experts in the field are of a particular opinion will demonstrate the reasonableness of that opinion. In particular, where there are questions of assessment of the relative risks and benefits of adopting a particular medical practice, a reasonable view necessarily presupposes that the relative risks and benefits have been weighed by the experts in forming their opinions. But if, in a rare case, it can be demonstrated that the professional opinion is not capable of withstanding logical analysis, the judge is entitled to hold that the body of opinion is not reasonable or responsible.

I emphasise that in my view it will very seldom be right for a judge to reach the conclusion that views genuinely held by a competent medical expert are unreasonable. The assessment of medical risks and benefits is a matter of clinical judgment which a judge would not normally be able to make without expert evidence. As the quotation from Lord Scarman makes clear, it would be wrong to allow such assessment to deteriorate into seeking to persuade the judge to prefer one of two views both of which are capable of being logically supported. It is only where a judge can be satisfied that the body of expert opinion cannot be logically supported at all that such opinion will not provide the benchmark by reference to which the defendant's conduct falls to be assessed.”³⁵

[63] It is also appropriate in deciding medical negligence cases arising from the diagnosis or treatment of patients for courts to be mindful of the reference, with approval, in *Vermeulen* supra, at para 33, to the following remarks made by Denning LJ in *Roe v Ministry of Health* [1954] 2 All ER 131 (CA) at 139,³⁶ a case in which two men had been rendered permanently paralysed from the waist down after they were administered a contaminated anaesthetic:

These two men have suffered such terrible consequences that there is a natural feeling that they should be compensated. But we should be doing a disservice to the community at large if we were to impose liability on hospitals and doctors for everything that happens to go wrong. Doctors would be led to think more of their own safety than of the good of their patients.

³⁵ The ‘*Bolam* test’ has long since not been applied in deciding matters (such as that in *Sidaway*) in which the question is whether the medical officer was negligent by failing to provide the patient with adequate advice concerning the risks attendant on undergoing a type of treatment; see *Montgomery v Lanarkshire Health Board* [2015] UKSC 11, [2015] 2 All ER 1031.

³⁶ Also published on the Bailii website: [1954] EWCA Civ 7.

Initiative would be stifled and confidence shaken. A proper sense of proportion requires us to have regard to the conditions in which hospitals and doctors have to work. We must insist on due care for the patient at every point, but we must not condemn as negligence that which is only a misadventure.

In the context of the facts of that case, Denning LJ's cautionary remarks should be understood as an enjoiner against judging such cases by the standards of wisdom of hindsight.³⁷ Any inclination to deduce from the tragic consequences of the decision to discharge J without further investigation that the treating doctor *must* have been negligent must also be eschewed; cf. *Broude v McIntosh and Others* 1998 (3) SA 60 (SCA) at 75A-C and *Buthelezi v Ndaba* [2013] ZASCA 72, 2013 (5) SA 437 (SCA).

Should J have been referred for a skull X-ray or CT-scan?

[64] It was common ground between all the medical witnesses that the only means of confirming that J had sustained a linear skull fracture was radiological investigation, whether by X-ray or CT-scan. The fracture would not have been discernible by feeling the skull bone around or underneath the swelling on his head. The only means of confirming that he had a developing epidural haematoma would have been by doing a CT-scan of his brain. It was also common ground that the presence of a skull fracture would be indicative of there being a material risk that a clinically important traumatic brain injury could have been sustained. It follows that the duty registrar would have acted negligently if her failure to refer J for radiological investigation had been unreasonable in the circumstances.

[65] Dr Goosen testified that the existence of a skull fracture multiplied the chances of underlying intracranial injury being present by forty times. He said an X-ray would have identified J's skull fracture, whilst a CT-scan investigation would have shown the early onset of an epidural haematoma.

[66] Dr Edeling accepted that on presentation at the trauma unit J's apparent condition did not merit an immediate CT-scan investigation. He considered, however, that J should have been kept at the unit for a period of observation before any decision was made to discharge him home. He maintained that this should have been the case irrespective of the period that had intervened since the trauma to the patient's head had occurred. Dr Edeling maintained this position on the basis that an

³⁷ Cf. *Oppelt* supra, at paras. 132 and 142-143.

important diagnostic indicator of clinically important traumatic brain injury was diminishing levels of consciousness. He said that a clinician could not determine in a single examination at one point in time whether the patient's level of consciousness was deteriorating; more than one examination, with an interval in between, was essential to any such determination.

[67] Dr Edeling also emphasised that in his opinion an X-ray of J's skull should have been ordered. He premised his view on two papers, published in 2003 and 2005 respectively, in the *Annals of the Royal College of Surgeons of England*.³⁸ Those papers show that in revised guidelines, published in 1999, the Royal College of Surgeons suggested that skull X-rays should be done, even where CT was available, when a boggy swelling was present 'particularly in the parietotemporal region'. The later paper noted, however, that the NICE 2003 report questioned the need to perform skull x-rays, especially in hospitals in which CT scanning facilities were readily available.

[68] I do not consider the papers to which Dr Edeling referred to have been particularly relevant to the point that he was seeking to make. Their focus appears in fact to have been the introduction of measures to reduce the number of skull x-rays done in head injury cases at the Royal Berkshire Hospital.

[69] The medical literature to which reference was made by the plaintiffs' medical experts in the course of their oral evidence suggests that X-rays may have been more sensitive for identifying bone fractures than CT-scans, but despite this it also appears that in facilities in which CT-scanners are available (such as the Red Cross Children's Hospital) CT-scans are used rather than X-rays. Dr Edeling did not quarrel with the proposition put to him in cross-examination, and later confirmed by Prof Taylor, that CT-scan investigation had become more sophisticated since the turn of the century and that it has become an adequate tool for the identification of bone fractures.

