THE HIGH COURT OF SOUTH AFRICA

(WESTERN CAPE DIVISION, CAPE TOWN)

In the matter between Case No: 27428/10

AD **FIRST PLAINTIFF**

IB **SECOND PLAINTIFF**

and

MEC FOR HEALTH AND SOCIAL DEVELOPMENT, WESTERN CAPE PROVINCIAL GOVERNMENT **DEFENDANT**

Coram: ROGERS J

Heard: 16-18, 22, 24, 25 & 29 FEBRUARY 2016; 1-4, 7-10, 14-17, 22 & 23 MARCH 2016; 18-21, 25, 26 & 28 APRIL 2016; 3-5, 9-12, 16-19, 23, 24 & 31 MAY 2016; 8, 9 & 16 JUNE 2016; 8, 10, 11 &12 AUGUST 2016

Delivered: 7 SEPTEMBER 2016

JUDGMENT

ROGERS J:

Introduction

[1] The structure of this judgment is as follows:

General

[2] The plaintiffs are the parents of IDT who was born at Mowbray Maternity Hospital on 12 January 2009. After mother and child were discharged following an uneventful birth, IDT began to exhibit signs of jaundice. He was readmitted to the hospital on 16 January 2009. By the time he was discharged on 22 January 2009 he had suffered irreversible brain damage, resulting in athetoid cerebral palsy (‘CP’).

[3] In December 2010 his parents issued summons against the defendant alleging negligent failure to diagnose and treat the jaundice timeously. They claimed

damages for themselves and on behalf of IDT. In July 2012 the defendant conceded the merits. The present judgment is concerned with quantum only.

[4] The trial ran for 45 days from mid-February to mid-June 2016. I heard argument over four days in the second week of August 2016. In regard to issues other than the trust to be mentioned hereunder and related constitutional matters, Mr Irish SC leading Ms Munro appeared for the plaintiffs and Ms Bawa SC leading Ms O'Sullivan for the defendant. In argument on the trust issues the teams were supplemented by Ms Pillay for the plaintiffs and by Mr Budlender SC for the defendant. The Centre for Child Law ('CCL'), which was admitted as an amicus curiae in respect of the trust issues, was represented during argument by Mr Dutton leading Ms Campbell.

[5] The transcript of oral evidence covers 4880 pages; the plaintiffs' expert reports 947 pages; the defendant's expert reports 388 pages; joint minutes of experts 72 pages; the pleadings, further particulars, pre-trial minutes, amendment application and other court documents 775 pages and the documentary exhibits over 1100 pages.[1] The plaintiffs served expert reports from 22 experts of whom 13 testified. The defendant served expert reports from 15 experts of whom six testified. In most instances the experts filed two and sometimes three reports.

[6] In regard to argument, I directed that counsel file concise heads not exceeding 50 pages in length so that I could obtain a clear view of their final positions on the main issues. I indicated that they were at liberty to file supplementary long heads or appendices. The plaintiffs' long heads ran to 150 pages together with about 100 pages of appendices. The defendants' appendices covered 341 pages. The amicus' heads were 24 pages. I was given four files of legal authorities. An already lengthy judgment would be further extended if I were to

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[1] Except for the exhibits handed in during oral evidence (marked "A" – "Z", "AA" – "ZZ" and "AB" – "AW"), the pleadings, documentary bundles and so forth were contained in 11 separately numbered indices as follows: 1 = pre-trial minutes; 2 = court orders; 3 = pleadings; 4 = further particulars; 5 = amicus papers; 6 = plaintiffs' expert reports; 7 = defendant's expert reports; 8 = joint minutes of experts; 9 = documents relating to past expenses; 10 = discovery affidavits; 11 = miscellaneous documents; 12 = hospital records. I shall reference these documents by index and page numbers (eg 3/50 = page 50 of the pleadings index).

identify and respond to all the arguments. I have, however, read all the submissions and endeavoured to ensure that my judgment addresses the main contentions.

[7] By the time the trial started the claims were R2 010 354 for the plaintiffs personally, R32 932 148 for IDT and R3 293 215 for the cost of protecting and administering IDT's award. Certain items of the claims were agreed before and during the trial. Some were agreed in a specified amount, others on the basis of formulas with the determination of the final amounts to await my finding of IDT's life expectancy. Many items remain fully in dispute.

Description of IDT's condition and the claims

[8] Athetoid CP is far less common than spastic CP. Athetoid CP is characterised by low muscle tone and uncoordinated movements. The sufferer is unable to isolate the muscles required for a desired activity. Fine motor movement is problematic.

[9] IDT, now a boy of seven, can sit unaided but with less stability than an unimpaired child. He can get from the floor or a chair to a standing position. He can walk short distances unaided, using walls and furniture for stability. His gait is uneven with a wide base. He can propel himself on a toy scooter and pedal a tricycle. He has a manual wheelchair which in the home is used as a chair rather than for mobility.

[10] There is an international standard called the Gross Motor Function Classification System ('GMFCS') for classifying the gross motor function of CP children.[2] It comprises five levels (I-V), Level V being the most severe impairment. The plaintiffs contend that IDT is a Level II. The defendant's experts classify him at Level III. The level of IDT's gross motor function influences the quantification of damages in two opposing ways. The more severe the impairment, the greater might be the need and cost of interventions. On the other hand, a more severe impairment might reduce IDT's life expectancy, thus reducing the period over which future interventions will be necessary.

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[2] For a description of the GMFCS, see exhibit "AH".

[11] Another international standard is the Manual Ability Classification System ('MACS') which measures the functional ability of a person's manual abilities.[3] This is also a five-level system. There is some question as to whether IDT should be classified as a MACS III or IV, which depends on whether one considers that he can handle most, or only selected, objects in his ordinary environment.

[12] Among the disputed items arising from IDT's muscular problems are (i) the extent and cost of physiotherapy; (ii) the extent and cost of mobility devices such as wheelchairs, walking devices, car seats and the like; (iii) orthotic devices. The plaintiffs also claim the cost of adapting an ordinary home to accommodate IDT's challenges. Agreement has been reached on the amount to be paid by the defendant in this latter respect.

[13] IDT can eat finger-foods on his own. He can use a spoon and fork but the process is slow and messy. The ability to self-feed is relevant to life expectancy. The defendant considers that IDT is for all practical purposes fed by others and should not be considered a self-feeder. This tends to reduce his life expectancy. The plaintiffs hold a contrary position.

[14] IDT was initially doubly incontinent. He still wears diapers. Although he defecates and urinates in his diapers, he has been taught to go to a particular part of the house when he wishes to defecate. It is intended that he should undergo toilet training and that there may be improvement. The claims relating to the cost of diapers and the increased risk of medical conditions associated with incontinence have been settled.

[15] The brain damage has left IDT with permanent hearing loss. The most recent audiological tests of which I have evidence put his hearing loss bilaterally as 'moderately severe'. The form of hearing loss is auditory neuropathy. In this condition the outer hairs of the cochlear have normal function but the transmission of electrical signals to the brain via the auditory nerve is not synchronised. This

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[3] For a description of the MACS, see exhibit "P".

affects the volume and coherence of perceived sound, which may fluctuate from moment to moment.

[16] The plaintiffs initially claimed the cost of cochlear implants, with lifelong hearing aids in the alternative. By the start of the trial they confined the claim to hearing aids. IDT was fitted with hearing aids in May 2010 on the recommendation of Red Cross Hospital but showed resistance to wearing them. There was a dispute as to whether IDT would benefit from hearing aids and to what extent he would tolerate them. The extent and cost of future audiological assessments were also in issue. All the claims relating to audiology have, however, now been settled

[17] Communication is a major challenge in IDT's life. Because of his severe hearing impairment he will probably not develop expressive speech. He can make sounds but cannot verbalise. The precise extent to which he can hear and understand speech unaided is unclear. Because of the nature of auditory neuropathy, it may vary from day to day. There is some evidence that he can hear and understand simple instructions, even when unaccompanied by visual or gestural cues. It is very unlikely, however, that he will ever be able to rely wholly on verbal input.

[18] He began private speech and communication therapy at the Speak-to-Me Clinic ('STM') in April 2015. The therapy which someone like IDT needs is referred to as Alternative and Augmentative Communication ('AAC'), a collective term for a variety of communication methods to supplement, enhance or replace existing speech and writing. IDT's uncoordinated movements and lack of fine motor control make conventional sign language difficult. STM is teaching IDT keyword signing. Unlike sign language, which is a language with its own syntax, keyword signing is designed to enable the user to sign one or two key words from a conventional sentence. Keyword signing is one aspect of AAC. Another is the use of symbol cards.

[19] Electronic devices are also used in AAC. During June 2015 IDT was supplied with a Sony touchscreen laptop with specialised software, The Grid2. IDT can select appropriate icons on the screen. The device is used to enhance his education and

enable him to communicate by the selections he makes. Portable electronic devices can also be used to generate voice output.

[20] There were many disputed claims relating to audiology, speech therapy and AAC. All the claims under these headings were subsequently settled.

[21] IDT's difficulties with communication and movement mean that his cognitive abilities cannot be tested psychometrically. Athetoid CP is not necessarily accompanied by cognitive impairment. IDT is able to derive pleasure from things he enjoys, including watching television, playing with toys and splashing in water. He shows unhappiness or anger with things he dislikes. He is able to recognise two-dimensional symbols. He has an understanding of cause and effect. He is able to understand short sentences when accompanied with keyword signs and pictures. His expressive communication is limited to making requests about basic wants and needs. The paediatric neurologists concurred that the clinical impression was of mild mental retardation but that view is not shared by other witnesses called by the plaintiff, in particular Ms Bubb, a clinical and educational psychologist.

[22] CP increases the risk of psychiatric disorders. These may be linked directly to brain damage or may be indirectly associated with CP, for example a heightened risk of depression or anxiety where the sufferer has sufficient insight into his plight. There are disputed claims for future psychiatric care.

[23] It is common cause that IDT is unemployable and that he is entitled to compensation for damage to his earning capacity. The parties differ as to his likely career path and the remuneration he would probably have earned from the various positions in that path.

The trust

[24] The parties agree that IDT's award should be paid to a trust to be administered for his benefit. The parties also agree that the amount in respect of future medical expenses should be ring-fenced ('the medical fund') and that in certain circumstances the defendant should be obliged to supplement the medical

fund and that in certain circumstances the defendant should be entitled to a refund from the medical fund (I refer to these as the top-up and claw-back provisions). The terms of these provisions and certain other aspects of the trust deed are in dispute.

[25] The trust issues were formally introduced by way of a conditional counterclaim by the defendant to which the plaintiffs replicated. They annexed to their respective pleadings the trust deeds they proposed.

The case manager

[26] The parties agree that a suitably qualified person should be appointed as IDT's case manager for life. The function of the case manager is to coordinate and monitor therapies and other interventions, to assist in identifying and engaging therapists, doctors and other service providers, to help in sourcing equipment, to provide reports to the trust, to motivate and obtain approval for trust expenditure and so forth. Although the case manager would typically be a health professional, she is not part of the treating team.

[27] In March 2015 the plaintiffs engaged Ms Elsabet Bester, an occupational therapist, as the case manager. To date her fees have been funded from an interim payment of R1,5 million which the defendant made on 31 March 2014. The plaintiffs intend that Ms Bester should continue as the case manager. The defendant does not question her expertise or experience. There is a limited residual dispute regarding the hourly demands of case management and a more general dispute as to the rate of remuneration.

Facilitator and caregivers

[28] The facilitator is a person to be present with IDT during ordinary working hours, accompanying him to school and private therapy and helping him with his home program. She requires more than basic caring skills. Among other things, she needs to have a driving licence, be computer literate and have an ability and willingness to be trained in the care of special-needs children.

[29] The plaintiffs appointed Ms Jessica Lundy as IDT's facilitator as from 1 June 2015. Again this has been funded from the interim payment.

[30] The parties agree that IDT needs a facilitator until completion of his school years. During the course of the trial they reached full agreement regarding the hours and rate of remuneration.

[31] The plaintiffs also claim the cost of additional caregivers to provide more basic care outside ordinary working hours and during the facilitator's annual leave and once IDT leaves school. The extent and cost of this additional care were initially in dispute but were settled during the course of the trial.

Actuarial aspects

[32] Pursuant to the findings made in this judgment, actuarial calculations will need to be performed to quantify the awards in respect of future expenses and loss of earnings. The parties have agreed that a net discount rate of 2,5% will be used for medical and salary inflation.

Settled claims

[33] The plaintiffs' claims in their personal capacities were resolved before the trial began. These included claims for psychological counselling and remuneration for caregiving provided by IB.

[34] The claimed past medical expenses for IDT (throughout this judgment I use this expression in the widest sense to include all interventions reasonably required by his condition) are set out in annexure "POC2" to the particulars of claim. Many of these have been settled. There are a few remaining items which I will deal with after addressing future medical expenses.

[35] The future medical expenses for IDT are set out in annexure "POC1" to the particulars of claim. They are grouped under headings identifying the principal

expert on whose recommendations the items in question are claimed. The annexure underwent considerable amendment as the trial progressed.

[36] Certain items in “POC1” were settled before the trial began. These relate to paediatric neurology, dentistry and oral hygiene and adaptations to IDT’s home. Accordingly, and although expert reports were filed in respect of these claims, there was no oral evidence relating to them. Among the settled neurological items are treatment for epilepsy at an agreed 20% chance and for Attention Deficit Hyperactivity Disorder at a 50% chance.

[37] Certain other items were settled only after the plaintiff’s’ evidence was led. The groups of items settled in full (either in specified amounts or in accordance with formulas subject to life expectancy) relate to urology, occupational therapy, audiology, speech therapy and AAC. Accordingly, although the court heard extensive evidence from Dr Choonara (a urologist), Ms Crosbie (an occupational therapist), Ms van der Merwe (an audiologist) and Ms Higham and Ms De Freitas (speech therapists from STM), their evidence is now largely irrelevant. The settlement of these items meant that the defendant did not call its corresponding experts Dr Lazarus (a urologist), Ms Coetzer (an occupational therapist) and Ms Müller (an audiologist).

Separation of issues

[38] In order to place this first phase of proceedings on a proper procedural footing, I raised with counsel (somewhat belatedly, in argument) whether it was not desirable to make a rule 33(4) order. Agreement on such an order was subsequently reached, the essence of which is that by way of the present judgment I will determine all issues arising on the pleadings other than (i) the actuarial calculation of the present values of claims for future losses and (ii) costs.

Assessment of expert evidence

[39] When faced with conflicting expert opinions, the court must determine which, if any, of the opinions to accept, based on the reasoning and reliability of the expert

witnesses. The court must determine whether and to what extent an opinion is founded on logical reasoning. An expert's function is to assist the court, not to be partisan. Objectivity is the central prerequisite (see *Michael & Another v Linksfield Park Clinic (Pty) Ltd & Another* 2001 (3) SA 1188 (SCA) paras 37-39; *Jacobs & Another v Transnet Ltd t/a Metrorail & Another* 2015 (1) SCA) 139 paras 14-15). The expert must not assume the role of advocate. If the expert's evidence is to assist the court he or she must be neutral. The expert should state the facts or assumptions from which his or her reasoning proceeds (*PriceWaterhouseCoopers Inc & Others v National Potato Co-Operative Ltd & Another* [2015 2 All SA 403 (SCA) paras 97-99.)

[40] In *Coopers (South Africa) (Pty) Ltd v Deutsche Gesellschaft für Schädlingsbekämpfung mbH* 1976 (3) SA 352 Wessels JA said the following (at 371):

> '[A]n expert's opinion represents his reasoned conclusion based on certain facts or data, which are either common cause, or established by his own evidence or that of some other competent witness. Except possibly where it is not controverted, an expert's bald statement of his opinion is not of any real assistance. A proper evaluation of the opinion can only be undertaken if the process of reasoning which led to the conclusion, including the premises from which the reasoning proceeds, is disclosed by the expert.'

[41] This passage was quoted with approval by the United Kingdom Supreme Court in *Kennedy v Cordia (Services) LLP* [2016] UK SC 6, which contains a full review of the principles relating to expert evidence. In their joint judgment Lords Reed and Hodge, with whom the other members of the court concurred, observed (para 34) that there was a degree of commonality of approach between jurisdictions. They endorsed the warning sounded in an earlier case that 'care must be taken that simple, and not necessarily balanced, anecdotal evidence is not permitted to assume the robe of expertise' (para 42).

[42] They said that an expert may draw on the works of others, such as the findings of published research or the pooled knowledge of a team with whom the expert works (para 41). The expert must demonstrate to the court that he or she has relevant knowledge and experience to offer opinion evidence. If such knowledge

and experience is shown, the expert can draw on the general body of knowledge and understanding of the relevant expertise (para 50).

[43] The *Kennedy* judgment distinguishes between questions of admissibility and weight in relation to expert evidence. In the present case, and save in respect of Prof Cooper, neither side objected to the admissibility of the other side's expert evidence. I shall thus assess such evidence on the basis that it is admissible though there may be instances where my reasons for rejecting part of an expert's view might have justified treating the evidence as inadmissible rather than as merely lacking weight.

[44] In varying degrees the expert reports failed to provide adequate reasons for conclusions and recommendations and omitted to identify literature on which the experts would rely. This was particularly so in relation to Mr Hakopian and Dr Grinker. However neither side objected to amplification in oral evidence, which included reference to and the handing in of published literature. I thus simply record that these failings, apart from amounting to non-compliance with rule 36(9), result in the inefficient use of court time and hamper a judge's ability to prepare for and properly understand the oral testimony. In the present case about 40% of court time in hearing expert witnesses (and this was the bulk of the trial) constituted evidence in chief. This should not be necessary where proper expert reports are filed. The cross-examination too would have been shorter and more focused if fully reasoned reports had been filed.