[70] An X-ray investigation would not, however, identify the presence of an epidural haematoma. Identifying the skull fracture using X-ray facilities would then have required a further CT-scan investigation to confirm whether the fracture was

³⁸ SD Simon and RDA Dodds, '*The use of skull X-rays in the accident and emergency department*' *Ann R Coll Engl* 2003,85: 120-122 (Tab 9, p. 64 ff) and David Mossop and Shanti Soysa, '*The use of skull X-rays in head injury in the emergency department – a changing practice*' *Ann R Coll Engl* 2005, 87: 188-190 (Tab 9, p. 67 ff).

associated with underlying intracranial complications constituting clinically important traumatic brain injury. Both types of investigation expose the patient to a level of high-energy radioactivity. Doing an X-ray followed by a CT-scan would thus expose the patient to a double dose of such radioactivity, with the attendant potential of seriously adverse side-effects. In the circumstances, Prof Taylor's evidence that in modern conditions, if a radiological investigation were considered necessary in a given head injury case, only a CT-scan investigation would be undertaken, impressed me as cogent.

[71] The question whether a radiological examination of any sort should have been undertaken at the instance of the duty registrar in this case has to be approached mindful of the widely accepted and well established medical view that such examinations should not be resorted to without proper reason. The literature referred to during the hearing reports that the extent to which CT-scanning should be used in the diagnosis of clinically important traumatic brain injury in children presenting with minor head injury has been controversial. Quite apart from the cost considerations,³⁹ this is because exposure to high-energy radioactivity brings with it a certain (albeit very small) risk of inducing lethal malignancy during the patient's lifetime. The risk is heightened in persons younger than 18, and its measure is in directly inverse proportion to their age; so the younger the patient the greater the risk. Having regard to these considerations, the object of the so-called PECARN study,⁴⁰ undertaken between 2004 and 2006, was to develop reliable predictive rules in order to reduce the unnecessary use of CT-scanning in paediatric head injury patients who could be assessed on initial presentation at a trauma unit to be at low risk of having sustained clinically important traumatic brain injury.

[72] It may be accepted as a matter of logic, I think, that a CT-scan would, as a general rule, not be indicated in circumstances where the reliably established statistical probability of the existence of a clinically important traumatic brain injury

³⁹ Dr Goosen conceded that the cost of such examinations was a constraint in the context of public hospital resources.

⁴⁰ See N. Kuppermann et al, '*Identification of children at very low risk of clinically-important brain injuries after head trauma: a prospective cohort study*', an article on a study undertaken for the Pediatric Emergency Care Applied Research Network ('PECARN') published in *The Lancet*, vol. 374 (October 3, 2009) at p.1160ff. (Tab 9: p. 79ff of the trial file.) It was accepted by Dr Goosen and Prof Taylor that the PECARN study was 'a high level study' that could be professionally referenced as reliable.

being revealed by it would be less than the statistically established probability of the patient suffering damaging health consequences from exposure to the ionising radiation of computed tomography. That, indeed, was the philosophy that informed the PECARN study, and one that was endorsed by Prof Taylor.

[73] Having regard to the predictive rules distilled in terms of the PECARN study, a CT-scan of J's head would not have been recommended. A similar study undertaken for the Pediatric Emergency Research Canada (PERC) Head Injury Study Group, published in 182(4) (2010) CMAJ 41 at 341ff, produced the so-called CATCH42 clinical prediction rule, in terms of which J, as he presented when he was first brought to the hospital, would also have been excluded as a patient recommended for CT-scan examination.⁴³

[74] Dr Goosen maintained that he would nevertheless have proposed a CT-scan in J's case because the attendant risks of doing so (which, as I have noted, were low) fell to be weighed against the massive impact of the consequences of a failure to timeously identify and treat an intracranial injury. He considered that the features that underscored the need for a radiological examination in J's case were the size and position of the swelling on J's head (which he postulated, and the CT-scan scan confirmed, was a subgaleal scalp haematoma) and the reported mechanism of injury. Dr Edeling would instead have ordered a skull X-ray, essentially for the same reasons that Dr Goosen would have asked for a CT-scan.

[75] It was common ground between all the medical witnesses, including the duty registrar, that J should have been referred for a CT-scan if his scalp haematoma had been boggy or fluctuant in character.

Scalp haematoma

[76] It will be recalled that J's father had described the size of the swelling on J's head as 'half the size of a tennis ball'. He was challenged as to the reliability of his report on the size of the swelling. It was put to him that the indication on the CT-scan of Jason's head on the following morning was that the swelling had a diameter of 8cm

⁴¹ Canadian Medical Association Journal.

⁴² Canadian Assessment of Tomography for Childhood Head injury.

⁴³ Tab 9; p. 216 ff; especially Box 1 (at p. 222).

with a depth of about 7mm. The interpretation of the CT-scan was not controversial. The summary of evidence filed in respect of the late Prof Jonathan Peter, whom the defendant had intended to call as an expert, but who became unavailable due to ill health, suggests that he had been instructed that the ‘bump’ noted by the duty registrar had been ‘approximately the size of an egg’.⁴⁴ The duty registrar testified that the bump had the diameter of a small to medium size hen’s egg (± 4 cm), but a height of only about 1 cm. There appeared to be unanimity amongst the expert witnesses that during the course of the night, between the time that J was first examined in the trauma unit and the time he was scanned after his readmission in the early hours of the following morning, the protuberance of the swelling on J’s head could very feasibly have subsided somewhat and its diameter widened. It did not appear to be in dispute, however, that J’s scalp haematoma was on the large side.

[77] A subgaleal haematoma is caused by blood collecting in the galea aponeurotica, which is a layer of the scalp that lies between the deepest layer of the skin and the dense underlying subcutaneous tissue and the pericranium (or cranial periosteum) that covers the skull bone. It was common ground that a subgaleal haematoma, if it is sufficiently large, can sometimes present as a swelling with a boggy texture on palpation. Prof Taylor explained, however, that the swelling caused by such a haematoma could also present as a firm feeling bump. He illustrated the point using the example of a plastic bag half filled with water, which would be fluctuant in character on palpation because the water would displace when the bag was pressed, and a plastic bag fully filled with water, which would feel firm when pressed because the water in it could not be displaced.