[45] I make one other preliminary observation. It is disconcerting to a judge to be faced with opposing phalanxes of experts, on the one side supporting higher claims and on the other side supporting lower claims, with the gaps between them often very great. Is it mere coincidence that each side's experts, all supposedly trying independently and impartially to assist the court, reached conclusions favourable to the side that engaged them? This discomfort does not relieve me of the duty to assess each question of expert evidence on its individual merits but there are some instances, which I will identify when appropriate, where there seems to me to have been at least subconscious pro-client bias.

The trust and development of the common law

[46] Before addressing the disputed claims for medical costs I need to deal with the case relating to the trust and allied arguments concerning the development of the common law.

[47] The most contentious aspects concern the top-up and clawback provisions. In summary the plaintiffs' proposal is the following:[4]

- The ring-fenced 'medical fund' will be the actuarially calculated present value of my award in respect of future medical expenses after deducting a pro rata proportion of total permissible legal fees and disbursements less any taxed costs recovered from the defendant. (For convenience I shall refer to these as the 'gross medical fund' and 'net medical fund' respectively. The plaintiffs' attorneys are acting on contingency. The total legal costs, for purposes of determining the net medical fund, will be allocated pro rata across the various heads of damages. The deduction will be reduced by taxed costs recovered from the defendant. The deduction will thus be at least a pro rata share of the attorney/client component and the attorneys' contingency allowance. The deduction may be more if there is a without-prejudice offer negatively affecting the usual costs order.)
- The top-up provisions will only apply if IDT survives beyond his expected death age ('EDA') as determined by my finding on his life expectancy ('LE') and if by that stage the net medical fund (including investment returns thereon) has been depleted. Only medical expenses attributable to IDT's CP will be deducted from the medical fund. (Unrelated medical expenditure would be funded from the award for loss of earnings and general damages.)
- If the corporate trustee considers that a top-up payment is needed, it will issue a certificate of depletion. In anticipation of depletion at IDT's EDA the trustee may make application for a top-up not earlier than 18 months prior to the EDA but no payment need be made until the EDA arrives. Provision is

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[4] For the top-up provisions, see clause 17 of the plaintiffs' trust deed read with the definitions of 'Medical Fund', 'Date of Depletion', 'Certificate of Depletion' and 'Supplementary Payment'. For the claw-back provisions, see clause 18.

made for mediation or arbitration if the defendant disputes the need for the top-up.

- The clawback provision will become operative when the trust terminates, which is upon IDT’s death and settlement of all the trust’s liabilities or on such other date as the court may direct. Upon such termination any residue of the medical fund, together with any equipment acquired from the medical fund, will be transferred to the defendant.

[48] The defendant’s proposal as pleaded at the time of argument differed from the plaintiffs’ in the following respects:[5]

- The ring-fenced ‘medical fund’ will be the gross medical fund without deduction for legal costs. (This means that depletion will take longer.)
- Conversely, though, the top-up provisions will apply immediately and not only in respect of the period for which IDT may survive beyond his EDA.
- Although there is not much difference in the formulation of the clawback provisions, the preceding two bullet points could substantially affect the amount available for clawback on IDT’s death.

[49] In oral argument Mr Budlender explained the defendant’s proposal somewhat differently. He said that the defendant had intended to convey the following:

- The ring-fenced medical fund will be the net rather than the gross amount.
- Once the net medical fund is exhausted, the top-up provisions will become operative subject to one further condition, namely that an amount equal to the gross medical fund has actually been expended on medical costs. This actual expenditure would be the nominal rand expenditure as and when incurred without adjustment for changes in the time-value of money. (If, for example, in ten years’ time there is an item of medical expenditure costing R200 000, the full R200 000 will constitute expenditure towards the threshold even though the present value of that amount (ie at the date of my judgment) is only, say, R60 000.)

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[5] See clause 14.

[50] Since Mr Budlender’s exposition did not accord with the defendant’s proposed trust deed, I asked the defendant’s team to submit a revised draft, which has been done.

[51] There is no doubt in my mind that the defendant’s latest proposal is significantly better for IDT than the plaintiffs’ proposal. Indeed I think this was also true of the defendant’s previous proposal. I find it difficult to understand why the plaintiffs have persisted with their version. During argument I understood Mr Irish to concede that the defendant’s latest proposal is very favourable to IDT:

- The date of actual depletion of the net medical fund will be the same on both versions.
- On the defendant’s version its obligation to begin top-up payments might be deferred beyond the depletion date if by that date an amount equal to the gross medical fund has not yet been expended. However that would only be worse for IDT than the plaintiff’s version if IDT were to reach his EDA without there having yet been expenditure exceeding the amount of the gross medical fund. Since the defendant accepts rand nominalism as the basis for determining the latter question, it is just about certain that a nominal amount equal to the gross medical fund will have been spent before IDT’s EDA. For two reasons, the investment growth in the medical fund will fall well short of neutralising increasing medical prices: (i) Investment returns will only be earned on the net medical fund. (ii) The net medical fund itself will reduce as medical expenses are incurred, so there will returns on a diminishing amount.
- IDT will thus benefit from the topping-up sooner on the defendant’s version than on the plaintiffs’ version. (And, curiously, the worse the plaintiffs fare on costs, eg if it transpires that the defendant has made a without-prejudice tender exceeding my award, the smaller the starting value of the net medical fund will be, thus potentially triggering a top-up obligation even sooner.)

[52] In its counterclaim the defendant pleaded that the common law should be developed to allow the clawback provisions. The alleged need to develop the common law was pleaded in recognition that the current position at common law is

(i) that a person suing for damages must claim, by way of single proceedings, all damages to which he may be entitled, both past and prospective (ii) that the court is obliged to award these damages as a lump sum – the plaintiff is not entitled to claim and is not obliged to accept future damages by way of periodic payments. (I shall refer to these as the one-action rule and the lump-sum rule.)

[53] The pleaded development of the common law was said to apply to (i) delictual claims (ii) for very substantial amounts (iii) arising from medical negligence (iv) where such damages depend in large measure on the injured person's LE (v) with the resultant substantial risk that the awarded damages will not be used for their intended purposes (vi) and where the claim is made against the Western Cape Department of Health, alternatively against an organ of state which has the constitutional duty to provide access to health care services, alternatively against any defendant.

[54] For reasons which I shall presently explain, I do not think it necessary in this case to express a final view on whether and to what extent the common law should be developed in the manner pleaded by the defendant. However, since the defendant views the present matter as a test case and has engaged senior counsel with special expertise in constitutional matters to argue this part of the case, I shall deal briefly with the main points. This may also be of assistance if the case were to go further and another court were to find that the issues relating to the development of the common law should be decided.

[55] Precisely what the state of the common law would be if it were developed as pleaded by the defendant is not altogether clear. The defendant has alleged that the existing rule which needs to be changed is that an award of damages may not be made 'in such a manner that the amount ultimately to be paid is dependent on when future events take place, or whether they take place'. There are various ways in which the one-action rule and/or the lump-sum rule might be varied. One possibility is to permit multiple actions. Another is to direct a defendant to make periodic payments in fixed annual amounts, or as and when future expenses are incurred, until the victim's death. In the present case the defendant does not in terms plead that any of these solutions should be adopted. Mr Budlender submitted that all I

need recognise for present purposes is a flexible jurisdiction to fashion solutions which are fair and reasonable in the particular circumstances of the case. In this particular case, he submitted, the defendant's proposal was a fair and reasonable solution. The development of the law in this field would occur incrementally. Mr Budlender said I need not concern myself with what solutions might be thought fair and reasonable in other cases.

[56] That our common law of delictual damages incorporates the one-action and lump-sum rules is clear (*Mouton v Die Mynwerkersunie* 1977 (1) SA 119 (A) at 147B-D; *Marine & Trade Insurance Co Ltd v Katz NO* 1979 (4) SA 961 (A) at 970C-H; *Evins v Shield Insurance Co Ltd* 1980 (2) SA 814 (A) at 835B-836A; *Coetzee v Guardian National Insurance Co Ltd* 1993 (3) SA 384 (W) at 392E-J; Boberg *The Law of Delict* at 486; Van der Walt & Midgley *Principle of Delict* 3rd Ed para152). In relation to road accident injuries, the legislature has intervened to allow future medical expenses to be covered by an undertaking (now s 17(4)(b) of the Road Accident Fund Act 56 of 1996, the first version of which was s 21(1C) inserted in 1978 into the Compulsory Motor Vehicle Insurance Act 56 of 1972).[6]

[57] When applying a provision of the Bill of Rights the court must, in order to give effect to that right, apply or if necessary develop the common law and may also develop rules of the common law to limit the right in question (s 8(2) of the Constitution). When developing the common law the court must promote the spirit, purport and objects of the Bill of Rights (s 39(2)). Because the Constitution is our supreme law, any law (including the common law) which is inconsistent with it is invalid (s 2).

[58] The provisions of the Bill of Rights which are said by the defendant to give rise to the need to develop the common law are (i) everyone's right to have access to health care services, with the corresponding obligation on the state to take

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[6] In *Wade v Santam Insurance Co Ltd & Another* 1985 1 PH J3 (C) Baker J ordered a defendant to pay the claimant's lost earnings by way of indexed instalments until date of death or remarriage. The report is terse. The judge apparently said that he 'got the idea' of ordering instalments from s 21(1C) of Act 56 of 1972, while acknowledging that the section was not directly applicable. The authors of Neethling-Potgieter-Visser *Law of Delict* 7th Ed observe, correctly in my view, that there appears to be no authority for the view that the court has the inherent jurisdiction to make such an order (p 245 fn 223). *Wade* has not subsequently been cited in any reported decisions.

reasonable legislative and other measures, within available resources, to achieve the progressive realisation of this right (s 27 read with s 7(2)); (ii) the right which every child has to basic health care services (s 28(1)(c)) and to have his or her best interests treated as of paramount importance (s 28(2)).

[59] The pleaded development of the common law is not confined to damages suffered by children. In response to a question from the court, Mr Budlender confirmed that it was not the defendant's case that the common law needed to be developed in order to safeguard the interests of children harmed by medical negligence. The proposed development would apply to adult victims as well, because their claims might also relate to a lengthy future period. In *Singh & Another v Ebrahim* [2010] ZASCA 145 the court rejected an argument that s 28 justified differential treatment of children in the assessment of damages (paras 123-130).

[60] The defendant's case is thus concerned with the financial burden which lump-sum awards place on public hospitals, a burden which (so the argument goes) can hamper organs of state in progressively realising everyone's right to have access to health care services and in fulfilling their obligation to provide basic health care services to all children. In short, awards in favour of the few are said to harm the rights of the many.

[61] In the present case the lump-sum rule is engaged in somewhat attenuated fashion. The defendant does not say that it should only have to pay for IDT's future medical expenses as and when they are incurred or that future actions should be instituted as future expenses are incurred. Both sides have proceeded on the basis that I must quantify and make a lump-sum award in the usual manner. In a general sense the top-up and clawback provisions are only intended to be operative if future events reveal that the damages as conventionally assessed are more or less than IDT requires.

[62] Whatever the pros and cons might be of more radical departures from the one-action rule or lump-sum rule, the proposed departure in the present case is not justified by its constitutional premise. The defendant accepts that it would not be fair or reasonable to have a clawback provision without a top-up provision. Furthermore

the defendant does not say that its proposed solution relieves the court of the duty to assess damages conventionally. The defendant accepts that damages as conventionally assessed must be paid as a lump sum to the trust. No evidence was led to show that this type of solution would promote the constitutional rights and duties on which the defendant relies nor is such a conclusion self-evident, indeed it is counter-intuitive:

- Private and public resources would still have to be expended on a full quantum trial, despite the fact that the top-up and clawback provisions might render the exercise largely academic
- The defendant and similarly placed organs of state would still have to pay damages, as conventionally assessed, in a lump sum. The money in question would thus not be available to meet state organs' obligations to the population at large.
- Although there would be some prospect of eventual clawback, in most cases that would lie many years in the future.
- In any given case there would be an even likelihood of the top-up and clawback provisions becoming operative. On average one would expect the financial benefit from clawback rights to be neutralised by the financial burden from top-up provisions.

[63] The first and second of these observations would not apply if one adopted a more radical departure from the lump-sum rule, namely substituting for a lump-sum award an obligation to meet future medical expenses as they arise. Such a regime might allow public funds to be better matched to current public needs and in a general sense this might enhance the constitutional rights and duties which the defendant invokes. The parties and the court would also be saved the time and expense of determining future medical costs.

[64] In my view, however, a radical departure of that kind should be left to the legislature. The decision is one of policy. There are arguments for and against the lump-sum rule. While the lump-sum rule may sometimes result in over-compensation or under-compensation, it has the advantage of finality. An order for

periodic payments inevitably involves risk of ongoing disputes as to whether particular medical expenditure is reasonable and whether it arises from the injury for which the defendant is liable. An order against an organ of state to make indeterminate payments over an indeterminate period may present significant budgetary and fiscal challenges. In order properly to assess its annual requirements under such an order, an organ of state would have to obtain annual updates on the claimant's condition and likely medical requirements. Even if this information were readily obtainable, its assessment could be time-consuming and expensive. If the lump-sum rule were varied, there would be many aspects of definition and detail which would more appropriately be regulated by a statutory scheme.

[65] In our constitutional democracy it is the legislature and not the courts which has the major responsibility for law reform. The judiciary must exercise caution, confining itself 'to those incremental changes which are necessary to keep the common law in step with the dynamic and evolving fabric of our society' (*Carmichele v Minister of Safety and Security & Another (Centre for Applied Legal Studies intervening)* 2001 (4) SA 938 (CC) para 36; *Mighty Solutions t/a Orlando Service Station v Engen Petroleum Ltd & Another* 2016 (1) SA 621 (CC) paras 37-40). It has also been observed that a constitutional principle that tends to be overlooked when generalised resort is made to constitutional values is the principle of legality: 'Making rules of law discretionary or subject to value judgments may be destructive of the rule of law' (*Bredenkamp & Others v Standard Bank of South Africa Ltd* 2010 (4) SA 468 (SCA) para 39).

[66] I am not attracted by the argument that the court should have a wide flexible jurisdiction to fashioning orders to address the perceived shortcomings of the lump-sum rule. The rule of law is a foundational principle of our democracy and equality before the law is a guaranteed right. Law needs to have a measure of predictability (see *Mighty Solutions* para 38) and to operate similarly in relation to similarly placed litigants. If the court had the power, without the present defendant's consent, to compel it to make provision for indeterminate payments over an indeterminate period (and this is what Mr Budlender argued), I do not see how such an order could be granted in this case but not in a host of broadly similar cases which may arise against organs of state.

[67] The common law in England and Scotland adopted the lump-sum rule (see *Simon v Helmot* [2012] UKPC 5 paras 25-26). By way of s 2(1) of the Damages Act 1996 the English courts were given the power to make orders for periodic payment if both parties agreed. In *Wells v Wells* [1998] 3 All ER 481 (HL) Lord Steyn identified various shortcomings in the common law lump-sum rule which applied in cases where one or both parties objected to periodic payments (as apparently they routinely did) but he said that judges could not make the change; only Parliament could 'solve the problem' (at 502e-h). The English lawmaker intervened by way of ss 100-101 of the Courts Act 2003, which substituted the relevant provisions of the Damages Act.

[68] The English regime reflects the sophistication of a legislative scheme (see a discussion in *Thompstone v Tameside and Glossup Acute Services NHS Trust* [2006] EWHC 2904; [2007] LS Law Med 71).[7] The English regime does not leave anything over for later decision and potential dispute. After a full enquiry into damages the trial court makes an order for periodic payments which are annually adjusted in accordance with the retail prices index unless the court orders some other index to apply. The court is required to be satisfied that the periodic payments are reasonably secure. There are provisions relating to the tax treatment of payments, the beneficiary's bankruptcy and the like. The regime is of potential application to all future pecuniary loss, including loss of earnings.

[69] The common law lump-sum rule obtains in Australia (*Todorovic v Walter* [1981] HCA 72 para 6; *Gray v Richards* [2014] HCA 40 para 1) and in Canada (*Watkins v Olafson* 1989 CanLII 36 (SCC), [1989 2 SCR 750; *Krangle v Brisco* 2002 CanLII 9 (SCC), [2002] 1 SCR 205 para 21). In *Watkins* the Supreme Court of Canada rejected an invitation to alter the lump-sum rule on the basis that such a significant change should be left to the lawmaker. The case contains an instructive discussion of the relevant considerations and of legislative interventions in the United States and elsewhere.

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[7] See also on appeal at [2008] EWCA Civ 5; [2008] 2 All ER 553 (CA).

[70] Mr Irish argued, with reference to s 66 of the Public Finance Management Act 1 of 1999 ('PFMA'), that an organ of state is precluded from borrowing money or issuing a guarantee, indemnity or security or entering into any other transaction that binds the institution to a future financial commitment unless it is authorised by the PFMA (s 66(1)) and has been approved, in the case of a Provincial Revenue Fund, by the provincial MEC for Finance (s 66(2)). Mr Budlender objected to this argument on the basis that it was not pleaded. Mr Irish's riposte was that the plaintiffs had pleaded that it was not 'competent' for the court to develop the common law in the manner envisaged by the defendant's trust deed, that 'competent' meant competent in law, that the PFMA was a law, and that the plaintiffs were not obliged to plead the law. I confess to finding this submission contrived. If the plaintiffs' legal representatives had had s 66 of the PFMA in mind when pleading, I think they would have made express reference to it.

[71] Nonetheless, in considering a development of the common law I cannot ignore statutory provisions which may be inconsistent with such development. Section 66(1) would not apply to a court order save perhaps for a settlement which is made an order of court. However if the common law were developed as the defendant proposes one would expect claimants and organs of state to avoid litigation by seeking and offering undertakings in respect of future expenses, if necessary accompanied by a reasonable provisional sum. The ability to resolve claims in this way would be one of the significant policy considerations in favour of a relaxation of the lump-sum rule.

[72] It is here that s 66(1) may present difficulty. The undertaking would bind the institution to a future financial commitment. My attention was not directed to any provision of the PFMA which in terms authorises such a transaction. It may be that entering into future financial commitments is part of the general executive authority of national and provincial departments. This would be subject inter alia to s 63(1) of the PFMA which stipulates that executive authorities of departments must perform their statutory functions within the limits of the funds authorised 'for the relevant vote' (presumably a reference to money allocated to the department in terms of an Appropriation Act). There would also need to be compliance with the Treasury Regulations promulgated under the PFMA. In terms of para 8.2.1 of the Treasury

Regulations an official of an institution may not spend or commit public money without the approval of the accounting officer or a properly delegated or authorised officer. In the present case that would be a reference to the accounting officer of the WC Department for Health and Social Development. If a transaction binds or may bind the Provincial Revenue Fund the transaction must also be authorised by the MEC for Finance (s 66(2)) though it is not clear to me that a departmental undertaking would purport to bind the Provincial Revenue Fund.

[73] These provisions may not be an absolute bar to voluntary undertakings by a national or provincial department but they provide further reason for judicial caution when intruding into the field of public finance.

[74] In summary, the departure from the common law which the defendant contends for in this particular case (ie a solution following the form of its proposed trust deed) has not been shown to be a development which will promote or enhance any rights or duties in the Bill Of Rights. A more radical departure, in which the obligation to pay a lump sum is replaced by an obligation to make periodic payments, might promote or enhance certain rights and duties in the Bill Of Rights but is a development which should be left to the legislature.

[75] However it is unnecessary in this particular case to express a final view on these questions. This is because the defendant has volunteered terms (insofar as top-up and clawback provisions are concerned) which are more beneficial for IDT than those the plaintiffs were willing to accept. I thus need not decide whether a court could in law impose such terms on an unwilling defendant.

[76] A court awarding damages in respect of injuries suffered by a child has the power to order that such damages be paid to a trustee to be administered for the child’s benefit (*Van Rij NO v Employers’ Liability Assurance Corporation Limited* 1964 (4) SA 737 (W); *Woji v Santam Insurance Co Ltd* 1981 (1) SA 1031 (A) at 1030H-1031H; *Dube NO v Road Accident Fund* 2014 (1) SA 577 (GSJ)). In *Ex Parte Oppel & Another* 2002 (5) SA 125 (C) Ngwenya AJ said that where the child has a guardian the court will not appoint a curator (or presumably a trustee) save in exceptional circumstances He refused the application even though the applicants

were the parents and felt they lacked the skills to manage the award and even though the RAF would be meeting the costs of curatorship. I do not think the court’s discretion to act in the child’s best interests is fettered by a test of ‘exceptional circumstances’, and the learned judge’s contrary view does not seem to be borne out by the authorities he cited. The attitude of the guardian will, of course, always deserve careful consideration. In the present case the plaintiffs, duly advised by an experienced legal team, are in favour of a trust. In *Singh* the award was made to a trust. Although the terms of the trust were not in issue on appeal, the course followed was not questioned.

[77] A court might be reluctant to appoint a trustee if it were necessary for the court to engage in extensive drafting of trust terms. In the present case, however, the parties are in essential agreement on most of the terms. They concur that I have jurisdiction to determine the remaining points of difference on the basis of what I consider reasonable, bearing in mind IDT’s best interests. Counsel agreed that the legal teams could settle the wording once I ruled on the substantive issues.

[78] The question may arise as to whether an award should be paid to a trust or to a curator bonis. I referred the parties in that regard to the judgment of Bertelsmann J in *Modiba NO: In re Ruca v Road Accident Fund* 2014 ZAGPPHC 1071. All counsel, including counsel for the amicus, submitted that IDT’s best interests would be served by the more sophisticated mechanism of a trust. That is also my prima facie view. I note that the plaintiffs’ proposed trust deed requires the trustee to furnish the same information and documentation to the Master as a curator bonis would have to do. The defendant’s version obliges the trustee to furnish information and documentation to the Master on request. However counsel agreed that the Master should be invited to comment on the question before I take a final decision. The present judgment will make provision for that to happen.

[79] In regard to the top-up and clawback provisions of the trust deed, I have explained why the terms offered by the defendant are favourable to IDT. Mr Irish said in argument that because of s 66 of the PFMA the plaintiffs believed and still believe that the undertakings offered by the defendant are of questionable validity and they thus do not attach much weight to them. He said that the plaintiffs’ primary

goal was to ensure that the trust received upfront the full amount of damages conventionally assessed. They have always been willing to agree to the defendant's reversionary interest, whether or not accompanied by top-up undertakings. If the top-up undertakings are honoured or prove to be enforceable, so much the better. IDT's interest in the net medical fund will cease with his death. The persons affected by the reversionary interest would be his heirs. His parents, who are his current heirs, do not seek any benefit for themselves from the residue of the medical fund.

[80] This being the plaintiff's' attitude, I think I can allow the top-up and reversionary provisions to be included in the trust deed without making a legal determination that the top-up undertakings are valid (though naturally the defendant will be bound unless the undertakings suffer from a statutory defect). And because the defendant is willing to offer the top-up provisions and the plaintiffs are willing to offer the clawback provisions, I need not and do not decide whether (assuming a development of the common law) they are the sorts of provisions which it would be reasonable and fair to impose on a defendant or plaintiff in the absence of agreement.

[81] There are some minor points of detail on the trust deed which it is more convenient to address at the end of this judgment. I thought it important, though, to explain the controversy regarding the top-up and clawback provisions before proceeding further since otherwise the curious reader might have wondered why it was necessary for me to hear 45 days of evidence and four days of argument largely devoted to assessing future medical costs.

Life expectancy

Introduction

[82] IDT's life expectancy ('LE') has an important bearing on future medical expenses, the cost of administering the award and loss of earnings. Medical expenses and administration costs will be incurred for as long as IDT is alive. In regard to loss of earnings, our law is that if a claimant post-morbidly has a shortened LE his earning capacity must be computed with reference to the earnings he would

have earned pre-morbidly up to his post-morbid expected death age ('EDA'). There is no claim for the so-called 'lost years', ie for money the claimant could have earned in the additional years for which he would have survived but for the injury (*Lockhat's Estate v North British & Mercantile Insurance Co Ltd* 1959 (3) SA 296 (A) at 304G-306G; *Singh & Another v Ebrahim* [2010] ZASCA 145 paras 7-11 and 143-147).

[83] The plaintiffs called Dr Strauss as their principal LE witness.[8] The defendant's principal witness on this issue was Prof Cooper.

[84] The expertise of Dr Strauss, who is based in California, is not in question. He is a mathematician and statistician who has worked for many years as a medical researcher in the sphere of LE and epidemiological studies in developmental disabilities and traumatic injury, including CP. His eminence and expertise in this field was acknowledged in *Singh*.[9]

[85] Prof Cooper is a paediatrician specialising in neonatology. He is Professor and Head of Paediatrics at Charlotte Maxele Hospital. Before his evidence began Mr Irish foreshadowed an objection to his expertise on LE. Mr Irish asked me to hear evidence from Prof Cooper on his qualifications and to rule whether he should be permitted to testify on the merits. I declined this proposal. The objection was raised at the last minute (Prof Cooper had travelled from Johannesburg to testify). Prof Cooper's evidence was expected to finish within a day (as in fact occurred). It appeared to me, in the larger scheme of the trial, that greater injustice might flow from an incorrect refusal to hear evidence on the merits than from allowing evidence from a witness whose expertise I might later find was insufficient.

[86] In the event I do not consider Prof Cooper's evidence to be inadmissible for want of expertise. He explained that since there are no South African experts equivalent to Dr Strauss, ie statisticians who have focused on the effects of conditions such as cerebral palsy on LE, he (Prof Cooper) has taken an interest in the matter by studying the literature, including the work of Dr Strauss. Prof Cooper's

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[8] Although he was for many years Professor of the Department of Statistics at the University of California, he is now retired. I use 'Dr' rather than 'Prof' in accordance with what I understand to be his preference.

[9] Paras 13 and 15.

expertise in paediatrics enables him to understand the clinical picture presented by such patients. He had some understanding of statistics, which he applied in his doctoral thesis.

[87] To clarify terminology, LE refers to the additional years which a person (X) is expected to live as from X's age at the calculation date. By adding the additional years to the current age one arrives at X's EDA.[10] In order to determine LE along scientific lines one needs data on actual mortality rates from a statistically significant population. At birth X's LE and EDA are the same. Although LE decreases with age, the EDA increases. This is because the deaths occurring from birth to X's current age no longer negatively affect X's LE.

The LEP and CDER

[88] There is no mortality data on South African CP sufferers. The most extensive foreign data is from the Life Expectancy Project ('LEP') in California, spearheaded by Dr Strauss and his colleagues. The LEP has been tracking a large cohort of CP children in California since 1983. The data currently includes CP children up to age 29. The LEP receives annual information on each participant by way of a Client Development Evaluation Report ('CDER') submitted by the relevant caregiver or social worker.[11]

[89] The CDER contains patient information on a wide range of symptoms and conditions and their severity. The data has enabled the LEP to determine the relative impacts of various CP symptoms and conditions on LE. In order to determine the LE of a specific CP boy (X), Dr Strauss selects from the LEP database a subset of male CP participants with more or less the same symptoms and conditions as X. The creation of the subset involves experience, expertise and judgment of a kind which Dr Strauss is pre-eminently qualified to bring to bear.

[90] If X were a Californian boy, it would not be necessary to travel beyond the Californian data to determine X's LE. More particularly one would not need to

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[10] The defendant's submissions in annexure "DH9" mistakenly equate LE with EDA.
[11] A blank CDER was handed up as exhibit "L".

concern oneself with the ordinary male LE of Californian boys. However because ordinary LE differs from country to country the LE of CP children may also differ from country to country. One thus cannot apply the Californian data to a child in another country without adjustment. Since ordinary LE in South Africa is lower than in the United States, an adjustment is needed. The approach adopted by Dr Strauss, which is reasonable and has not been challenged, is to assume that CP LE in California and South Africa will differ in the same ratio as ordinary LE does.[12]

Dr Strauss' reports

[91] Dr Strauss' first report dated 16 July 2014 contained his calculation of IDT's LE at age 5,5.[13] He determined that a similarly-placed Californian CP boy would have a LE of 56,6 years as against an ordinary American LE of 70,8 years. The reduced LE being 80% of the ordinary figure, he arrived at a LE of 52,5 years for IDT by applying the same percentage to the ordinary LE of a South African boy, which he took to be 66 years in accordance with Life Table 1 in the 2011 edition of Robert Koch's well-known Quantum Yearbook. On this basis IDT's EDA would be 58 as against 71,5.

[92] Dr Strauss's second report dated 5 November 2015 contains his calculation of IDT's LE as a 6,8-year-old boy. Using the same methodology as before, he recalculated IDT's LE as 51,4 years, yielding an EDA of 58,2.

Prof Cooper's report

[93] Professor Cooper's report is dated 11 November 2015. Inexplicably, though by no fault of his own, he was not given Dr Strauss' reports. He used tables furnished in a paper published by Dr Strauss and others in 2014. This paper was not adduced in evidence but from it Prof Cooper identified the LE of CP boys at ages 4 and 15. After making certain adjustments for IDT's age (6,8 years) and physical condition, he concluded that as a Californian boy IDT would have LE of 35,6 years

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[12] This was the approach in *Singh & Another v Ebrahim* [2010] ZASCA 145. See also *Whiten v St Georges' Healthcare NHS Trust* [2011] EWHC 2066 (QB); [2012] Med LR 1 QBD paras 84-85; *Hill v State of Queensland* [2006] QSC 244 paras 22, 37 & 38.

[13] Age fractions are decimal, so an age of 5,5 equates to five years and six months.

which was 58% of ordinary American LE. He applied this percentage to Koch's Life Table 4 in order to arrive at IDT's LE, which he thus put at 28,7 years (an EDA of 35,6).

The joint minute

[94] Prof Cooper did not have the benefit of access to the full Californian data or the statistical expertise to deploy it in a way best suited to IDT's condition and age. Dr Strauss and Prof Cooper produced a joint minute dated 23 December 2015 following email communication. It is apparent from this minute and from the oral testimony that Prof Cooper did not dispute Dr Strauss' methodology or his identification of the main factors affecting IDT's LE. The main points of difference were (i) the degree of IDT's impairment in the areas of mobility and feeding; (ii) the appropriate life table for determining the ordinary South African LE.

[95] In the joint minute Dr Strauss updated his model to 23 December 2015, ie to account for the fact that IDT was now (just about) 7 years old. Dr Strauss reduced the LE ratio to 79% for reasons I shall presently explain. He also recorded that it would be reasonable to apply this ratio to Koch's Life Table 2 (he had previously used Table 1 which would have yielded a greater LE). This resulted in a LE for IDT of 49,3 years and an EDA of 56,3.

Miscellaneous factors

[96] Before dealing more fully with Dr Strauss' model, I should mention various factors, apart from mobility and feeding, which may affect LE.

[97] The first is low weight. The point at which this has a negative effect on LE has been found by the LEP to differ depending on the child's GMFCS classification. The better the classification, the more pronounced the low weight must be in order to become relevant to LE. The LEP has produced gender-specific weight-for-age percentile graphs for each GMFCS classification. The shaded red area at the base of each graph indicates the zone where low weight may negatively affect LE (I refer to this as the 'red zone'). In the case of a boy classified as GMFCS II (relatively

good mobility) low weight only becomes an issue if his weight-for-age is below the 5th percentile. In the case of a boy classified as GMFCS III and IV (ie poorer mobility) low weight may be negative factor up to the 20th percentile.

[98] At certain times IDT's weight has put him on or just beneath the beginning of the red zone, depending on whether one classifies him as a GMFCS II or III. Dr Strauss considered that there was no basis for a downward adjustment of IDT's LE. Prof Cooper, while accepting that the risk cannot be precisely quantified, considered that there should be a qualitative adjustment downwards.

[99] Continence is not regarded by Dr Strauss as a specific driver of LE. Based on the medico-legal reports, he regarded IDT as doubly incontinent. He said that if IDT were not doubly incontinent he would not be in the subset created by Dr Strauss. I take this to mean that in Dr Strauss' opinion CP children with the criteria he used would generally also be doubly incontinent. IDT was in fact doubly incontinent at the ages for which Dr Strauss has done LE assessments though there is a reasonable possibility of his becoming partially or fully continent.

[100] Dr Strauss testified that the Californian data has shown that hearing loss does not affect LE, something which is true not only in the CP population but in the ordinary population.

[101] Dr Strauss said that scoliosis, if severe, is a significant negative factor for LE. In the light of my findings on scoliosis in a later section of this judgment, this need not be discussed further.

[102] Severe epilepsy would be a significant negative factor. Dr Strauss assumed that IDT did not have and would not suffer from epilepsy. According to the defendant's developmental paediatrician, Dr Springer, she would have expected IDT by now to have had seizures if he were going to develop epilepsy. Based on the medical evidence, therefore, I would discount the risk of epilepsy. In relation to neurological claims, one of the items on which the parties reached a settlement was epilepsy, which they resolved on the basis of a 20% risk. On the assumption that I should take this into account in assessing IDT's clinical picture for purposes of LE,

Dr Strauss testified that his general approach was not to make ‘super-fine distinctions’. He mentioned epilepsy as an example – if it were severe he would make an downward adjustment, if it were mild and occasional, he would not. Accordingly, and even allowing for 20% risk, I think epilepsy may be left out of account.

[103] Severe respiratory problems would also affect LE. There is nothing to suggest that this represents a danger for IDT.

[104] Dr Strauss was asked about the distinction between spastic and athetoid CP. He accepted that the incidence of these two forms of CP was about 80/20. He did not distinguish between them in compiling a dataset for IDT. To judge by the CDER form, the Californian data would have enabled the distinction to be made [14] though whether it would have yielded a statistically relevant (ie sufficiently large) group was not explored in evidence. Dr Strauss explained that he did not make the distinction because the Californian data has shown that once one has properly controlled for the primary functional drivers (in IDT’s case, mobility and feeding abilities), the type of CP does not affect LE.

Dr Strauss’ model

[105] For purposes of his 2014 report Dr Strauss’ main assumptions regarding IDT were (i) that he was not tube-fed; (ii) that he fed himself with a spoon, though messily; (iii) that he lifted his head in prone, rolled over, sat and crawled independently; (iv) that he did not stand or walk without support; (v) that he was doubly incontinent; (vi) that he needed help to brush his teeth, shower and dress; (vii) that he did not use words, instead communicating with hand signs, gestures and eye-gaze; (viii) that he understood simple instructions. He noted that IDT’s inability to walk was the major adverse factor for his LE. Given this inability, his mobility through rolling and crawling and his limited ability to feed himself were strongly positive factors.

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[14] See exhibit "L" item 20 of the Developmental Diagnostic Information.