[78] Dr Goosen considered that the prominence of the swelling described by J’s father (‘big and proud’, as Dr Goosen put it) would suggest that it was likely to have been boggy, but conceded that he was in no position - apart from observing that it had not been noted by her on the trauma unit record - to dispute what he was told would be the duty registrar’s evidence that she had physically examined the swelling for consistency and would have made a note if it had been boggy (or fluctuant) because she would have regarded that as significant. (It will be recalled that the duty registrar

⁴⁴ Tab 4; p. 2, para. 2.2.

did note the existence and position of the ‘bump’ on the trauma unit record.⁴⁵) Dr Goosen also did not take issue with Prof Taylor’s opinion that it was unlikely that a swelling of the prominence necessarily implied in the description given by J’s father (approximately 3,5 cm⁴⁶) would have reduced to 7mm within 12 hours. In Prof Taylor’s opinion the scalp haematoma was unlikely to have exceeded 1 cm in height before it started to dissipate. Dr Goosen’s view, however, was that the location and consistency of the swelling were more important diagnostic indicators than its size. This, indeed, seems to me to be generally consistent with the literature to which the court was referred in the course of the expert evidence. Thus, a boggy scalp haematoma in the temporo-parietal area of the skull – where the bone is thinner than in other parts of the skull – would be a more significant marker of the possibility of an underlying bone fracture associated with brain injury than would a boggy scalp haematoma on any other part of the scalp.

[79] Dr Edeling on the other hand considered that only a ‘very flat’ scalp haematoma would not feel fluctuant or boggy. His opinion was premised on his view that any swelling caused by a collection of fluid would tend to have a fluctuant consistency and that it was only when there was too little fluid in the haematoma to transfer the pressure of palpation that the clinician would not feel the fluctuant nature of the swelling. Dr Edeling’s reasoning would imply that only a very small scalp haematoma would not feel fluctuant.⁴⁷ If that were so, it would be puzzling why the emphasis in the literature seems to be on the consistency rather than the size of the haematoma as an indicator of the need for radiological examination. I must mention that, as was exposed in the course of his cross-examination, a consideration of the pre-hearing exchanges between Dr Edeling and the defendant’s expert witnesses shows that Dr Edeling warmed to the topic of the likelihood of J having had a boggy

⁴⁵ See para. [8] above.

⁴⁶ I have been guided by the International Tennis Federation’s prescribed criteria for the size of tennis balls. See ITF Rules of Tennis 2018; Rule 3 read with Appendix 1, whence it appears that, depending on the type of ball used, the permitted diameter ranges between 6,54 and 7,3 cm.

<http://www.itftennis.com/technical/publications/rules/balls/appendix-i.aspx> (accessed on 31 March 2018)

The 2016 Burns study characterised any scalp haematoma more than 3 cm in size (presumably in diameter) as ‘large’.

⁴⁷ Prof Taylor agreed that it was improbable that small scalp haematomas would feel boggy, but rejected the notion that all but very small examples of the phenomenon would have a fluctuant consistency.

scalp haematoma rather late in the day if regard is had to the emphasis he placed on the issue in his oral evidence. This was despite his having been instructed from the outset with a copy of the radiological report on J's CT-scan that reported that J had a '[l]eft temporoparietal undisplaced fracture with overlying scalp haematoma'.

[80] Professor Taylor explained - persuasively, in my judgment - that the size of a subgaleal haematoma was not a dependable indicator of the likely character of its consistency. His evidence was that a subgaleal haematoma would feel firm to the touch if the subgaleal space into which the bleeding occurred were completely filled with blood. Bogginess would present only if there were space into which the collected blood could displace when the swelling was palpated. He explained that the bleeding that leads to the occurrence of subgaleal haematomas is usually caused by damage to the blood vessels in the loose connective tissue that underlies the galea. It is in situations where there has been an avulsing (the witness used the expression 'degloving') injury of that tissue that sufficient space is created for the subgaleal haematoma to manifest as fluctuant. The occurrence of such avulsing injuries is generally related to a high degree of trauma having occurred to the area of the skull where the injury was inflicted.

[81] Prof Taylor testified that very young children are most vulnerable to an avulsing injury of the loose connective tissue layer. This is due to the relative thinness of their scalps. The witness also explained that the reason that a boggy scalp haematoma can indicate the heightened possibility of an underlying bone fracture is because the type of trauma that is commonly causative of tissue-shearing injuries is also likely to result in bone fractures; in other words, the type of trauma that is liable to cause the former is also liable to cause the latter. I do not overlook that the logical implication of this reasoning is that the fact that J did indeed have a skull fracture increases the likelihood that his subgaleal haematoma would have been associated with an avulsing tissue injury, and that it could therefore very well have been fluctuant. Whether or not J did in point of fact sustain an avulsing injury to the loose connective tissue layer in the vicinity of his scalp haematoma was not established.

[82] Accepting, as I do, that the swelling could notionally have been either boggy or firm, its actual consistency when J presented at the trauma unit is a question of fact. In making a finding in that regard on the probabilities, I take account that the protuberance on J's head would have been the most focal physical evidence of his

injury. As noted, it was common cause that it was large. Its appearance was the reason for his father's concern, and he would no doubt have communicated that to the doctor. The duty registrar made an accurate note of the existence and position of the lesion. It is inherently unlikely in the circumstances that she would not have examined the swelling closely enough to be able to tell its consistency. In the context of all these factors I am unable to reject her assertion that the bump on J's head could not have been fluctuant because had it felt boggy she would have sent him for a CT-scan. I cannot fault her for having no actual recall of the physical examination of the bump. Her deductive reconstruction impressed me as honestly given, and entirely plausible having regard to the objectively established circumstances.

[83] Drs Goosen and Edeling, who were supported in this respect by the literature,⁴⁸ considered that the presence of a large scalp haematoma in the temporo-parietal region of the skull could be, by itself, a significant pointer to the danger of there being an underlying linear fracture in that part of the skull. There was furthermore, as I have already noted, a documented association between fractures of that part of the skull and the possibility of injury to the middle meningeal artery.