[106] He extracted from the Californian data those boys who had attained the age of 5½ years and who were not tube-fed. This dataset comprised 15 259 boys. The first key variable (V1) in the logistic regression model he applied to this dataset was compliance or non-compliance with both of the following criteria: (i) at best walks with support and (ii) does not self-feed (compliance with both having a value of 1, non-compliance with either resulting in a value of 0). The next variable (V2) was compliance or non-compliance with the following two criteria (i) at best walks with support and (ii) has at least some ability to self-feed (compliance with both having a value of 1, non-compliance with either resulting in a value of 0). The other two variables were of a technical nature (linear age terms related to V1 and V2). IDT's value for V1 was 0 (because although he could at best walk with support he also had some self-feeding ability) and his value for V2 was 1.

[107] The conditions which Dr Strauss attributed to IDT in 2014 and which were explicitly modelled were thus (i) that IDT at best walked with support; (ii) that he had at least some ability to self-feed. The Californian data for the boys in the dataset included more precise information about their varying conditions. Dr Strauss reported that the dataset appeared to capture IDT's pattern of abilities and disabilities well. By way of example, the data on crawling and standing[15] showed that 39% of the children were similar to IDT, 47% had better skills and 16% had worse skills. In relation to receptive language, 39% were able, like IDT, to follow simple instructions, 29% had better skills (being able to follow a series of instructions) and 32% had poorer skills (being at best able to understand simple words).[16] Dr Strauss listed various other positive and negative factors, including low weight which as at March 2013 placed IDT near the red zone, but he considered that there was no balance of positive or negative factors calling for an adjustment to the LE yielded by the model.

[108] Dr Strauss' model took into account a favourable trend (the so-called secular trend) of improved mortality in CP children up to the age of 15. Prof Cooper considered that there was insufficient basis to transpose this trend to South Africa.

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[15] These percentages would be derived from the data on item 4 of the Evaluation Element of the CDER.

[16] These percentages would be derived from item 61 of the Evaluation Element of the CDER.

[109] In updating his LE determination in November 2015, Dr Strauss considered that his 2014 dataset remained appropriate. Based on further medico-legal reports, he noted certain improvements in IDT's condition, the main one being that IDT had become able to stand and had acquired a limited ability to walk. His walking was, however, unsteady and he could not move up and down stairs.

[110] Although I do not recall Dr Strauss specifically so saying, it seems to me that IDT's values for variables V1 and V2 were unchanged as at November 2015 – IDT still met the criteria of at best walking with support and having at least some ability to self-feed. It thus appears that the only change which directly affected the model's output for IDT in November 2015 was that he was now 6,8 years old rather than 5,5. (The same is true for the December 2015 update in the joint minute.) Dr Strauss did not say in his second report that the new information resulted in a balance of positive or negative factors justifying an adjustment to the model's output. This seems to be what he intended to convey in his concluding paragraph, namely that he had revisited his analysis and found that the new material did not indicate any change in his estimate except for 'simple updating'.

[111] In the joint minute Dr Strauss noted that he had looked into the question whether IDT's weight of 15 kg as at November 2015 called for a low-weight adjustment. He recorded that the issue was not completely clear because there were limitations related to the amount of data available but that he would now estimate a LE ratio of 79%.

GMFCS and low weight

[112] Despite the time devoted to IDT's GMFCS classification during the trial, Dr Strauss' model does not call for a decision on whether IDT is a GMFCS II or a GMFCS III. The question is whether at best he walks with support. It is not the defendant's case that IDT does not fit this general description. Dr Strauss testified that the CDER does not call for a GMFCS classification of the patient though the CDER information would usually enable one to estimate the classification. In the joint minute Dr Strauss was willing to treat it as common ground that IDT, having previously been classified as a GMFCS IV, was now a GMFCS III. Dr Strauss

testified that his own view was that IDT was either a poor GMFCS II or a good GMFCS III but that this was not worth pressing because it did not affect the LE assessment.

[113] Prof Cooper testified that in the joint minute discussions he expressed the view that IDT was either a poor GMFCS III or a good GMFCS IV and that they agreed to record him as a GMFCS III. To the best of his recollection Dr Strauss had not raised the possibility that IDT might be a GMFCS II. I did not understand Dr Strauss to say that he had raised it – he seemed unsure.

[114] Be that as it may, Prof Cooper did not assert that classifying IDT as a GMFCS III rather than a GMFCS II would affect the output of Dr Strauss' model. He also did not say that this distinction would result in a balance of negative factors calling for a qualitative adjustment to the LE yielded by the model.

[115] Where the precise classification may be relevant is in regard to low weight. The LEP weight-for-age charts are based on GMFCS classification. During oral evidence Dr Strauss and Dr Springer were asked to plot IDT's age-for-weight positions on GMFCS II and III graphs. The most recent recorded weights for IDT are 15,5 kg on 15 July 2015,[17] 15 kg on 3 November 2015,[18], 15,7 kg on 26 January 2016 and 16,4 kg on an unspecified date in February 2016.[19] If IDT were classified as a GMFCS II, his weight on these various dates would put him near but not in the red zone. If he were classified as a GMFCS III, his most recent weight (February 2016) would put him on the dividing line while his weights as at November 2015 and January 2016 would put him marginally in the red zone.[20]

[116] I do not think it is strictly necessary to decide IDT's GMFCS classification. Dr Strauss testified that if IDT were within the red zone it was so marginal as not to

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[17] This was recorded by Tygerberg Hospital nursing staff [12/155-156] for purposes of Dr Springer's updated assessment [7/14].

[18] This was recorded by a paediatric neurologist, Dr van der Walt. She did not testify but her report was included in the bundles [11/230].

[19] These last two weights were apparently recorded by a dietician, Ms Owens. She also did not testify.

[20] See exhibits"AK1" and "AJ1" for Dr Springer's markings. Dr Strauss' markings for the November 2015 weights are on exhibits "A" and "B".

justify an adverse adjustment. This seems particularly apposite in view of the fact that IDT's GMFCS classification is marginal and a matter on which experts might differ. He testified that the dividing line was not a 'sharp distinction' but indicated 'roughly where the low weight starts being an increased risk factor'. Prof Cooper did not testify that there was any way of quantifying the adjustment though he believed the LEP could not have produced their graphs unless there was a statistical basis for determining where the red zone began. Whatever force there may be in that observation, I am satisfied that Dr Strauss was giving me his honest opinion and that he would not have expressed the view he did if he believed there was a statistical foundation for a downward adjustment. Furthermore in the joint minute he in fact made a downward adjustment of one percentage point, which I take to be his qualitative adjustment for the possibility of negative low-weight.

[117] There is evidence that athetoid CP patients, because of their constant movements, are often lean with a low BMI compared to spastic CP patients. There appear to be no current clinical concerns about IDT's weight.

GMFCS defined

[118] However, in case IDT's GMFCS classification should be thought important on this or any other part of the case I need to make a factual finding. The following summary of the GMFCS is taken from the 2007 revision though reference was also made during evidence to what I take to be the 1997 version.[21] The GMFCS is based on self-initiated movement, with emphasis on sitting, transfers and mobility. In defining the five-level classification, the primary criterion is that the distinctions between the levels must be meaningful in daily life. In classifying a child one must determine which level best represents the child's present abilities and limitations in gross motor function, the emphasis being on usual performance in typical settings

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[21] See exhibit "AH". Pages 1-4 comprise Palisano et al *Gross Motor Function Classification System Expanded and Revised* 2007. Palisano et al are attached to the CanChild Centre for Childhood Disability Research, McMaster University. They appear to be the founders of the GMFCS (see p 292 of the article by Wood et al, exhibit "ZZ", handed up during Ms Jackson's re-examination). Pages 5-6 of exhibit "AH" is a separate document from the same authors. Since the expanded and revised GMFCS (pp 1-4) is said to include a new age band (age 12-18) and since pp 5-6 does not include this new age band, I infer that pp 5-6 sets out the original 1997 GMFCS (it is this version which is quoted in the Would article, exhibit "ZZ"). During oral evidence the pages were referred to without drawing this distinction.

rather than what the child is known to be able to do at his or her best. The classification is concerned with current performance rather than judgement about the quality of movement or prognosis for improvement. The descriptions of functional abilities and limitations for each age band are broad and are not intended to describe all aspects of function. The scale is ordinal, with no intent that the distances between levels be considered equal or that CP children are equally distributed across the five levels.

[119] IDT's age was 6,8 as at November 2015, the relevant date for the LE assessment. His relevant GMFCS age band is thus 6-12. I do not intend to dwell on the GMFCS assessments made during 2012-2014 when his relevant age band was 4-6. The five levels for the age band 6-12, according to the 2007 revision, are as follows (I have inserted at the end of each description the 'general heading' for the level as indicated earlier in the document):

'**Level I:** Children walk at home, school, outdoors, and in the community. Children are able to walk up and down curbs without physical assistance and stairs without the use of a railing. Children perform gross motor skills such as running and jumping but speed, balance, and coordination are limited. Children may participate in physical activities and sports depending on personal choices and environmental factors. ("Walks without Limitations")

Level II: Children walk in most settings. Children may experience difficulty walking long distances and balancing on uneven terrain, inclines, in crowded areas, confined spaces or when carrying objects. Children walk up and down stairs holding onto a railing or with physical assistance if there is no railing. Outdoors and in the community, children may walk with physical assistance, a hand-held mobility device, or use wheeled mobility when travelling long distances. Children have at best only minimal ability to perform gross motor skills such as running and jumping. Limitations in performance of gross motor skills may necessitate adaptations to enable participation in physical activities and sports. ("Walks with Limitations")

Level III: Children walk using a hand-held mobility device in most indoor settings. When seated, children may require a seatbelt for pelvic alignment and balance. Sit-to-stand and floor-to-stand transfers require physical assistance of a person or support surface. When travelling long distances, children use some form of wheeled mobility. Children may walk up and down stairs holding onto a railing with supervision or physical assistance. Limitations in walking may necessitate adaptations to enable participation in physical activities and sports including self-propelling a manual wheelchair or powered mobility. (“Walks Using a Hand-Held Mobility Device”)

Level IV: Children may use methods of mobility that require physical assistance or powered mobility in most settings. Children require adaptive seating for trunk and pelvic control and physical assistance for most transfers. At home, children use floor mobility (roll, creep, or crawl), walk short distances with physical assistance, or use powered mobility. When positioned, children may use a body support walker at home or school. At school, outdoors, and in the community, children are transported in a manual wheelchair or use powered mobility. Limitations in mobility necessitate adaptations to enable participation in physical activities and sports, including physical assistance and/or powered mobility. (“Self-Mobility with Limitations; May Use Powered Mobility”)

Level V: Children are transported in a manual wheelchair in all settings. Children are limited in their ability to maintain antigravity head and trunk postures and control arm and leg movements. Assistive technology is used to improve head alignment, seating, standing, and/or mobility but limitations are not fully compensated by equipment. Transfers require complete physical assistance of an adult. At home, children may move short distances on the floor or may be carried by an adult. Children may achieve self-mobility using powered mobility with extensive adaptations for seating and control access. Limitations in mobility necessitate adaptations to enable participation in physical activities and sports including physical assistance and using powered mobility.’ (“Transported in a Manual Wheelchair”)

[120] For purposes of these descriptions the following terms are defined as indicated: (i) ‘Hand-held mobility device – Canes, crutches, and anterior and posterior walkers that do not support the trunk during walking’; (ii) ‘Physical assistance – Another person manually assists the child/youth to move’; (iii) ‘Walks – Unless otherwise specified indicates no physical assistance from another person or any use of a hand-held mobility device. An orthosis (ie brace or splint) may be worn’.

[121] The 2007 revision provides the following guidance in distinguishing between the second and third levels:

‘ Children and youth in Level II are capable of walking without a hand-held mobility device after age 4 (although they may choose to use one at times). Children and youth at Level III need a hand-held mobility device to walk indoors and use wheeled mobility outdoors and in the community.’

The experts' views on IDT's GMFCS classification

[122] None of the plaintiff's' experts dealt with IDT's GMFCS level in their reports but it was traversed in oral evidence with Ms Jackson (a physiotherapist), Ms Crosbie (an occupational therapist) and Dr Strauss. On the defendant's side, Dr Springer (a developmental paediatrician), Ms Scheffler (a physiotherapist) and Prof Cooper dealt with GMFCS levels in their reports and in oral evidence.

[123] Ms Jackson testified that she does not use the GMFCS in her practice because it does not add anything to how she manages the patient. However, and because it was raised by her counterpart Ms Scheffler, they discussed it for purposes of their joint minute dated 4 December 2015. They agreed that IDT had elements of Levels II and III. On balance Ms Jackson regarded him as being at Level II whereas Scheffler put him at Level III.

[124] Ms Crosbie, like Ms Jackson, did not do a GMFCS assessment. She also did not offer a GMFCS classification in oral evidence. The views of Dr Springer and Ms Scheffler on IDT's improved GMFCS level from 2013 to 2015 were taken up with her in cross-examination solely for the purpose of challenging her assessment that IDT's performance in certain functions had worsened.

[125] Dr Strauss is not a medical specialist. He did not examine IDT though by the time he gave evidence he had viewed some of the video material. Based on that material and what he had read in the most recent medico-legal reports he thought IDT might be a GMFCS II but, as previously mentioned, the distinction between Levels II and III was not of great importance to him and he was willing to accept, for purposes of his joint minute with Prof Cooper, that IDT was at Level III. The defendant's counsel submitted that Dr Strauss adapted his evidence regarding IDT's classification when it became apparent that as a Level III his low weight would put him in the red zone. That was not my impression.

[126] Dr Springer examined IDT in September 2013. He was then in the 4-6 age band. She classified him at GMFCS IV. When she saw him in September 2014, when he was still in the 4-6 age band, she thought he had improved to GMFCS III.

She examined him for a third time in July 2015. She assessed him as remaining at GMFCS III.

[127] She testified that IDT's GMFCS classification in July 2015 gave her some difficulty. She was not sure whether to place him at Level III or Level II but on balance she opted for the former. She explained that the GMFCS does not permit one to assign a blended classification (eg 'low II/high III'). It would be unusual, in her opinion, for a patient to improve by two levels, ie from Level IV to Level II. She also said that she wanted to be 'conservative' so that IDT would not be deprived of appropriate treatment. This last observation is not a sound basis for a GMFCS classification though Dr Springer impressed me as a sincere, candid and caring expert. I may add that there would have been no subconscious pro-defendant incentive for Dr Springer, in July 2015, to give IDT an unjustifiably low GMFCS score. The possible impact of low weight on LE only emerged as an issue in December 2015. Dr Springer probably thought that classifying IDT at Level III instead of Level II would increase rather than decrease the claim.

[128] Unlike Dr Springer but like Ms Jackson and Ms Crosbie, Ms Scheffler is something of a veteran witness. She examined IDT in April 2013, September 2014 and November 2015. On the first occasion she assessed him as a GMFCS IV. On the second and third occasions she assessed him as a GMFCS III. Mr Irish cross-examined her on several topics with a view to establishing that she was biased in the defendant's favour. On some aspects she and other witnesses may have shown some subconscious pro-client bias I do not think that this taints her GMFCS assessment. Dr Springer's evidence shows that Ms Scheffler's assessment is reasonably plausible. As with Dr Springer, there is nothing to indicate that Ms Scheffler thought, at the time she wrote her reports, that classifying IDT at Level III instead of Level II would decrease rather than increase the claim. I should note, however, that Ms Scheffler regarded IDT as a 'strong' Level III (in the 70th percentile – she scored him at 72,4 as against a mean of 65,1).

[129] Prof Cooper did not examine IDT. His medical expertise may give him a superior understanding of the medico-legal reports so that his view that IDT was at Level III is perhaps entitled to some weight. On the other hand, and if it were

relevant to establish whether IDT were closer to Level II or Level IV, I would attach greater weight to Dr Springer's views, given that she examined IDT on three occasions. In any event, the weight-for-age charts do not distinguish between degrees of functionality within specific GMFCS Levels.

Factual evidence relevant to IDT's GMFCS classification

[130] I must now summarise the main features of the factual evidence bearing on IDT's GMFCS classification. His wheelchair is not taken to school. He moves around the classroom on his own although he falls quite a lot. When he walks longer distances at the school, eg when going to individual therapy, Ms Lundy holds his hand. They might use the wheelchair when visiting the mall or hospital.

[131] When Ms Scheffler observed IDT at the school in late November 2015 he walked from the classroom to the playground and spent the whole break period pushing himself round on a scooter. He walked back to the classroom on his own, balancing himself against the corridor wall. She saw him stop to pick up a toy. He lost his balance, sat down, and stood up again. He also fell on another occasion.

[132] In the home IDT generally walks around on his own, holding onto walls and furniture for stability. His wheelchair is used as a chair rather than for mobility.

[133] There appears to be general consensus that IDT can walk unsupported for about 10 metres.

[134] IDT enjoys playing. Apart from hearing general descriptions from his mother and others, I saw three video clips of him at play. In one he is riding a tricycle. He can start pedalling from a stationary position. In another clip he is seen sitting and then lying on his side while pushing a toy car. He stands up, walks up a patio step to fetch a towel, takes it back to the grass and cleans his toy. He is able to pick up the car from a standing position. He walks back to the patio and pushes the toy up and down a pillar. In the third clip, shown during Ms Scheffler's testimony, he is shown stepping down the single step of the patio onto the grass by holding onto a pillar.

[135] Although there is a difference of opinion regarding the best walking device for IDT, the experts generally agree that he will benefit from some such device (see fuller discussion below). The purpose of the walking device would not be to bear weight but to enhance his stability and balance. His limbs and core muscles are sufficiently developed for walking but his athetoid movements throw him out of kilter.