[84] The pre-2011 medical literature to which reference was made at the hearing seems, however, to indicate that it is in respect of *infants* (that is children under the age of two years) that the presence of a scalp haematoma is an indicator of the need for a CT-scan. It does not seem generally to have been regarded as, of itself, a significant indicator in children older than two. Indeed, in the investigation reported on in the 2016 article by Burns et al supra,⁴⁹ (which was a secondary study to the PERC 'CATCH rule' study mentioned earlier) the observation was made that -

Studies that have investigated the independent association between scalp hematomas and ICI [intracranial injury] are ... scarce and at times contradictory. Some significant limitations include retrospective study designs and methodologic issues such as small sample sizes and few positive CT's. It is generally agreed that scalp hematomas in the temporal/parietal regions confer the greatest risk for ICI, as do scalp hematomas of larger size. With regard to age, children aged 0-6 months seem to be at highest risk of ICI when a scalp hematoma is

⁴⁸ See Burns et al (for the PERC Head Injury Study Group), '*Scalp Hematoma Characteristics Associated with Intracranial Injury in Pediatric Minor Head Injury*', Vol. 23(5) (2016) *Academic Emergency Medicine* (Official Journal of the Society for Academic Emergency Medicine), at p. 576 ff. Tab 9; p.208 ff.

⁴⁹ See note 48 above.

present. However, since most studies have been limited to children to children aged 0-24 months, the clinical significance of a scalp hematoma in children older than 24 months presenting after blunt head trauma remains unclear.

(Footnotes omitted.)

(The words ‘independent association’ in the foregoing quotation fall in their context to be understood as meaning ‘independent of any other established indicator, such as loss of consciousness, amnesia, or dangerous mechanism of injury etc.’.)

[85] The Burns study found that the presence of a scalp haematoma was significantly associated with increased odds of intracranial injury, with the highest odds in infants less than six months old. It also found that temporal/parietal and occipital scalp haematomas had the highest odds of association with intracranial injury. It is important, however, when considering the article by Burns et al., to bear in mind (i) that J would have been excluded from the study by reason of his head trauma not having resulted in ‘witnessed loss of consciousness, definite amnesia, witnessed disorientation, [or] persistent vomiting (at least two episodes 15 minutes apart)’ and (ii) that the study acknowledges that previous literature characterised scalp haematoma-associated risk of intracranial injury with reference by age to ‘three clinically relevant risk groups’, i.e. patients under six months old, those between 6 and 24 months and those over 24 months,⁵⁰ and not older patients. The first of the aforementioned qualifications brings to mind the pertinence of the observation stressed repeatedly by Prof Taylor that it is generally misleading to see any of the accepted indicators in isolation; their individual significance arises from their presentation as part of a bigger clinical picture – that is in their association with one or more of the other indicators.

[86] Dr Edeling found it ‘puzzling’ that scalp haematoma in the temporo-parietal region in patients older than 2 years was not documented as a risk indicator of intracranial injury. Prof Taylor’s evidence concerning the pronounced vulnerability of very young children – he was referring to infants – to the type of avulsing injury that gives rise to boggy scalp haematomas and the heightened possibility of underlying skull fractures seems to me to offer a possible answer to the enigma.

⁵⁰ My understanding of the group ‘older than 24 months’ is that it comprehended ‘young children’, identified somewhere in the literature to which I was referred as being children under 5 years of age. See note 51.

[87] The learning in the Burns study was not available to the duty registrar in 2011, and Prof Taylor testified, without contradiction, that he was unaware that its findings have in any event yet been adopted in any applicable practice guidelines. I consider that Dr Edeling's quite assertive evidence concerning what he considered should have been the clear significance to the duty registrar of the presence of a scalp haematoma has to be seen in the context of the bigger picture that I have described. The significance of the presence of a scalp haematoma does not appear to have been as unambiguous as Dr Edeling's opinion would suggest, certainly in respect of patients older than two years of age.

[88] I accept, however - and the duty registrar professed to have been astute to this at the time - that the consistency and location of a swelling were something to which a treating doctor should have had regard at the relevant time in the making of the required clinical judgment in respect of the diagnosis and treatment of a head injury patient because it could be indicative of an underlying skull fracture. In the duty registrar's judgment nothing about the size or consistency of the lump on J's head gave her cause for concern. On the documented learning, she cannot be held negligent in those circumstances for not having regarded the presence of a firm feeling haematoma as sufficient reason - in the absence of other symptoms such as loss of consciousness, amnesia, vomiting or fitting, and subject to what I shall deal with presently in respect of 'mechanism of injury' - to have referred J for a CT-scan.

Mechanism of injury

[89] Dr Goosen was of the opinion that the manner in which J had been tripped by the chain attached to an escaping dog suggested that the injury had been sustained in an incident involving a significant degree of kinetic energy. He pointed to medical literature that recognised high impact injury mechanisms such as (i) high-speed road traffic accidents involving the patient either as a pedestrian, cyclist or vehicle occupant, (ii) a fall from a height of more than three metres or (iii) a high-speed injury from an object⁵¹ as indicative of the need for a radiological examination in head

⁵¹ See, for example, Figure 3 '*Selection of Children for CT head scan*' in the (2014) Nice Guidelines at Tab 9; p. 33A of the trial file. The 2003 NICE Guidelines gave the following examples of '*dangerous mechanism of injury*': '*a pedestrian struck by a motor vehicle, an occupant ejected from a motor vehicle or a fall from a height of greater than 1 metre or five stairs*' and indicate that '*a lower threshold for height of falls should be used when dealing with infants and young children (that is, aged under 5 years).*' - Tab 9; p. 171 at §1.4.2.11.

injury cases if they featured with one or more other indicators in the given case (such as repeated vomiting or a period of retrograde amnesia), and as a factor meriting *consideration* of a radiological examination even if they featured on their own.⁵²

[90] Under cross-examination, however, Dr Goosen conceded that J's mechanism of injury would not have qualified as 'severe' in terms of the categorisation used for the purposes of the PECARN Study. The effect of this concession, as Dr Goosen frankly acknowledged, was that J would not have qualified as a patient for whom a CT-scan would ordinarily be recommended in terms of the findings of the PECARN study. This was because, having regard to his GCS score of 15/15, that he had suffered no loss of consciousness, had no history of vomiting, showed no clinical signs of basilar skull fracture, was not suffering from a severe headache and that the mechanism of injury was 'moderate', the statistical likelihood of his having sustained a clinically important traumatic brain injury was less (< 0,05%, or 1 in 2000) than that of some estimates of the likelihood of his suffering a lethal malignancy (0,1% or 1 in 1000) as a consequence of exposure to the ionising radiation of a CT-scan.⁵³

The effect of J having been 'an outlier case'

[91] Dr Goosen acknowledged that J would have been what he called 'an outlier case' in respect of the statistical likelihood of his having sustained a complicating injury; his reported symptoms on examination in the trauma unit being indicative of an extremely low risk that he had sustained intracranial injury. Notwithstanding the recommendations made in the PECARN study, however, Dr Goosen would nevertheless have been inclined, for the reasons he gave in his evidence in chief, to have referred J for radiological examination; alternatively, at the very least, have detained him in the trauma unit for a period of two hours and monitored him periodically during that time for signs of any deterioration in his condition. (As mentioned, Dr Edeling would have been inclined to refer J for a skull X-ray, but in any event to have kept him in casualty for observation for at least an hour.)

[92] Inasmuch as Dr Goosen's approach to the need for a radiological examination differs from that generally recommended in the PECARN study and in terms of the

⁵² See American College of Surgeons Committee on Trauma, *ATLS for Doctors*, Student Course Manual 8th ed. (2008), Chap 6 s.v. 'Management of Minor Brain Injury (GCS Score 13-13)' at p. 140. Tab 9; p. 75 of the trial file.

⁵³ The statistics are extracted from the PECARN study (note 40 above).

CATCH rule, it should in fairness to him be recorded that the PECARN study - which analysed the cases of more than 42 000 children in the United States who had presented at 25 different treatment centres with a GCS score of 14/15 or 15/15 within 24 hours of head trauma - acknowledged that there was ‘substantial practice variation’. The Canadian PERC study made a similar observation. I should also record my impression that the statistical analyses in the medical literature to which reference was made during the hearing, while they are supportive of the reasonableness of the duty registrar’s decision at the time of J’s examination in the trauma unit that a CT-scan of his head was not required, do not provide a clear basis for discounting the approach advocated by Dr Goosen. Indeed, with the wisdom of hindsight, there is no denying that had it been followed J would probably have had his epidural haematoma timeously evacuated and made a good recovery, and that the chances of his consequently incurring a malignancy from exposure to radiation would in any event have been remote. But in answering the questions that have to be answered in this case the court ‘must forbear from hindsight’.⁵⁴

The Red Cross Hospital Imaging Protocol

[93] The Red Cross Hospital has an ‘imaging protocol for head injuries’.⁵⁵ It was issued by the hospital’s Clinical Head of Radiology. The trauma unit registrar who examined J when he was first brought in would have been expected to comply with the protocol, but doing so would not automatically exclude negligence if following the prescripts of the protocol were not rationally defensible in the particular case.

[94] The protocol provides as follows:

IMAGING PROTOCOL FOR HEAD INJURIES

Skull x-rays

Skull X-rays are **NOT** indicated in the managing of head injuries in children in our setting.

CT HEAD INDICATIONS

- GCS \leq on assessment at hospital after adequate resuscitation.
- Abnormal drowsiness.
- Focal signs
- Penetrating injury
- Suspected base of skull fracture.

⁵⁴ *Oppelt* supra, at para. 132 and 142-143.

⁵⁵ Tab 7; p. 30.

- Clinical suspicion of occipital / suboccipital fracture.
- NAI [Non-accidental injury]
- Post-traumatic seizure.
- Vomiting > times or > 2 hours post injury.

CT is not indicated in the setting of falls, abrasions or bumps on the head in the absence of indications documented above.

This protocol was jointly agreed upon by the following departments: Radiology, Neurosurgery and Trauma.

(Bold font and underlining reproduced as in the original.)

[95] The Red Cross Hospital imaging protocol for head injuries is, in its essential respects, consistent with the advice furnished in the ‘Head Injury Guidelines Handbook for the Western Cape’ (September 2008, reviewed September 2010).⁵⁶ The introduction to the Guidelines Handbook explains that the guidelines were adapted from the NICE clinical guideline⁵⁷ by a team of senior practitioners and consultant surgeons from the main teaching hospitals in the greater Cape Town area and the Universities of Cape Town and Stellenbosch. As mentioned, Prof Taylor was the ‘working author’ of the document.

Application of the ‘Bolam / Linksfield’ test⁵⁸

[96] The duty registrar’s decision not to refer J for a CT-scan was compliant with the prescripts of the hospital’s protocol and the recommendations in the provincial Guidelines Handbook. The protocol and the guidelines are, in turn, consistent with a body of responsible and respectable professional opinion documented in the medical literature to which reference was made in the hearing. Applying the ‘*Bolam / Linksfield* test’ in order to make a determination in the face of conflicting expert opinion, I cannot find on the given facts, which indicate that J was reasonably assessed to have been at an extremely low risk of having sustained a clinically

⁵⁶ Tab 9; pp. 9-32.

⁵⁷ National Institute for Clinical Excellence, ‘*Head Injury: Triage, assessment, investigation and early management of head injury in infants, children and adults*’; Clinical Guideline 4 (June 2003). Tab 9; pp. 156-191. NICE (now renamed as the National Institute for Clinical and Health Excellence) is currently established in terms of s 232 of the Health and Social Care Act (c. 7), 2012 (UK). Its functions currently include the giving of advice or guidance, provision of information or making of recommendations about any matter concerning or connected with the provision of- (a) National Health Service services, (b) public health services, or (c) social care in England in terms of regulations made under the Act (see s 237 of the Act).

⁵⁸ See paragraphs [61] -[62] above.

important brain injury, that the duty registrar failed to exercise reasonable skill and care in making the decision not to refer him for a radiological examination. Dr Edeling indeed ultimately conceded that he would not quarrel with such a conclusion.

Should J have been kept under observation at the hospital for a period after initial examination for reassessment of his condition before being discharged?

[97] The plaintiffs alleged in their particulars of claim that the defendant's personnel had been negligent –

- In failing to re-examine J within one hour, and
- In failing to observe J every 15 minutes within the first two hours, and two-hourly thereafter.⁵⁹

[98] The then applicable NICE clinical guideline indicated that in cases of children presenting to an emergency clinic with a head injury in which no imaging was required the treating physician should 'use clinical judgment to determine when further observation is required'.⁶⁰ (I have already identified that according to the guideline imaging was not required in J's case.)