[136] IDT cannot walk up and down stairs, not even with the assistance of a handrail. He can crawl upstairs on his knees and manoeuvre himself downstairs on his rear. (He can, though, walk up and down a single step by holding onto a pillar, as shown in the video clips.)

[137] The guidance in the GMFCS for distinguishing between Levels II and III states that children and youth in Level II are capable of walking without a hand-held mobility device after age 4. I do not understand this to mean that if a child reaches his 4th birthday without yet being able to walk without a hand-held mobility device he can never thereafter be classified at Level II even if he later becomes able to walk without such a device. The question is whether, by the latter part of 2015, IDT was able to walk without a hand-held mobility device.

[138] Dr Springer's first report (September 2013) said that IDT was not walking at all at that stage. This may not be correct because in Ms Scheffler's first report she said that IDT had just started walking with a rollator (she assessed him in April 2013). Be that as it may, IDT was no longer using the rollator when Dr Springer saw him in September 2014. His improvement from September 2013 to September 2014, coupled with his desire for independence, caused him to abandon the rollator. The current position is that he moves around the home and the school, which are his most frequent settings, without a hand-held mobility device. Ms Scheffler said that his basic balancing reflexes when he stumbles are quite good. She pointed this out in a video clip.

[139] Ms Scheffler considered that the walls and furniture which he uses for stability serve the same function as a hand-held mobility device. However, the GMFCS defines a 'hand-held mobility device'. By no stretch of the imagination can furniture and walls qualify as such.

[140] Level II allows for the possibility that the child may experience difficulty in walking long distances and in balancing on uneven terrain. This level also allows for the possibility that outdoors and in the community the child may walk with physical assistance or with a hand-held mobility device and that wheeled mobility may be used when travelling long distances. This would cover the case where Ms Lundy holds his hand as they walk to therapy or where the wheelchair is used for moving around a mall. It is in these situations that IDT is most likely to make use of a walking device once it has been obtained for him. I doubt that he will start using a walking device in situations where he currently walks on his own.

[141] The ability to run and jump, which IDT lacks, is not a characteristic of Level II.

[142] The ability to walk up and down stairs by holding onto a railing, or with physical assistance, is ostensibly a characteristic both of Level II and Level III. IDT does not currently have the ability to navigate stairs even with the use of a railing. However, and since there is consensus that he is at one or other of these levels, the absence of this ability is no more a reason to place him at Level III than at Level II. A complete inability to navigate stairs is not stated to be a feature of Level IV. The main purpose of the reference to assisted stair navigation in Levels II and III seems to be to highlight unassisted stair navigation as the domain of Level I rather than to impose assisted stair navigation as a requirement of Levels II and III.

[143] Apart from the fact that IDT does not use a hand-held mobility device in most indoor settings, the evidence does not establish that for ordinary sitting he requires a seat belt for pelvic alignment and balance.

Conclusion on GMFCS and low weight

[144] I have thus come to the conclusion that IDT’s correct GMFCS classification as at November/December 2015 was GMFCS II. This is the level which best represents his abilities and limitations at that time.

[145] It follows that Dr Strauss’ downward adjustment from 80% to 79% in the joint minute was if anything a conservative adjustment which favoured the defendant.

IDT's feeding ability

[146] It is agreed that IDT is not tube-fed. Dr Strauss treated IDT as a messy self-feeder. Prof Cooper considered that for practical purposes IDT is fed by others. In the joint minute they recorded their difference of opinion, correctly noting that this was a factual question which was not for them to resolve. Dr Strauss noted that if the court were to find that IDT is not a self-feeder the LE ratio would drop by about eight percentage points.

[147] Item 14 of the CDER calls for a child who is not tube-fed to be assigned an 'Eating' score ranging from 1 to 6, the descriptors being: 1 = Does not feed self, must be fed completely; 2 = Attempts to finger feed but needs assistance; 3 = Finger feeds self without assistance; 4 = Feeds self using spoon, with spillage; 5 = Feeds self using fork and spoon, with spillage; 6 = Uses eating utensils with no spillage.

[148] Dr Strauss testified that the important distinction for non-tube-fed children was between a score of 1 and a score of 2-6. The absence of any self-feeding ability significantly prejudiced LE whereas the distinctions between scores 2 to 6 did not.[22] Dr Strauss could not give a precise answer to the question how much self-feeding ability is needed to take a child above category 1. In general, the CDER is aimed at obtaining functional skill levels 'that are performed on a consistent basis in typical settings' rather than 'the best level that has or may be achieved in specialised settings'.[23] He regarded 50/50 self-feeding as sufficient. Self-feeding with a spoon, even though messy, would definitely qualify as self-feeding. However if the child was capable of feeding himself but in practice was most often fed by others because self-feeding was too laborious, time-consuming and messy, the child would not be regarded as a self-feeder.

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[22] He referred in this regard to a paper of which he was the lead author, Strauss et al *Life Expectancy of Children with Cerebral Palsy* (1998) Pediatr Nerol [exhibit "G"]. See Table 2 read with the text at p 1107. The proportional hazard ratios for tube-feeding and no self-feeding ability were 3,85 and 2,01 measured against a value of 1 for some self-feeding ability. This indicated that being fed by others 'doubled the risk'.

[23] He referred in this regard to a 2014 paper of which he was a co-author, Brooks et al *Recent Trends in Cerebral Palsy Survival, Part II, Individual Survival Prognosis* (2014) Developmental Medicine & Child Neurology [exhibit "K"].

[149] Based on what he had read and the video clips, Dr Strauss regarded IDT as a messy self-feeder but said that this was a factual question for the court. Prof Cooper based his contrary view on Ms Crosbie’s second report.

[150] The witnesses best placed to give evidence about the way IDT consistently eats are his mother and the facilitator, both of whom made a favourable impression. The video material and the observations of experts constitute secondary material against which one can assess the plausibility of the primary evidence. This approach is consistent with the nature of the Californian data which derives from scores given in the CDER by primary caregivers rather than clinicians. It is thus legitimate to ask how IB or Ms Lundy would honestly have scored IDT in item 14 of the CDER. It is the aggregation of honest views of this kind which drives the Californian data.

[151] IB testified that at breakfast time on school days IDT usually eats with assistance because of time constraints. He takes a packed lunch to school and usually has fruit and yoghurt as a teatime snack. He has a fork in his lunchbox. During supper time he mostly feeds himself. His eating needs to be supervised in case his mouth gets too full or his attention is distracted. He can cut food with a knife but does not often do so. A lot of his food is finger-food which he can eat without cutlery. Hand-eating is part of Muslim culture. As a family they often use their hands to eat.

[152] IB said that IDT always drinks when eating. He generally handles the sippy cup himself.

[153] Ms Lundy testified that at school IDT opens his own lunchbox. She sets out the food for him. Generally he has finger-foods such as sausages, chicken strips and fruit. He uses a fork. He can use a knife. Normally the food does not require cutting but he likes to experiment with it.

[154] Several video clips of IDT eating food were shown in court. The first three clips discussed below, which were shown during the course of IB’s testimony, were

handed in as exhibits. Two further video clips were shown during the course of Ms Scheffler's evidence but the video material was not handed in.

[155] In the 'Eating yoghurt' clip, he is shown seated at a table eating rather clumsily with a spoon from a yoghurt tub. He can put the spoon into the tub and take the spoon to his mouth but with some spillage. He tries to lick the spilled yoghurt from his arm and from the table.

[156] In the 'Eating sandwich' clip he is again seated at a table with some cut sandwiches on a plate. He is distracted by a plastic figurine. He is encouraged to eat and takes bites rather clumsily from the sandwiches. He also picks up his sippy-cup with both hands and drinks. In the 'Eating chicken nuggets' clip he is eating chicken nuggets from a yellow bowl, using his fingers. He feeds himself a piece. He then takes a little fork which is removed from him. He is fed a piece by hand. He then takes a cup and drinks. He is fed a second piece. With some cajoling he takes another piece himself. He spends quite a lot of time in swaying movements over the table. He is fed several further pieces by his mother. He starts playing with the place mat. His mother feeds him another piece. He then takes and eats several pieces himself. He gets irritable. There is a long break and his mother asks him please to eat his food. He takes several further pieces and licks his fingers. His mother asks whether she must feed him, gauges his response and says, 'No, you don't like it'. During cross-examination IB said that during this episode IDT was distracted by the television. It was put to her that the video suggested that she fed him about 50% to 60% of the chicken nuggets which she said was fair.

[157] In the 'Eating pasta' video, Ms Lundy is supervising IDT's lunch at home. She twirls some pasta onto a plastic fork and he takes it. He becomes distracted and then takes the fork himself and succeeds in scooping pasta into his mouth. When he tries again, though, he really battles and Ms Lundy takes over the fork.

[158] In the first video clip played during the Scheffler's evidence IDT is seated at a table eating yoghurt. (Ms Scheffler observed that the table was too high so that his elbows had to come up above 90°. This resulted in instability.) He has to use a very basic grip to hold onto a thin slippery spoon. His left hand can hold the yoghurt tub

upright. In the next clip IDT is again eating yoghurt but this time he is on the floor with his legs splayed out, watching television. (Ms Scheffler said that this gave him more stability.) He is able to maintain an upright posture. He holds the yoghurt tub in his left hand but really battles with the spoon in his right hand, trying various grips.

[159] Ms De Freitas, the SMT speech therapist, testified that IDT often ate during their speech therapy sessions. There was no food residue in his mouth after swallowing.

[160] In her September 2015 assessment Ms Crosbie reported the following information as conveyed to her by IB.[24] In regard to special food preparation, his food needed to be cut up. Chicken needed to be deboned. Meat had to be tender and off the bone. In response to the question, 'Is the child fed by someone?', the response was, 'Most of the time, yes'. In response to the further question whether IDT was fed only when the family was in a hurry or when they wanted to make sure that the child ate enough, the recorded reply (not entirely responsive) was, 'Want to make sure he eats enough'. The question, 'If child eats on own, how do they eat?', attracted the answer, 'Depends on what he eats'. As to whether he used a spoon, fork or knife, the response was that he used a spoon and fork but only for certain types of food. There was a lot of messing, though it depended on what he was eating. When he was feeding himself, a meal might take 30 – 40 minutes, as opposed to 15 – 25 minutes when fed by someone else. He could drink on his own, using a sippy cup. When eating finger foods or yoghurt he sat at a small plastic table and chair in front of the television.

[161] In the same report Ms Crosbie recorded her own observations on 11 and 12 September 2015. On the first occasion his lunch was a hamburger cut into quarters with chips and a juice container with a straw. IDT ate the chips first. He was able, while watching television, to pick up the chips, dip them in tomato sauce and put them in his mouth without significant squashing. This demonstrated adequate proprioception, though the physical effort of controlling his right arm led to certain postures which Ms Crosbie described as 'fixing'. He was able to pick up the juice

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[24] 6/527-528.

container and drink through the straw. He ate hardly any of the hamburger. The sequence lasted 15 minutes. In response to a question from his mother he indicated that he had had enough.

[162] On the following day Ms Crosbie observed him eating yoghurt. He was unable to remove the foil covering. Once the tub had been opened he fed himself with a metal dessert spoon but he constantly had to re-grip it and at times it fell to the floor. He was able to retrieve the spoon. He used various grips to hold the spoon, dip it in the tub and bring the spoon into his mouth with a manageable amount of yoghurt. There was no significant messing or spilling. He also managed to hold the tub in his left hand when it was almost empty, using his right index finger to scoop out the rest of the yoghurt. The process took about 12 minutes, which Ms Crosbie regarded as very slow for a child of his age.

[163] Her oral evidence did not add much to her report on this aspect. She agreed in cross-examination that whereas in 2012 IDT had been unable to feed himself even with a spoon, in 2015 he could manage a spoon with yoghurt and even cut food with a knife, showing an improvement in his fine motor skills.

[164] In the joint report by Ms Hattingh and Ms van der Merwe of September 2015 they said that according to the mother IDT was able to feed himself finger-foods but with much spillage due to involuntary movements. The mother still assisted him with other food.[25] He loved chicken nuggets and soft foods. He had four different drinking bottles/cups, all of which he could drink from independently with occasional spillage. Their observation was that his finger-feeding ability had improved with less spillage evident but that he still required help with other foods.[26] They made recommendations for adapted feeding utensils.[27] In the context of their previous recommendation of a blender, they said that IDT currently required all his food (except finger-foods and sandwiches) to be mashed/cut up into very small pieces. His parents assisted with this and he was 'able to eat the food as presented'. He was 'still being fed at least part of most meals, as self-feeding is very time-

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[25] 6/358.
[26] 6/376-377.
[27] 6/406.

consuming and accompanied by much spillage'.[28] (Ms van der Merwe did not expand upon these remarks in oral evidence.)

[165] Dr Springer also obtained information from IB. In her September 2014 assessment she recorded that IDT preferred to eat with his fingers at school. Dr Springer noted that this might well be attributable to cultural background. Although he could use a spoon there was still significant spillage. He was able to chew solid food and there was less drooling than before. There were no swallowing difficulties.

[166] In her September 2015 assessment she found that IDT's fine motor control had improved. He was able to feed himself with a spoon or fork although this could be messy. She classified him as a MACS III, indicating that he could 'handle objects with difficulty' and 'required help in preparing and/or modifying activities'.[29] (The MACS score is not specifically directed at feeding.)

[167] In her third report dated 20 November 2015 Ms Scheffler noted that IDT demonstrated improved manual skills in both hands. He was able to use press studs, undo the velcro on his shoes and undress himself. He was able to feed himself finger-foods and could use a spoon and fork though this was still quite messy. She observed him eating a sandwich and drinking from a juice bottle.

[168] The evidence I have reviewed, and the more general evidence concerning IDT's personality, justifies the following findings: (i) IDT consistently feeds himself fluids. Provided the fluid is in an appropriate container, he does not need, and does not in practice receive, help to drink. (ii) IDT consistently feeds himself solid and semi-solid food with his fingers and spoon. By 'consistently' I mean that self-feeding in this way probably occurs every day to an extent which is not trivial even though some of his food during that meal or at other meal-times might be fed to him by others. (iii) Because he can generally finger-feed without assistance, his mother probably gives preference to finger-foods for his school lunches. (iv) For the same reason and also because finger-feeding is culturally normal in the family, finger-foods would not be uncommon in the home. (v) His mother and facilitator probably

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[28] 6/407.

[29] See exhibit "P".

encourage self-feeding because they know it is in IDT’s best interests. (vi) IDT more often than not wants to feed himself and not be treated like a baby. (vii) There are occasions, probably frequent, where time constraints or impatience on the part of caregivers or frustration on IDT’s side lead to food being fed to him. (vii) Because self-feeding is a consistent feature of IDT’s life and because it is more cumbersome than assisted feeding, self-feeding probably predominates over assisted feeding on a time basis. (viii) It is not possible to say whether more than half of his food and liquid intake is self-fed.

[169] It is clear that IDT’s consistent feeding abilities place him higher than a level 1 in item 14 of the CDER. To be at level 1 one would have to say of IDT that he ‘Does not feed self, must be fed completely’. That is simply not the case. Conversely IDT would certainly not score a 6. Although in oral evidence Dr Strauss was pressed to say how much self-feeding there had to be to qualify the child as a self-feeder, it is not self-evident from item 14 that such a judgement is called for or that it was even a question to which Dr Strauss had really given careful attention. Item 14 essentially distinguishes between being fed by others, self-feeding with fingers and self-feeding with utensils. It is very unlikely that a child who can finger-feed (with or without assistance) but who cannot use utensils at all would take all his food by finger-feeding rather than assisted feeding. A child who can and does consistently finger-feed may nevertheless take more of his nutrition by assisted feeding. The caregiver of such a child would, I think, give a score representing the highest level which the child consistently attains. If the child consistently self-feeds without assistance but cannot use any utensils, the carer would give a score of 3 even though the child’s inability to use utensils means that more of his food is fed to him by others than self-fed.

[170] Overall, I think IDT would probably score a 3 or 4 on item 14. At any rate he is not as low as level 1. I am thus satisfied that Dr Strauss’ model on this aspect is correct.

The secular trend

[171] The evidence does not establish what factors have given rise to improved mortality of CP children up to the age of 15. It is thus not possible to say whether the same factors could be expected to be operative in South Africa.

[172] It does not follow that the secular trend (which affects the LE ratio by about 1%) should be disregarded. There are a host of unidentified factors which have caused the CP mortality rate in California to be what it is. Nobody has suggested that it is possible to identify each factor with a view to assessing its applicability in South Africa. Instead the reasonable approach, accepted by both sides, is to determine the Californian CP LE ratio and apply it to an appropriate ordinary South African LE, the assumption being that all factors which serve to make ordinary South African LE lower than ordinary American LE will operate in the same way to make CP South African LE lower than American CP LE.

[173] Accordingly, and unless there is some special case for treating the secular trend differently, the trend should not be disregarded. It is simply part of the exercise of determining the Californian CP LE. On the assumption that the ultimate onus in that respect remains with the plaintiffs, the defendant would at least need to discharge an evidential burden by putting up some evidence to show that the trend is unlikely to apply in South Africa. That has not been done.

[174] The defendant's counsel referred in argument to a Swedish paper on the secular trend, which was handed up during Prof Cooper's evidence.[30] I do not recall this having been traversed with Dr Strauss. The authors noted the absence of a secular trend of improved mortality in the total CP group and in those with severe motor impairment (this was over 50 years) but observed that this might be because the composition of the group had changed over time. They did notice an increase in survival for those who could walk with or without aids. I do not understand this paper to have dealt with the specific age group identified in the Californian data.

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[30] Exhibit "AT" Himmelmann and Sundh *Survival with Cerebral Palsy over Five Decades in Western Sweden* Dev Medicine & Child Neur 2015.

Conclusion on LE ratio

[175] The LE ratio to be applied to the ordinary South African LE is thus 79%.

The appropriate ordinary South African life table

[176] Pursuant to a national census in 1985 the Central Statistical Services of the then South African government produced life tables for so-called Whites (W), Coloureds (C) and Asiatics (A). The W LE was better than the C LE.

[177] Koch's six life tables (which for convenience I shall refer to as K1 to K6) are based on the 1985 tables. He has attempted to 'de-racialise' the 1985 tables by recasting them according to assumed income brackets. To achieve this he has blended the data in ways he regards as reasonable. K1 is based on, but better than, the W Table. K2 is the same as the W Table. K3 and K4 are differing blends of the W and C Tables. K5 is the same as the C Table. K6 is worse than the C Table.[31]

[178] The 1985 Tables and Koch's reworked Tables are true life tables, ie they give a LE for every age from 1 to 99, not merely a LE at birth.

[179] There was a census in 2001. The resultant life tables were materially affected by the HIV/AIDS pandemic and did not distinguish between persons who were and were not at risk of HIV/AIDS. Both sides accept that the 2001 life tables should not be used.

[180] A further census was conducted in 2010. Based on that census, Statistics South Africa ('SSA') in 2015 produced male and female life expectancies at birth for persons not at risk of HIV/AIDS. (I have no evidence as to how SSA went about this exercise.) In the case of boys the birth LE is 65,2 years.

[181] Because the SSA figure of 65,2 years is a birth LE, some adjustment is needed to derive the LE for a 7-year-old boy. The difficulty is to know how many

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[31] K1 - K6 in his 2014 Quantum Yearbook were handed in as exhibit "H". All that would have changed in subsequent years are the income brackets. For reasons that will become apparent, these income brackets are not relevant.

deaths to assume from birth to age 7. The greater the number of assumed deaths prior to age 7, the greater will be the boy's EDA.

[182] By the time of the joint minute Dr Strauss had given consideration to using an adjusted SSA figure rather than K2. SSA has data on male deaths at each age up to age 5. There are 34 deaths per 1000 children in the first year of life and 10 deaths per 1000 children between the first and fifth birthdays. This gives a total of 44 deaths per 1000 children in the first five years. Using basic statistical methods, Dr Strauss computed that if this rate of death were applied to the SSA birth LE it would translate into a LE of 63,2 years at age 5. It appears that there is no data permitting Dr Strauss to extend this exercise to age 7.

[183] Dr Strauss observed that the adjusted SSA LE at age five (63,2 years) was closer to K2 for the same age (64,3 years) than any of Koch's other tables (66,5 years in K1, 61,6 years in K3, 59,1 years in K4).

[184] Dr Strauss acknowledged that his derived SSA LE at age five treats all deaths in the first five years as unrelated to HIV/AIDS. It is reasonable to suppose that some of those deaths are HIV/AIDS-related. If the HIV/AIDS deaths were excluded, the assumed deaths between birth and age five would be lower, from which it would follow that the EDA of a boy aged five would also be lower. It is common ground that there is no data to enable one to say how many of the 44 deaths per 1000 boys in the first five years of life are HIV/AIDS-related. According to Prof Cooper, if 30 of the 44 deaths were assumed to be unrelated to HIV/AIDS (ie if 14 deaths, being 32% of the 44, were treated as HIV/AIDS-related), the derived LE at age five would be 62,2 – closer to K3 than K2. Dr Strauss agreed with the calculation.

[185] In oral evidence Prof Cooper gave an overview of the development of the HIV/AIDS pandemic and the rollout of AVR treatment. By the turn of the millennium the maternity infection rate was about 30%. Prior to AVR treatment, mother-to-child infection rates rose from 50% to 75%, with most infected children dying before the age of 5. This caused infant mortality rates to rise to 80 per 1000 children in about 2004/2005. Although the subsequent rollout of AVR treatment has not yet

significantly reduced maternal infection, it has greatly reduced infant mortality. However, apart from being a direct cause of death among children (which it still is, though to a lesser extent), HIV/AIDS negatively affects a child's LE indirectly because of its socio-economic impacts. Although I did not understand him to say that there was data which permitted him to give a precise figure, he thought it plausible to say that one-third of the 44 per 1000 mortalities reported by SSA would be HIV/AIDS-related.

[186] I asked him whether there was data about the incidence of HIV/AIDS in Muslim men in South Africa. He said that the incidence in the Western Cape was considerably lower than in other provinces, which he assumed was related to differing demographics. This was not merely because AVR treatment had been rolled out earlier in the Western Cape than elsewhere. Even in the early 2000s the incidence was significantly lower here than in the rest of the country.

[187] Prof Cooper did not say that an adjusted SSA figure should be used. He dealt with it because Dr Strauss was supporting the use of K2 on the basis that its age-five LE was closest to the SSA age-five LE as derived by Dr Strauss, his only point being that if one wished to use the SSA birth LE figure for boys not at risk of HIV/AIDS it was not logically consistent to include HIV/AIDS deaths in deriving an age-five LE. Dr Strauss acknowledged the force of this observation.

[188] Prof Cooper's own view was that one should use K4, based on IDT's family's socio-economic circumstances. Prof Cooper did not fare well under cross-examination in supporting this contention. He apparently based his view of the family's earnings on Ms Crosbie's reports. He seems to have attributed no income to IB on the basis that she had to stay at home to look after IDT. He did not really seem to know the circumstances which, on Koch's overall model, would place a person in any particular Koch table.

[189] If one were to jettison the SSA figure as one's starting point, the Supreme Court of Appeal's decision in *Singh* would justify Dr Strauss' reliance on K2 (though not for the reasons he gave). In para 65 Conradie JA for the majority agreed with the following passage from Snyders JA's judgment (para 199):

'As with most things in this matter, the appropriate life tables to be applied to the assessment of Nico's life expectancy were also in issue. The high court applied the SA white male tables. The appellant contends for the application of the Koch life tables[32] which adds between 2 to 4 years to the various scenarios calculated by Strauss. Koch's attempt to remove race from the SA life tables is obviously attractive, but the evidence of the assumptions made to compile his life tables does not, in this case, succeed to illustrate their reliability. Although the 1984/1986 SA life tables are out of date, they are still the best available. In the circumstances it seems eminently reasonable to have used the white male tables to exclude any racial component from the calculation. Consequently the dispute about whether the appellant agreed to the application of the SA life tables only to the actuarial calculation or also to the assessment of life expectancy is irrelevant.'

[190] This passage embodies a decision of legal policy by which I am bound in the absence of new data. The conclusion, based on this policy, would be that although IDT is a coloured child I should, to exclude any racial component, use the 1985 life table for white males (ie K2, not K3 – K6). Apart from the reason given by Snyders JA, this may be justified on the basis that at least the legal impediments to equality which existed in 1985 were removed with our transition to a democratic country, more than 15 years before IDT was born.

[191] However the 2010 census and the SSA birth LE figures constitute new data which does not suffer from the racial bias implicit in the use of K3 – K6. Since HIV/AIDS is recognised as an abnormal distorting factor in South African LE and since SSA has published a birth LE which eliminates this distortion for persons not at risk of HIV/AIDS, it is appropriate to deploy this data, if reasonably possible, when assessing the LE of a person not at material risk of HIV/AIDS. I am satisfied that pre- and post-morbidly IDT is not and would not have been at material risk, directly or indirectly, of HIV/AIDS.

[192] The SSA birth LE is 65,2 as against K2's birth LE of 68,3. Although there is the need to make assumptions in order to derive an SSA age-five LE, there is consensus that if one attributes no intervening deaths to HIV/AIDS the age-five LE would be 63,2 and that if one excludes one-third of the intervening deaths on the

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[32] In context, this is a reference to K1. The trial judge applied K2.

basis of being attributable to HIV/AIDS the age-five LE would be 62,2. This compares to K2's 64,3. This indicates that current non-racial ordinary LE is lower than the K2 data, even for males not at risk of HIV/AIDS.

[193] Although Dr Cooper and Prof Strauss did not offer an SSA age-seven LE, K2 and K3 reflect that a boy who lives two additional years would have an age-seven LE which is 1,9 years shorter than at age five (from which it would follow that the EDA at age seven would be 0,1 year higher than at age five). The very slightly reduced LE at age seven would in both cases be 97% of the age-five LE. Since the 1985 data pre-dates HIV/AIDS, it is not unreasonable to apply the same ratio to the SSA age-five LE, which would yield an SSA age-seven LE of 61,3 or 60,3 depending on the assumptions about intervening deaths. This can be compared with K2's age-seven LE of 62,4.

Conclusion on IDT's LE

[194] Although Dr Strauss performed his most recent updated calculation as at 23 December 2015, he treated IDT as a seven-year-old boy. For the sake of convenience, IDT's LE should be reckoned from his seventh birthday, ie 12 January 2016. The 79% ratio as applied to K2's age-seven LE yields for IDT a LE on that date of 49,3 and an EDA of 56,3.

[195] Based on the SSA data, this is likely to overstate IDT's LE. If one accepts Prof Cooper's estimate of treating one-third of intervening deaths to age five as attributable to HIV/AIDS (this appears reasonable) and my adjustment to age seven, the 79% ratio as applied to the SSA figure would yield a LE for IDT of 47,6.

[196] Taking account of current limitations in the SSA data, I propose to round up the figure of 47,6 to 48 which I thus determine to be IDT's LE as at 12 January 2016. His EDA is thus his 55th birthday. A different way of reaching this result is to use the K2-based LE of 49,3 and make a downward qualitative adjustment based on the indications that K2 overstates current ordinary LE. On either approach I regard 48 years as the fair and reasonable figure. (Yet another approach would be to use 49,3

years for computation purposes and make some allowance within general contingencies but I think that is less satisfactory and too blunt.)

[197] I do not consider that IDT's particular symptoms and condition call for a positive or negative qualitative adjustment to the figure of 48 years. IDT's mobility skills have improved and he does not appear to be worse than his peer group. He is generally in good health. His feeding skills seem to be middling. He has no difficulties with swallowing and respiration.

Orthopaedics, scoliosis, bracing and lycra suits [items 43, 55(a) & 55(b) of "POC1"]

Introduction

[198] The orthopaedic claims in respect of future fractures and post-operative physiotherapy have been settled. What remains in dispute is whether IDT requires treatment for scoliosis. The plaintiffs' orthopaedic surgeon, Dr Versfeld, considers that IDT has scoliosis. He recommends a DMO or SPIO/TLSO brace until IDT reaches the age of 10 and a Cheneau brace from 10 to 19½, in each case with annual replacement cycles. He also recommends orthopaedic consultations and x-rays every four months until IDT reaches 19½.

[199] The defendant's expert, Prof Dunn, considers that IDT does not have scoliosis and has no significant risk of developing it. He also disagrees with the proposed treatment. He has never encountered the use of DMO or SPIO/TSLO braces in the treatment of scoliosis.

[200] The plaintiffs' orthotist, Mr Hakopian, the plaintiffs' occupational therapist, Ms Crosbie, and the plaintiffs' physiotherapist, Ms Jackson, consider that IDT shows signs of scoliosis but have deferred to orthopaedic surgeons for the diagnosis. Mr Hakopian has recommended that IDT have (i) a SPIO vest with TLSO brace for life, to be used primarily when he is sitting, and (ii) a SPIO compression suit for life, to be used primarily when he is walking. In each case the replacement cycle would be annual. He considers that the vest/brace and compression suit would assist not only

in combating IDT's scoliosis but also in enhancing his dynamic stability by providing trunk support and stability to his hips and back.

[201] Ms Crosbie supported Dr Versfeld's recommendation for a DMO. However, and because she understood DMOs to be no longer available in South Africa, she proposed a SPIO suit with TLSO brace until IDT reached the age of 20. The replacement cycle would be annual and he would need two SPIOs at any given time.

[202] Ms Jackson made no recommendations regarding compression garments. She has not hitherto prescribed DMO or SPIO suits for her patients.

[203] The defendant's physiotherapist, Ms Scheffler, likewise deferred to orthopaedic surgeons regarding the diagnosis of scoliosis but said that she herself did not detect it. She considered that there was no satisfactory scientific foundation for using DMO or SPIO suits in the treatment of persons suffering from athetoid CP.

[204] The defendant's orthotist, Mr Brand, in a report responding to Ms Crosbie's recommendation, expressed the view that a SPIO/TLSO would negatively affect IDT's stability. Subsequently, in a joint minute with Mr Hakopian, he went along with the latter's recommendation of a SPIO/TLSO and SPIO compression suit for life, a position which he recanted in oral evidence.

DMO/SPIO and Cheneau orthoses described

[205] 'DMO' is an acronym for 'dynamic movement orthotic'. It is the brand name of a compression garment made from elasticised lycra. It is a single-piece garment. Mr Hakopian thought this might make it inappropriate for IDT because it would be difficult to remove when IDT went to the toilet. Dr Versfeld said that DMOs were imported from the United Kingdom. Ms Crosbie's understanding was that they are longer readily available in South Africa. They are in any event more expensive than SPIO suits.

[206] SPIO is the manufacturer of various orthoses. Mr Hakopian recommended two of SPIO's products. The one product is a vest made from a lycra material to the back of which can be fitted a semi-rigid panel called a TLSO. The vest has straps between the legs to anchor it. The other product is a SPIO compression suit, also made from lycra, consisting of a vest and tightfitting pants going down to the knees.

[207] The Cheneau brace, which Dr Versfeld recommends for IDT once he reaches the age of 10, is a rigid brace which runs from the crest of the hips to the neck. Rigid bracing is sometimes an appropriate treatment to arrest the progression of scoliosis. It would typically be used from the time major growth starts in early adolescence until skeletal maturity. Conventional wisdom is that for rigid bracing to be effective it must be worn for most of the day and night (Dr Versfeld said 23½ hours p/d, Prof Dunn said 20 hours or more). Essentially the brace is only removed when the user baths or showers.

[208] The plaintiffs acknowledge that the recommendations by their experts are in conflict. If IDT were in a Cheneau brace from the age of 10 to 19½, he would not be able to use the SPIO orthoses during those years. From the age of 20 onwards, the appropriateness of the SPIO orthoses depends on whether they are reasonably required to improve IDT's muscular stability; they would have no further role to play in the treatment of scoliosis.

Diagnosing scoliosis

[209] The spine comprises 12 thoracic (or dorsal) vertebrae (T1-T12 from top to bottom) and five lumbar vertebrae (L1-L5 from top to bottom). Scoliosis is a deformity in which the spine develops one or two lateral curves (either a 'C' or an 'S' curve). The curve may be to the left or the right side of the patient. It may be idiopathic (no known cause), congenital or neuromuscular. If IDT has scoliosis, it is neuromuscular, ie caused by the muscular abnormalities brought about by his athetoid CP.

[210] Diagnosis of scoliosis generally requires a frontal x-ray of the spine in a vertical position, with the patient standing (preferably) or seated upright on an

examination table. Lateral curvature of the spine is described with reference to the patient's left or right side. Because the x-ray image is frontal, a lateral curve to the patient's left will appear on the right-hand side of the image and vice versa. The degree of a scoliotic curve is expressed by the so-called Cobb angle. Using the x-ray, the doctor draws lines from the outer surfaces of the two vertebrae at the curve's extremities. The Cobb angle is the angle at which these lines intersect.[33] The apex of the curve is the vertebra furthest to the left or right from a notionally vertical spine. The Cobb angle depends on the angle at which the doctor draws the lines. Two doctors might draw the lines slightly differently; the same doctor doing the exercise twice might do likewise. There is thus an acceptable inter- and intra-observer margin for error of 5°.

[211] X-rays of the pelvis are an additional diagnostic aid. The pelvic x-ray is taken from above with the patient lying on his back.

[212] IDT's back and pelvis were x-rayed on three occasions: (i) on 14 November 2012 by Sunninghill Radiology (this was for purposes of Dr Versfeld's first report);[34] (ii) on 11 March 2016 by Morton & Partners (this was for purposes of Dr Versfeld's addendum report and oral testimony);[35] (iii) on 31 March 2016 by Groote Schuur Hospital ('GSH' – this was for purposes of Prof Dunn's report).[36] None of the radiologists testified.

[213] It is not in dispute that these x-rays show IDT's spine in curved positions. The question is whether the curves are scoliotic. The writhing or involuntary movements of an athetoid CP patient may produce transient lateral spinal curves. It is difficult to keep IDT still for purposes of taking x-rays. He also has a general tendency to lean to the left. He was seated when the vertical x-rays were taken.

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[33] This was explained in Prof Dunn's evidence with reference inter alia to exhibit "AD" pp 7-8.

[34] Exhibit "AE" pp 1-2.

[35] Exhibit "AF" pp 1 and 2 (left) and pp 3-4.

[36] Exhibit "AF" pp 1 and 2 (right) and p 5.

Defining scoliosis

[214] Dr Versfeld and Prof Dunn differ in their definition of scoliosis. I mean no disrespect to Dr Versfeld when I say that Prof Dunn's view is the conventional one.