[99] The NICE head injury guideline summary also indicated that children who had sustained a head injury and had only one of the following risk factors –

- Loss of consciousness lasting more than 5 minutes (witnessed).
- Abnormal drowsiness.
- Three or more episodes of vomiting.
- Dangerous mechanism of injury (high speed road traffic accident either as pedestrian, cyclist or vehicle occupant, fall from a height of greater than 3 metres, high-speed injury from a projectile or other object).
- Amnesia (antegrade or retrograde) lasting more than 5 minutes.

should be observed for a minimum of four hours after the head injury. J was sent home, approximately two and half hours after he had sustained his injury, having not manifested or been associated with any of the listed risk factors by that stage.

[100] Drs Goosen and Edeling would hold, however, that the mechanism of injury in J's case qualified as 'dangerous' or 'severe'. But that categorisation is not supported

⁵⁹ Para. 19.4.A.5 and 6. Tab 1; p.10.

⁶⁰ Tab 9; p. 33A.

by the PECARN study. It also does not obviously fit with the ‘high-speed’ examples given in the NICE guidelines.⁶¹ Prof Taylor expressed the opinion that the mechanism of injury was not dangerous or severe. His view, which corresponded with that of the duty registrar, is more readily reconcilable with the evident import of the examples given in the guidelines. I accept that those examples are unlikely to have been chosen arbitrarily, and likely reflect a depth of experience crystallised from statistical analysis of a wide range of practical experience.

[101] The reference by Dr Goosen to the recommendation in the ATLS manual that ‘[i]f patients are asymptomatic, are fully awake and alert, and have no neurologic abnormalities, they may be observed for several hours, re-examined, and, if still normal, safely discharged’,⁶² has also to be seen in the context in which the recommendation was made, that is with reference to patients with evident ‘minor traumatic brain injury’ as defined. J’s injury did not fall within the definition because he did not present with a history of disorientation, amnesia, or transient loss of consciousness.

[102] The Western Cape Head Injury Guidelines Handbook indicates that ‘low risk’ patients presenting in the emergency centre with a GCS score of 15/15 should be re-examined within an hour to establish the need for imaging.⁶³ Professor Taylor, as one of the authors of the handbook, explained that this provision, which he conceded might perhaps have been better worded, was intended to replicate the content of paras. 1.4.1.6 – 8 of the 2003 NICE Head Injury guidelines.⁶⁴ Those paragraphs

⁶¹ See note 51 above.

⁶² Tab 9; p.75.

⁶³ Tab 9; p.21.

⁶⁴ Tab 9; pp. 166-167.

1.4.1.6 All patients presenting to A&E with a head injury should be assessed by triage by a trained member of staff within a maximum of 15 minutes of arrival at hospital. Part of this assessment should establish whether they are high risk or low risk for clinically important brain injury and/ or cervical spine injury, using the guidance on patient selection and urgency for imaging (head and cervical spine – see later recommendations).

1.4.1.7 Patients found to be high risk on triage for clinically important brain injury and/or cervical spine injury should be assessed within 10 minutes of triage by an A&E clinician. Part of this assessment should fully establish the need to request CT imaging of the head and/or imaging of the cervical spine. The guidance on patient selection and urgency for imaging ... should form the basis for the final decision on imaging after discussion with the radiology department – see later recommendations.

provided that head injury patients found on initial triage to be at low risk for clinically important brain injury should be reassessed 'within a further hour by an A&E clinician'. At the Red Cross Hospital patients arriving in the trauma unit are assessed for triage purposes by experienced nursing staff. It follows, as Prof Taylor confirmed, that J's subsequent assessment by the duty registrar would have been the reassessment by an A&E clinician within a further hour contemplated in terms of para. 1.4.1.8 of the NICE guidelines. In any event, on a purely linguistic construction, the mention of the period 'within a further hour' does not imply that a further examination should take place after an interval of an hour, it connotes that an examination by a clinician should happen within no more than an hour after the triage assessment. That might be 5 minutes or 55 minutes after the triage assessment. In the current matter an examination by a clinician commenced within 5 minutes of the triage assessment.

[103] In my judgment it was not established that the duty registrar failed to employ reasonable skill and care in the given circumstances when she decided that it was not necessary to keep J in the emergency ward for further observation. The statistics referred to earlier would imply that if every patient presenting as J did required to be kept at the trauma unit for observation, 1 999 out of every 2 000 of them would be detained there unnecessarily. It was unchallenged that it was not the established practice at government hospitals in the Western Cape to detain patients for observation in such circumstances. I am persuaded by the evidence of Prof Taylor that practical considerations pertaining to the efficient use of limited resources would militate against keeping patients with an extremely low risk of complications in for observation. Prof Taylor emphasised that the logistical implication of keeping in for observation every patient that might be at very low risk of subsequently developing complications should be understood not only with regard to the statistical odds applicable in a case like J's, but also bearing in mind the various other situations in which, if the hospital authorities were expected to act consistently, it would be necessary to detain patients at very low risk for observation. The number of patients

1.4.1.8 Patients with head injury who are discovered to be at low risk for clinically important brain injury and/ or cervical spine injury on initial triage should be reassessed within a further hour by an A&E clinician. Part of this assessment should fully establish the need to request CT imaging of the head and/or imaging of the cervical spine. The guidance on patient selection and urgency for imaging (head and cervical spine) should again form the basis for the final decision on imaging after discussion with the radiology department.

across the range of potential scenarios that would be unnecessarily detained would therefore in point of fact greatly exceed the 1999 out of every 2000 that would have to be kept in in cases like J's.

[104] Dr Goosen argued, however, that the extremely low risk of complications had to be weighed against the extremely grave consequences for the outlier example patient if, against the odds, they did manifest. That is true. But in my view, the practice of discharging patients who are at extremely low risk into the care of responsible persons who are adequately informed to monitor them for early signs of the complications that might subsequently arise constitutes a reasonable, and apparently widely accepted, provision to meet Dr Goosen's argument. That the practice is indeed reasonable was in effect conceded by Dr Goosen who acceded (albeit with evident reluctance) to the proposition put to him during his cross-examination that it would be reasonable to discharge a child patient who presented with a 15/15 GCS scale score, no loss of consciousness or amnesia and no vomiting or seizures. It is to a consideration whether the practice of discharging the patient subject to cautionary advice was adequately complied with in this case that I therefore now turn.

Did the trauma unit registrar fail to give 'a full and proper explanation' to J's father of the need to keep the child under observation for signs of any deterioration in his condition after his discharge from the trauma unit?

[105] It appears to be a generally applicable practice internationally to provide a patient (or the patient's companion or caregiver) who has been seen for a traumatic head injury at an accident and emergency unit with a leaflet describing the symptoms and abnormalities that should be watched out for during the 24 hours following the patient's discharge. The head injury form is used for that purpose at the Red Cross Children's Hospital.⁶⁵ It is also generally accepted that the treating clinician should review the content of the leaflet or form with the patient or the person caring for him or her before the patient is sent home. The *ATLS for Doctors*, Student Course Manual (2008)⁶⁶ states in this regard:

⁶⁵ See paragraph [19] above for the content of the head injury form.

⁶⁶ See note 52 above.

Ideally the patient is discharged to the care of a companion who can observe the patient continuously over the next 24 hours. An instruction sheet directs both the patient and the companion to continue close observation and to return to the ED [hospital emergency department] if headaches develop, there is a decline in mental status, or focal neurologic deficits develop. In all cases, written discharge instructions should be supplied and carefully reviewed with the patient and/or companion.⁶⁷

[106] The Red Cross Children's Hospital guidelines state that '[p]arents of children who are fit for discharge home should understand the contents and importance of the head injury form'.⁶⁸ It was not in dispute that the trauma unit registrar had been under a duty to explain the significance of the content of the head injury form to J's father. The issue in dispute in this aspect of the case was whether she did so adequately, or at all. It was also contended that the head injury form was in any event so badly worded that it failed to achieve its purpose.

[107] I reviewed the evidence concerning the instructions given by the duty registrar to J's father when J was sent home earlier in this judgment. It will be recalled that it is common ground that Mr M was told to monitor J, and that he was given a copy of the head injury form that the doctor had endorsed with her name. In contradiction of Mr M's evidence that he was not informed that he should be concerned and return J to the hospital if he became drowsy was the duty registrar's evidence that a failure to have warned the first plaintiff about the implications of signs of drowsiness would have been inconsistent with her usual practice,⁶⁹ and accordingly unlikely. She declined to concede the correctness of the first plaintiff's version of their conversation. The court was consequently faced with essentially mutually conflicting evidence on a material fact.

[108] The proper approach by a court in such a situation was summarised in the following often cited passage in *Stellenbosch Farmers' Winery Group Ltd and another v Martell et Cie and others* 2003 (1) SA 11 (SCA), at para. 5:

⁶⁷ Tab 9; p.75.

⁶⁸ Tab 9; p.3.

⁶⁹ The plaintiffs' counsel sought in argument to contend that there was little substance in the duty registrar's 'usual practice' because she had only worked in the trauma unit for about three weeks at the time of J's admission. The contention ignored the witness's evidence that she had had extensive exposure to head injury cases in earlier stages of her career while working in Mthatha and at the Victoria Hospital.

The technique generally employed by courts in resolving factual disputes of this nature [i.e. where there are two irreconcilable versions] may conveniently summarised as follows. To come to a conclusion on the disputed issues a court must make findings on (a) the credibility of the various factual witnesses; (b) their reliability; and (c) the probabilities. As to (a), the court's finding on the credibility of a particular witness will depend on its impression about the veracity of the witness. That in turn will depend on a variety of subsidiary factors, not necessarily in order of importance, such as (i) the witness's candour and demeanour in the witness-box, (ii) his bias, latent and blatant, (iii) internal contradictions in his evidence, (iv) external contradictions with what was pleaded or put on his behalf, or with established fact or with his own extracurial statements or actions, (v) the probability or improbability of particular aspects of his version, (vi) the calibre and cogency of his performance compared to that of other witnesses testifying about the same incident or events. As to (b), a witness's reliability will depend, apart from the factors mentioned under (a)(ii), (iv) and (v) above, on (i) the opportunities he had to experience or observe the event in question and (ii) the quality, integrity and independence of his recall thereof. As to (c), this necessitates an analysis and evaluation of the probability or improbability of each party's version on each of the disputed issues. In the light of its assessment of (a), (b) and (c) the court will then, as a final step, determine whether the party burdened with the onus of proof has succeeded in discharging it. The hard case, which will doubtless be the rare one, occurs when a court's credibility findings compel it in one direction and its evaluation of the general probabilities in another. The more convincing the former, the less convincing will be the latter. But when all factors are equipoised probabilities prevail.

[109] I do not think that the conflict is attributable to dishonesty on the part of either of the witnesses. There was no basis to prefer the candour or demeanour of the one witness to that of the other. The evidence of both of them, although generally satisfactory, was not without blemish. I was, in particular, struck by the demonstrable unreliability of J's father's memory in certain respects. The unexplained contradiction between the pleaded circumstances in which J was injured and that given in oral evidence was also of some concern. The duty registrar's evidence was affected by the passage of time since the relevant events and there were indications that she sometimes had difficulty in distinguishing between what she actually remembered and the influence on her thinking of discussions in which she was involved in the course of trial preparation. Another aspect that detracted from her quality as a witness was the occasional tendency to over-defensiveness. In this regard I have in mind her peculiar reluctance to admit that the swelling on J's head had been

a scalp haematoma⁷⁰ and her initial equivocation about her failure to ascertain and note the time that J had sustained his injury.

[110] Both witnesses testified to the issue in contest in respect of their respective recollections of their conversation in a quiet and non-confrontational manner. The one was sure that he was told nothing about drowsiness, whilst the other, not pretending to remember what had actually been said, was unable to accept that she would not have traversed the obvious things that J's father should have been advised to look out for.