[215] Prof Dunn says that scoliosis is a three-dimensional structural deformity. The development of the curve is associated with the lateral rotation of the implicated vertebrae. (This accords with the definition contained on the website of the South African Paediatric Orthopaedic Society.[37]) As scoliosis progresses there may also be wedging of vertebrae because uneven load-bearing on the surface of a vertebra causes one side of the vertebra to grow more than the other. One can detect rotation by examining, on a vertical x-ray, the relationship of the ribs to each other and by the position of the pedicles, which are small oval structures on the left and right hand side of each vertebra. In a person with a normal spine the pedicles will appear symmetrically on the outer edges of the vertebrae. Where a vertebra has rotated, the one pedicle will be wholly or partially obscured from view while the other pedicle will have moved towards the midline. Where the spine suffers from this rotational deformity, the examining doctor would not be able to straighten the curve by relaxing and manipulating the patient. The curve is fixed. Treatment will generally be aimed at preventing further rotation and increase of the curve.

[216] Specialists would not generally make a diagnosis of scoliosis for curves with Cobb angles of under 10°. Intervening at too low a threshold results in unnecessary treatment and an inefficient allocation of resources. For curves above the 10° threshold, one would look for signs of rotation. A series of x-rays over time may indicate that the same curve is increasing. Not all scoliotic curves progress. One would consider rigid bracing for curves between 15° and 30°. The advantages and disadvantages need to be discussed with the parents. The brace can be uncomfortable. Likely compliance with the requirement to wear the brace for more than 20 hours p/d day for some years would need to be assessed. One would not generally brace a curve which has progressed beyond 30°. Surgery has to be considered at about 50°.

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[37] Exhibit "LL".

[217] The main purpose of rigid bracing is to prevent the curve from progressing to the point where surgery is necessary. Bracing cannot guarantee that the curve will not progress to this point. Conversely one cannot be sure that in the absence of bracing the curve would have progressed to a point requiring surgery. A recent study in the United States, which compared outcomes in braced and non-braced groups, concluded that in the non-braced group the curves of 48% of the patients did not progress by more than 5° whereas in the braced group the curves of 72% of the patients did not progress by more than 5° (limiting a curve's progression to 5° or less would be regarded as successful). This suggested that only one in three patients who were treated by bracing actually benefited from it. This is not in itself a reason not to brace, since medical science cannot yet isolate those patients who will benefit from bracing, but it would be a factor to take into account in weighing the advantages and disadvantages.

[218] I did not understand Dr Versfeld to dispute Prof Dunn's description of the conventional thresholds for the definition and various treatments of scoliosis. But Dr Versfeld distinguishes between structural scoliosis and other scoliosis. Prof Dunn's definition, he says, applies to structural scoliosis. Dr Versfeld considers that one can have scoliosis without the structural element of rotation. He regards this as important in the early treatment of scoliosis. If one waits until a structural element is evident, one may be 'missing the boat'. Dr Versfeld advocates early conservative treatment, inter alia with physiotherapy and soft and rigid bracing. My impression was that in Dr Versfeld's opinion most orthopaedic surgeons, including Prof Dunn, have a conscious or subconscious bias in favour of surgery and are not committed to earlier interventions.

Discussion of definition

[219] I have no doubt that Dr Versfeld's views on the definition and early treatment of scoliosis are sincerely, even passionately, held. However I do not think they accord with mainstream medical opinion. Prof Dunn is a man of vast experience in orthopaedics generally and spinal deformities in particular. Following his registration as an orthopaedic specialist in 1999, he spent 18 months in the United Kingdom training at centres of excellence in the field of spinal surgery. He returned to South

Africa in 2001 and has been in active practice since then. He has performed more than 3000 spinal procedures. In 2015 alone he performed 60 scoliosis operations. He holds the chair in orthopaedic surgery at the University of Cape Town and is the head of orthopaedic surgery in the Western Cape Department of Health. Apart from extensive public and part-time private practice, he is involved in the teaching of orthopaedic surgery, has published widely and frequently attends and presents papers at local and international conferences. He was an impressive witness.

[220] Dr Versfeld is Prof Dunn’s senior by more than 20 years. He was the professor of orthopaedic surgery at the University of the Witwatersrand for two years in the late 1980s (where he did not do spinal work) before going into private practice. He does routine spinal surgery. While continuing with surgery, he has over the last seven years focused on the early non-surgical treatment of scoliosis. He does this in a team which includes a physiotherapist and orthotist. He identified a ‘gap’ in the treatment of scoliosis arising from the fact that in his view surgeons were not interested in bracing. Dr Versfeld has lost his full CV containing a complete list of his publications. What he was able to reconstruct was relatively modest. None of the listed publications deal with scoliosis.

[221] I thus proceed on the basis that Prof Dunn’s views are to be preferred to those of Dr Versfeld in regard to the definition and thresholds for treatment of scoliosis.

Does IDT have scoliosis?

[222] The Sunninghill radiologist identified a ‘mild curve’ of the thoracolumbar spine convex to the left with an apex at T11. The radiologist measured a Cobb angle of 3,9°, using T9 and L2 as the extremities of the curve. The pelvic x-ray showed IDT’s hips to be slightly tilted (elevated on the left). The radiologist considered that the left hip socket was shallow (a condition called subluxation), rendering that hip vulnerable to dislocation.

[223] In his first report Dr Versfeld concluded that IDT had mild scoliosis convex to the left. He did not say that he detected any sign of structural change. He

nevertheless recommended immediate physiotherapy, opining that subsequently IDT would probably need treatment with a DMO and then with rigid bracing.

[224] The Sunninghill radiologist, Dr Pencharz, did not himself diagnose scoliosis. Given the observer margin for error of 5°, a measured curve of 3,9° was compatible with a normal spine. Prof Dunn agreed that a very mild curve could be seen but said that one would never diagnose or treat scoliosis at such a small angle. In his view the x-ray afforded no basis for concluding that the curve had any structural component or that it would progress. IDT might just have been leaning slightly to the left. In regard to the pelvic x-ray, he thought it showed well located hips with no pelvic tilt. Prof Dunn could not understand on what basis Dr Versfeld had predicted that IDT would probably require bracing in the future. The x-ray 'raises no flags with me'.

[225] IDT was 3½ when the Sunninghill x-rays were taken and just over 4 when Dr Versfeld wrote his first report. About three years passed before the next x-rays were taken. In the intervening period IDT did not receive the treatment recommended or foreshadowed in Dr Versfeld's report.

[226] The Morton radiology report stated that there was a mild scoliotic curve to the left with the apex at T8. The Cobb angle was measured at 12°, using T5 and T12 as the extremities of the curve. There was 'secondary lumbar scoliosis' to the right, the apex being L3 and the Cobb angle being 20° using L1 and L5 as the extremities of the curve. The pelvic x-ray again showed a tilting up of the left hip.

[227] In his addendum report of 14 March 2016 Dr Versfeld considered that there had been a 'significant deterioration' of IDT's scoliosis. He based this on the Morton report and x-rays – he did not examine IDT again. He advised immediate bracing with a DMO. He estimated that IDT would need to move to a rigid Cheneau brace at the age of 10, in which he would remain until 18 months following skeletal maturity. Throughout the period of bracing he would need physiotherapy to strengthen his back muscles.

[228] Dr Versfeld testified that he felt vindicated by the Morton report because what he had predicted had come to pass. Furthermore the original single ‘C’ curve had now become a double ‘S’ curve. He said that he had re-examined the Sunninghill x-ray in the light of this finding and now saw the very beginnings of a lumbar curve to the right, something he had missed when doing his first report.

[229] Dr Versfeld’s second report did not include the observation that there were already signs of a lumbar curve in November 2012. His second report also did not say that the increased (though still mild) thoracic curve had any structural component. The radiology report likewise said nothing of rotation. In oral evidence Dr Versfeld confirmed that there was no sign of wedging but expressed the view that one could see some asymmetry of the pedicles at T6 and T7. His opinion in that regard was expressed somewhat diffidently. I cannot say that I was able to see it when the x-ray was exhibited on a screen in court.

[230] Prof Dunn saw IDT on 31 March 2016. He did not then know of the Morton x-rays, which is why he got x-rays from his radiology unit. He subsequently examined the Morton x-rays as well. He observed the thoracic and lumbar curves. He selected T3 and L1 as representing the extremities of the thoracic curve and measured a Cobb angle of 25,3°. He selected T12 and L5 for the lumbar curve and measured a Cobb angle of 28,4°. It will be apparent that he and the Morton radiologist, Dr Otto, selected different vertebrae and arrived at different angles. Prof Dunn’s Cobb angles were greater than Dr Otto’s.

[231] Prof Dunn did not believe, however, that these curves were scoliotic. Apart from the fact that he could not discern a structural deformity, he disagreed with Dr Versfeld that there was any progression of the same curve. Sunninghill reported a thoracolumbar curve from T9 to L2 with its apex at T11; Morton reported a thoracic curve from T5 to T12 with its apex at T8.

[232] In regard to Morton’s pelvic x-ray, Prof Dunn said the pelvis did not display much obliquity; he measured it at 4,5° which was ‘clinically insignificant’. The hips seemed to be relatively normal. The lumbar spine, which had a curve to the right in the vertical x-ray, now seemed to have straightened, consistent with the absence of

a structural deformity of the lumbar spine. The x-ray did not in his opinion show shallowness (subluxation) of the left hip socket (the Morton radiologist likewise expressed no such view).

[233] Prof Dunn said that IDT seems to have been lying skew when the Morton pelvic x-ray was taken. One could see this from the way his right leg was abducted (away from the midline) and his left leg adducted (towards the midline). This was not in itself of any significance. A person with normal pelvic and spinal structures could lie skew. In diagnosing scoliosis one is concerned with the alignment of the pelvic structures and the spine. Here the non-alignment was very slight at 4,5°. If one drew lines across the top of the iliac crests and along the iliac base, the lines appeared to him to be 'pretty parallel'.[38]

[234] Since the GSH x-rays were about the same time as the Morton x-rays, they shed important light on the conclusions to be drawn from the latter x-rays. Prof Dunn did not ask the GSH radiology unit to furnish him with a report. This accords with his usual practice; he has the experience and expertise to analyse spinal x-rays. The GSH vertical x-ray showed that the thoracic spine, which in the Sunninghill and Morton x-rays had exhibited a curve to the left, was now slightly curved to the right with a Cobb angle of 6° using T2 and T12 as the extremities of the curve. There was still a lumbar curve to the right, which Prof Dunn measured at 18°. In effect the whole spine showed a gentle curve from top to bottom. There was no evidence of rotation though the image of the pedicles of T8 (where Morton had placed the apex of the thoracic curve to the left) was not particularly good. The pedicles at L3, being the apex of the lumbar curve to the right as identified in the Morton report, were normally positioned. There was no evidence of wedging. The ribs joined the spine symmetrically. The spine appeared to be coming pretty much vertically up from the pelvis. Although it might seem to be going to the right, this was because the pelvis itself was tilted to the right and not because the spine was skew relative to the pelvis.

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[38] These two lines are known as the inter-crystal line and the Helgenreiner line respectively. I drew them in accordance with the witness's description on p 4 of exhibit "AF".

[235] It was put to Prof Dunn in cross-examination that in the GSH x-ray the ribs joining the spine at T11 bulged more to the left than to the right and that the heart was positioned more to the right. Prof Dunn replied that this was a result of the way IDT was sitting – his whole body was rotated slightly to the right, ie he was sitting obliquely to the x-ray machine. In x-rays of children one often sees this overall rotation (presumably because they tend to squirm and are not fully cooperative) but then everything is skew, and it is the same with IDT's x-ray.

[236] It was also put to him that in the GSH vertical x-ray IDT's pelvis was tilted up to the left. He agreed, saying that the left buttock was raised as he was sitting on the examination bed. Prof Dunn pointed out, however, that in the Morton pelvic x-ray, where IDT was lying on his back, the tilt was less obvious, indicating that it was dynamic, not fixed. Expressed differently, the pelvis assumed a more or less neutral position when IDT relaxed in the lying-down position.

[237] The most important conclusion which Prof Dunn drew from the GSH x-rays was that the left thoracic curve observed in the Sunninghill and Morton x-rays was not a fixed or structural curve because in the GSH x-ray the spine had fully straightened and then curved to the right. He added that in scoliosis a thoracic curve is usually more rigid than a lumbar curve. The fact that the thoracic curve had reversed itself gave him comfort that there was no structural element. Dr Versfeld acknowledged in cross-examination that one saw from the GSH x-ray that the thoracic curve could be straightened.

[238] In addition to the x-rays, Dr Versfeld and Prof Dunn conducted physical examinations. Dr Versfeld's first examination was on 14 November 2012. Although he did not examine IDT again following receipt of the Morton report, the plaintiffs' legal team asked him to do so before testifying, particularly having regard to Prof Dunn's challenge to the diagnosis. Dr Versfeld conducted the further examination in counsel's chambers on the morning of 18 April 2016, the day on which his testimony began.[39] In the earlier examination Dr Versfeld measured IDT's range of movement

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[39] Ms Bawa objected to evidence of this examination on the basis that the plaintiffs had been in possession of Prof Dunn's report since 18 April 2016 and that no supplementary report by Dr Versfeld dealing with the further examination had been served. Following brief submissions I allowed

in the lower limbs. In the case of hip abduction, the range of movement on the left was 20° less than on the right for knee straightening and knee bending (50° as against 70°). He considered that the loss of movement on the left was caused by hip obliquity. It is unclear whether Dr Versfeld thought that this in turn was evidence of scoliosis.

[239] Prof Dunn, who did not test range of movement, said that hip obliquity could not in itself cause a loss of range of movement. There had to be some structural restriction. Range of motion is measured with reference to the pelvic axis, wherever the axis happens to be. In the absence of a structural restriction, such as a muscular contracture (which Dr Versfeld did not find to be present), the range of motion relative to the axis will not change merely because the axis is rotated. He wondered whether Dr Versfeld had been careful to place IDT's pelvis in a neutral position before measuring the range, which ought to have been possible given the absence of contractures. If not, there was a danger of measuring range of movement with reference to the position of a notionally vertical axis when the axis was in fact tilted.

[240] Dr Versfeld identified what he believed to be mild scoliosis to the left, which is why he called for the Sunninghill x-rays. He agreed that a mild transitory curve could be caused by IDT's athetoid movements but he used his clinical experience to look for repetitive patterns over a period of 10 to 15 minutes. He thought the mild curve was persistent.

[241] He also observed IDT to have a 'markedly round back'. In cross-examination he accepted that because IDT had low muscle tone he would tend to slump more than normal but was able to sit up straight. He nevertheless said that poor posture promoted the development of scoliosis and that one of the important goals of physiotherapy was to improve posture.

[242] On 18 April 2016 Dr Versfeld undressed IDT and got him to do various normal activities. He described IDT as resistant, even aggressive. When IDT was sitting there was a very obvious upward tilt of the left pelvis. The pelvic asymmetry

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the evidence to be led subject to the defendant's right to take time for further instructions if necessary. In the event Ms Bawa did not seek time for this purpose.

was less pronounced when IDT was standing. When he got IDT to lean over forward there was the ‘very beginning’ of a rib hump on the posterior chest though from the front he did not observe any asymmetry. The significance of a rib hump is that as thoracic vertebrae start rotating they take the chest wall with it, creating a characteristic hump. This is a feature of more advanced scoliosis. When cross-examined about the supposed hump (which Prof Dunn had not observed), Dr Versfeld was somewhat equivocal, saying that he ‘thought’ there was some early sign of a hump but that if Prof Dunn said otherwise this represented only a ‘minimal disagreement’ between them.

[243] Prof Dunn examined IDT on 31 March 2016. He was quite surprised to see that IDT could stand and walk. Together with the absence of spasticity, these were good prognostic signs against scoliosis. While sitting on the floor IDT could use his hands to play on an electronic device. He seemed to have reasonable torsal strength. Prof Dunn put IDT in the Adams position (bending IDT over his knee and exposing his back more or less parallel to the ground). IDT was reasonably relaxed. His shoulders were level (ie there was no abnormal Bunnel angle[40]) and his pelvis did not seem to have any fixed obliquity (he said one would not notice a 5° pelvic tilt on clinical examination). If any structural deformity of the spine existed he believes he would have seen signs of it. He did not notice any rib hump. He added that if there was a rib hump caused by spinal rotation one would expect to see anterior chest asymmetry, which Dr Versfeld says he did not observe.

[244] The orthopaedic evidence does not establish on a balance of probability that IDT is suffering from scoliosis. The presence of left thoracic (though not identical) curves in the Sunninghill and Morton x-rays could quite plausibly be the result of the fact that IDT, with his athetoid movements and communication difficulties, is not an easy child to x-ray. He does also have a tendency to lean to the left. Prof Dunn was not in the least equivocal in his conclusion that IDT did not have scoliosis.

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[40] A simple screening test for scoliosis is to place the child in the Adams position in order to measure the angle between the shoulder blades (the Bunnel angle) using a scoliometer. A Cobb angle of 30° would translate into a Bunnel angle of between 7° and 12°. Prof Dunn explained these tests with reference to pp 3-6 of exhibit "AD”.

Future risk of scoliosis?

[245] There was some evidence on the link between athetoid CP and scoliosis. The plaintiffs' case on scoliosis was not put on the basis that IDT, while presently being free of scoliosis, had a quantifiable risk of developing it by virtue of his CP. If the latter had been alleged and established, I would have been entitled to allow a percentage of the reasonably anticipated costs of treating scoliosis (*Burger v Union National South British Insurance Company* supra) 1975 (4) SA 72 (W) at 74D-75H; cf *De Klerk v Absa Bank Ltd & Others* 2003 (4) SA 315 (SCA) para 28 quoting with approval a passage from the well-known English case of *Allied Maples Group Ltd v Simmons & Simmons (A Firm)* [1995] 4 All ER 907 (CA)).I shall nevertheless deal with the evidence on this point since it might be regarded as bearing on the ultimate question whether IDT already has scoliosis.