[111] It was eventually common ground that the doctor had said more than just that J would be 'fine' when she handed over the head injury form. The concession by Mr M under cross-examination that he had been told to 'monitor' J stands as proof that the duty registrar had been mindful, when she assessed that there was 'an extremely low risk' that J might have sustained a clinically important traumatic brain injury, that there was nonetheless a possibility that signs that he did in point of fact have such an injury could manifest later. This therefore was not a case of a medical officer having taken such an optimistic view of the patient's apparently benign condition that she was blinded to the possibility that there might in fact be an undiagnosed problem that could reveal itself in a subsequent deterioration in his state of being.

[112] I find it improbable, in the context of an exercise designedly directed at briefing a caregiver that problems might become apparent later, that the doctor would not have given any indication of what signs to look out for in that regard. To merely say that the caregiver should monitor the patient without identifying what it was about his condition that should be watched for would be an improbably cryptic manner of

⁷⁰ The plaintiffs' counsel suggested in argument that this had been because the duty registrar seemed to think that a scalp haematoma would always be boggy, and that she would therefore have realised that a concession under cross-examination that the swelling on J's head was a scalp haematoma would contradict her assertion that had the 'bump' been boggy she would have noted it. The relevant cross-examination of the witness was not pressed to the point of obtaining such an explanation from her. But even if it had been, all that it would have established was that the witness had an imperfect understanding of the reason that some scalp haematomas were boggy and others not. It would also have given a reason why, having been of the view that had the swelling been boggy she would have managed the treatment differently, she could not reconcile her conduct with a concession that it had been a scalp haematoma. The witness did state that she was not an expert in head injuries. As should be apparent from the body of this judgment, I have accepted the expert evidence of Prof Taylor that scalp haematomas may be fluctuant or firm irrespective of the largeness of their size, and have decided the question concerning the probable consistency of J's scalp haematoma on the basis of the inherent probabilities in the context of the pertinent established or determined facts.

communication. The very fact that the doctor expressed the necessity that J should be monitored is indicative that she would have had the symptoms that would be cause for concern in mind. It is improbable that in instructing Mr M what should be done she would have kept them to herself. The very notion of monitoring implies a purposeful exercise. It is difficult to conceive how monitoring could be done if the person charged with doing it was not told what it was that was to be checked on.

[113] The fact that the duty registrar endorsed her name on the head injury form suggests to me that she must have conveyed to J's father that he might need to return the child to the hospital. Why else would she do something to identify herself as a point of contact? (She was due to remain on duty at the hospital for a further 12 and a half hours after she sent J home.) I consider that is probable that in the context of alerting the first plaintiff to the possibility that J might have to be brought back, the duty registrar would have informed him of the circumstances that might make that necessary. Dr Edeling conceded under cross-examination that if it were found that the duty registrar had explained to J's father that he should bring the child back to hospital if it were drowsy or had any of the common signs of an altered mental state, she would have complied with what he termed 'a reasonable standard'.

[114] J's father said that had he been warned to look out for drowsiness, he would have immediately returned with J when the child fell asleep in the car soon after they left the hospital. That is indeed in accord with the inherent probabilities, provided that he had sufficiently appreciated that although J appeared to be alright, there was a possibility that he might not be. His evidence gave me the impression that what had impacted on him most forcibly was the doctor's reassurance that J did not appear to have sustained a serious injury. That would explain his readiness to attribute J's drowsiness to the Panado medication.

[115] My impression that J's father's relief at being told that J seemed to be fine could have resulted in his discounting the importance of watching out for signs of any deterioration in J's condition was underscored by the fact of his failure to be concerned about J not waking up when his mother entered the car and shifted him, or when he was carried from the car into the house when they reached home. Even if the depth of J's slumber did not strike him as significant at the time, I would have thought

it should have become of concern when he read the head injury form.⁷¹ The form is not a model of draftmanship, but it did state clearly enough that the patient should be immediately returned to the hospital if he/she complained of a severe headache, became increasingly difficult to wake, or lost consciousness. J had complained of a continuing headache and had remained asleep when one would have expected him to wake up when moved around. Had J's father been sufficiently astute to his monitoring responsibility, I would have expected him to have reacted to the written warnings in the circumstances, even if only by checking to see whether he could wake the child up. If the content of the head injury form did not move him to action, so also, very conceivably, might not oral advice given to him to watch out for drowsiness.

[116] There are indeed shortcomings in the wording of the head injury form, and the defendant would be well advised to see to it that it is replaced with an improved version. It has not been proved, however, that any of the defects in the form was causally connected with the failure to get J treated for his epidural haematoma in time to pre-empt the catastrophic consequences of its eventual mass effect. It said enough, in my judgment, to have alerted the plaintiffs to be concerned about J's deep slumber.

[117] The last aspect to consider is the allegation that when the duty registrar instructed the first plaintiff to monitor J she did not explain the position clearly enough, and also that she did not do enough to make sure that he understood the head injury form. I have already dealt with first part to some extent by finding that the inherent probabilities attending the admission that Mr M was told to monitor child support the registrar's assertion that she would have acted in accordance with her usual practice, which was to summarise the signs to be looked out for. In the face of my finding that the doctor probably said more than the first plaintiff's evidence would have me believe, and the duty registrar's understandable inability to recall exactly what she did say, I am unable to find that the plaintiffs have proved on a balance of probability that the doctor failed to say enough. Certainly, the first plaintiff did not come across as someone who would not have been capable of understanding straightforward instructions about the signs to look out for as described by the doctor. As to the second part, I think it was apparent from the first plaintiff's own evidence

⁷¹ See paragraph [19] above for the text of the form.

that he did not act on the warnings in the head injury form, not because he did not understand them, but because he had discounted the possibility of there being anything amiss, coupled with his unfortunate misapprehension that J's sleepiness was attributable to the Panado that he had been given.

Conclusion

[118] In the result, whilst I have great sympathy for the heartrending situation in which the plaintiffs and their family have found themselves as a consequence of J's tragic accident, I am unable to find that they have discharged the onus of proving on a balance of probability that any damages that they and/or J have incurred were caused as a result of the negligence of the duty registrar or the Red Cross Children's Hospital.

[119] Although the defendant was represented by two counsel, he sought an order merely dismissing the action with costs.

[120] An order in the following terms will therefore issue:

The action is dismissed with costs, which shall include the reasonably incurred qualifying fees of Prof Taylor.

A.G. BINNS-WARD
Judge of the High Court

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