[246] Spasticity, particularly asymmetrical spasticity, predisposes the sufferer to muscle contractures. The shortening of muscles on one side of the trunk increases the risk of scoliosis. This risk is particularly pronounced where the patient is wheelchair-bound. As a general proposition, athetoid CP does not pose the same risk because the clinical picture is of random involuntary movements on both sides of the body. These opposing movements tend to neutralise each other. Athetoid CP may, however, be accompanied by elements of spasticity.

[247] In the main, the expert evidence was that IDT did not have any spasticity. This was the view of Dr Versfeld and Ms Crosbie on the plaintiffs' side and Dr Springer and Ms Scheffler on the defendant's side. Mr Hakopian did not mention spasticity. It was not put to Prof Dunn that IDT had any spasticity. He said that IDT did not fit the typical picture of spasticity-induced scoliosis. Dr Springer commented that she found no evidence of contractures and that these were not typical of athetoid CP. The dissenting voice was Mr Jackson who thought there was an element of extensor spasticity on the left side. Although IDT could move out of the spastic extension, there was more resistance than on the right side. In the absence of similar observations by other experts or a correlating of this supposed spasticity to scoliosis, not much weight can be placed on it.

[248] There was evidence, particularly from Ms Crosbie and Ms Scheffler, about whether IDT has ‘fixed’ postures or merely postural ‘tendencies’. A person with athetoid CP who wishes to use particular muscles (say the right hand and arm) may instinctively try to eliminate the disturbing effects of other involuntary movements by stiffening certain muscles (for example by pressing the left arm against the trunk). IDT uses these techniques. According to Ms Jackson they have progressed beyond mere tendencies so that he now ‘fixes’. This increases the risk of muscle contractures. With reference to photographs taken in 2012 and 2015, she expressed the view that there had been a deterioration. He was fixing more with his left arm and rotating his trunk more. When grasping food his grip was now more fist-like than before. When feeding himself with a spoon, he stabilised himself by pushing his left heel into the ground and pressing his left arm down onto the table. It was put to her in cross-examination that IDT did not adopt fixed stereotypical postures even if he had certain postural tendencies. She replied that he was ‘going more in this direction’ though he could still move in and out of the postures. She did not feel qualified to say with what frequency and for what duration particular postures would need to be maintained in order to give rise to contractures.

[249] Ms Scheffler disagreed with Ms Crosbie. Fixed stereotypical postures would normally be encountered in spastic CP, not athetoid CP. She felt that in general IDT moved in a very normal way but the athetosis unpredictably ‘bumped’ his normal movements. He did not get stuck in particular postures. She commented that people do not develop contractures just because they adopt particular positions for lengthy periods. People may spend many hours seated at a desk or behind the steering wheel without developing muscle contractures. IDT tended to adopt the postures observed by Ms Jackson when using his hands or feeling insecure. These problems could be addressed through physiotherapy and appropriate adjustments to his physical environment. In one of the video clips she pointed out that the table at which he was seated was too high which required him to bring his elbow above 90°. He had to use a very rudimentary grip to hold a spoon because it was thin and slippery. Things improved when he sat on the floor with his legs splayed out because he had a more stable base. In other video clips which showed him at play he displayed efficient balancing reactions when stumbling. On several occasions he

lay on his left side while holding a toy in his right hand. This involved trunk-lengthening, the opposite of a typical left-leaning slump.

[250] Prof Dunn said that he would not regard habitual postures as a cause of scoliosis. Significant muscular imbalance could give rise to scoliosis though not all muscular imbalance did so.

[251] It is common cause that IDT will benefit from physiotherapy. The occupational therapists concur that IDT will be assisted by various adjustments to his physical environment. The evidence does not establish, however, that IDT has or is likely to develop muscle contractures with the concomitant risk of scoliosis.

[252] Medical research into the link between CP and scoliosis is sparse and that which exists is quite old. Reference was made during Dr Versfeld's evidence to two articles, a 1970 paper by Balmer et al[41] and a 1974 paper by Rosenthal et al.[42] The authors of the Balmer paper referred to a 1967 paper reporting that in a group of 3000 cases of scoliosis there were two CP children. In a 1968 study 152 adolescents/young adults with CP were screened, of whom 15,2% had structural scoliosis, the condition being 'moderately severe' in 4%. The Balmer paper itself was a radiological review of 100 consecutive cases of CP children attending an out-patient clinic in Delaware. Twenty-one of the children had structural scoliosis, the severity being over 30° in six of the 21 children. According to a 1955 study the incidence of scoliosis in the general population was 1,9%, with 0,2% having curves over 35°. Balmer et al said that although their study involved a small series, the results suggested that the incidence of scoliosis in CP is higher than in the general population.

[253] The Balmer study does not identify how many of their 100 children had athetoid CP.[43] On my understanding the defendant accepts that spastic CP

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[41] Balmer et al *The Incidence and Treatment of Scoliosis in Cerebral Palsy* (1970) Journal of Bone and Joint Surgery [exhibit "JJ"].

[42] Rosenthal et al *The Occurrence of Scoliosis in Cerebral Palsy* (1974) Develop Med Child Neurol [exhibit "KK"].

[43] The authors discuss two illustrative cases out of ten children treated with Harrington rods. One of these two cases was a boy with athetoid CP and a scoliotic curve of 127°. It is not clear whether the children treated with Harrington rods were part of the group of 100.

increases the patient’s risk of scoliosis. The Balmer article does not assist in identifying the risk in athetoid CP patients.

[254] The Rosenthal paper recorded the results of a study of 50 ambulatory CP adolescents with a view to identifying the prevalence of scoliosis in CP children approaching skeletal maturity. Of the 50 adolescents, 34 were spastic, 12 athetoid and four ataxic. In total, 19 of the adolescents (38%) had scoliosis. Of the 12 athetoid patients four had scoliosis. In most of the 19 cases the curves were mild (13 were under 20° and only three were above 30°). The study group as a whole was small and the athetoid sub-group comprised only 12 children. Of the four athetoid cases, two had hemiplegic CP (ie the CP affected only one side of the body). Dr Versfeld agreed that the asymmetry of hemiplegia creates a greater risk of scoliosis than generalised athetosis such as IDT’s. Rosenthal et al said that they were unable to correlate curve severity with the extent of CP. Most curves in their study required little treatment.

[255] Prof Dunn testified that he has never seen or operated on an athetoid patient with scoliosis. He had reviewed the literature.[44] Very few papers mention athetosis in relation to scoliosis. In regard to the Rosenthal paper, he said that the two hemiplegic athetoid cases were not relevant to IDT’s condition and that the other two athetoid cases involved mild curves (12° and 18°) in adolescents approaching skeletal maturity (both were about age 16) and where no treatment seems to have been given or envisaged.

[256] In the joint minute Prof Dunn recorded that there was no definitive data on athetoid CP as it related to spinal deformity. Dr Versfeld testified that he would have been happy to agree on a statement that there was ‘little definitive data’. He agreed, though, that the sparse information available could not be regarded as ‘definitive’. Prof Dunn said during oral evidence that he could not say that scoliosis did not occur in athetoid CP sufferers. Any neuromuscular disorder must, he said, pose some increased risk of scoliosis. He said that even if the athetoid patient’s risk was double that of the ordinary person, the risk in the general population was only 2% so

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[44] Using the PubMed search engine.

that a risk of 4% would remain low. In his experience there was, in the case of athetoid CP, no significant risk of scoliosis requiring intervention.

[257] I thus conclude that the plaintiffs have not established on a balance of probability that IDT has or is likely to develop scoliosis or that he will probably require treatment in respect of scoliosis. In regard to precautionary monitoring, the agreed six-monthly consultations with the paediatric neurologist and the ongoing involvement of a physiotherapist should be sufficient in case, contrary to my view, structural scoliosis should develop.

The proposed treatment modalities

[258] If scoliosis had been proved, one would still need to consider whether the plaintiffs established that IDT would reasonably require and receive the proposed treatments Since SPIO suits have been recommended by Mr Hakopian and Ms Crosbie for the dual purposes of treating scoliosis and dynamic stability, I shall at this juncture assess the treatment modality for both purposes.

[259] I do not intend to deal with physiotherapy as a discrete form of treatment for scoliosis. Prof Dunn said that while physiotherapy may have other benefits, including improvement of posture, it has not been shown to prevent or retard the progression of scoliosis. Ms Jackson and Ms Scheffler agree that IDT should receive physiotherapy for other purposes. I do not think the difference between them on the extent of the physiotherapy required would be affected by whether one regards physiotherapy as a treatment modality for scoliosis. To the extent that it is beneficial for scoliosis, IDT will get the benefit.

DMO/SPIO treatment

[260] Prof Dunn said that DMO and SPIO suits have no place in the treatment of scoliosis, that there is no evidence for their use and that he could not understand why Dr Versfeld had made the recommendation. Medical writing on the subject was qualitative and subjective. Such treatment has never been motivated at any of the many conferences he has attended.

[261] Dr Versfeld testified that he had been using DMO suits for the last seven years. He currently has four or five children with scoliosis on whom he is using DMOs (though whether these are cases of scoliosis on Prof Dunn’s definition is unclear). There were some instances where the DMO did not work, which he attributed to a poor-fitting suit. X-rays taken after an initial use of the DMO usually show big improvement. Unlike a rigid brace, the suit is only worn during working hours.

[262] It is not clear to me why, insofar as scoliosis is concerned, soft or semi-rigid bracing for say 10 hours p/d should have beneficial results where rigid bracing would only yield benefits if worn for 20 hours or more. Dr Versfeld’s clinical experience in the use of DMO suits is anecdotal and based on only a handful of patients. One knows that even without intervention some scoliotic curves do not progress. I do not suggest that it is inappropriate for Dr Versfeld to prescribe DMO suits for his patients. I do not doubt that he genuinely believes they are beneficial. While rigorous evidence for this may be lacking, I do not understand it to be suggested that DMO suits do harm. However the question I must decide is whether there is a sufficient acceptance for it as a treatment modality to regard its cost as a reasonable expense which the defendant must bear.

[263] In the nature of things, the clinical evidence of the other witnesses in the use of DMO/SPIO suits is also of limited, if any, weight. Ms Crosbie said that she is currently treating three CP children who wore these or similar suits. One of these children has athetoid CP. She formerly had another athetoid CP child on such treatment but the family has emigrated.

[264] Ms Jackson, who qualified in New Zealand in 1983 and emigrated to South Africa in 1997, has never recommended a DMO suit and is apparently not familiar with them.

[265] I do not recall Mr Hakopian being asked about the number of patients for whom he has recommended DMO or SPIO suits. The defendant’s counsel explored in cross-examination whether his SPIO recommendations were impartial. This line of questioning arose from his ownership of an entity called GH Medical. He explained

that he started GH Medical in 2010 because he wanted to explore distributing SPIO suits in South Africa. He organised for an instructor to come to South Africa to explain the benefits and use of the orthosis. He arranged for someone to take over GH Medical in 2015. Ms Crosbie, who was the first of the plaintiffs' experts to recommend a SPIO suit, said that she obtained her costing from GH Medical.

[266] It is not without significance that in his first report of April 2013, following an examination on 14 November 2012, Mr Hakopian did not mention or recommend a DMO/SPIO. He also did not identify scoliosis at that stage. His SPIO recommendation came in his second report of November 2015, about two months after Ms Crosbie's second report. In her second report Ms Crosbie referred in turn to Dr Versfeld's diagnosis of scoliosis and the latter's recommendation of a DMO suit. Because she understood DMO suits no longer to be available in South Africa, she recommended a SPIO suit. In his second report Mr Hakopian recommended the SPIO vest with TLSO specifically for the mild scoliosis diagnosed by Dr Versfeld. The SPIO compression suit, on the other hand, was said to provide 'deep pressure, which appears to be an important somatic input for balance and movement control'. Deep pressure, he considered, would assist IDT 'in controlling uncoordinated and dyskinetic movement and provide [him] with improved dynamic stability'.

[267] Ms Scheffler, the defendant's physiotherapist, worked in the public sector from 1994 to 2010 and has been in private practice since then. She has treated many CP patients over the years. To judge by her evidence, she has never prescribed the use of a DMO or SPIO suit. She testified that in June 2014 and at the invitation of an orthotist, Mr Malcolm Freedman, she attended a DMO workshop in Cape Town presented by the UK manufacturer. Mr Freedman asked her to do a joint assessment of IDT and of another athetoid CP child (a girl) to determine whether they would benefit from DMOs. They scheduled an appointment for the girl but she got sick and the joint assessment did not take place. The concept of a compression garment initially struck her as plausible but she could not find much literature to support its use. Her impression is that after some enthusiasm the concept fizzled out.

[268] The plaintiffs called Mr Freedman as a lay witness. (The defendant had arranged for Mr Freedman to see IDT but did not file an expert report.) Mr Freedman testified that during his examination he put IDT into a DMO suit. IDT seemed to tolerate it well and it appeared to help his movements. Mr Freedman said that he had used a DMO suit for a two-year-old boy with scoliosis (a 16° curve). After two years the scoliosis corrected itself and the DMO therapy was discontinued. He mentioned two other patients who had used DMOs. Only one of these patients was on a replacement cycle.

[269] I have already mentioned that Mr Brand, the defendant's orthotist, initially disputed the appropriateness of DMO/SPIO orthoses when commenting on Ms Crosbie's second report. He changed his mind in the joint minute with Mr Hakopian. He then recanted during oral evidence. While he initially impressed as a sincere witness, my conclusion by the end of his testimony was that he was unreliable. On his own version he went along with Mr Hakopian's recommendation for inadequate reasons and recanted for equally inadequate reasons, bending like a reed in the wind. I am satisfied that he does not have enough knowledge on the subject to express an expert opinion for or against the use of DMO/SPIO suits. He testified that he had never actually seen a SPIO suit, only photographs.

[270] The plaintiffs' experts who recommended DMO/SPIO suits were asked in cross-examination about the evidential foundation for their efficacy. Two research papers were mentioned: a 2010 paper by Cogill et al[45] and a 2012 paper by Garland.[46] These were canvassed during the evidence of Mr Hakopian and Ms Scheffler.

[271] The Cogill paper is a review of existing literature, not a study of patients. The review was inspired by a question from the mother of a five-year-old boy with athetoid CP who complained of difficulties in putting his lycra suit on each day. She wanted to know if it actually helped his function and movement. The authors

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[45] Cogill et al *Do Lycra Garments Improve Function and Movement in Children with Cerebral Palsy?* (2010) Arch Dis Child (University of Warwick) [exhibit "S"]. It is unclear whether the document handed in is complete since the caption I have cited as the title is described as 'Question1'.

[46] Garland *The Effect of Dynamic Elastomeric Fabric Orthoses on Upper Extremity Function of Children with Cerebral Palsy: Systematic Review of the Literature* (2012) ACPOC News.

concluded, from a survey of eight relevant papers (ranging from 1995 to 2004), that there were no systematic reviews or randomised controlled trials to establish the efficacy of lycra garments. Most published papers involved small patient numbers. Available studies suggested that lycra garments improved proximal stability and function in some CP children but the evidence was limited. There were practical difficulties – lycra garments were tightfitting, difficult to don and doff, and children often complained of discomfort. The high cost could not be ignored. Although on current evidence children with athetosis were among those for whom the advantages might outweigh the disadvantages, more research was needed before one could implement an evidence-based approach to using lycra garments in the management of CP children.

[272] The Garland paper is also not original research but a survey of 14 studies ranging from 1993 to 2011. It includes the studies reviewed in Cogill and a few later papers. Of the 170 patients making up the 14 studies, 16 had athetoid CP and six had a combination of spasticity and athetosis. Some of the papers concluded that there was no significant improvement.[47] Others reported various kinds of benefits. Garland concluded, overall, that significant improvement was reported in upper extremity function. However, the quality of the methods of 10 out of the 14 studies reviewed was low. Future studies should consider stronger designs that can control for confounding factors. Clinicians should not only rely on their clinical experience: ‘A search of new studies that provide valid and applicable evidence to support their clinical practice should also be emphasized.’

[273] During her evidence Ms Scheffler made reference to the policy statements of two USA medical schemes, Aetna[48] and Health Net,[49] namely that suit therapy devices, TLSO bracing and DMOs are experimental and/or not medically necessary in the treatment of CP, having regard to the absence of peer-reviewed literature validating their effectiveness and safety. There was objection to my receiving these documents. I allowed them to the extent that they constituted a summary of

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[47] See Table 3 (Bailes; Flangahan; Corn; Rennie). Of these the Bailes research is probably the most important since the study method was reasonably strong. Garland classified the level of evidence in the various studies as I, II, III or IV, with I being the best. The Bailes study was level I.

[48] Exhibit “AP”.

[49] Exhibit “AQ””.

published literature, on the basis that the policy positions adopted by the medical schemes were not in themselves relevant. The schemes' policy documents cover some of the articles mentioned in Cogill and Garland and reference certain other papers as well. I do not think it is necessary to go into the details.

[274] The plaintiffs' counsel directed my attention to the fact that in *Whiten v St George's Healthcare NHS Trust* [2011] EWHC 2066 the cost of lycra suits was allowed for a spastic-dystonic quadriplegic CP child (see paras 320-321). That was done pursuant to an agreed recommendation by the physiotherapists, the basis and purpose of which does not appear from the report. I must decide the case on the basis of the evidence before me.

[275] The evidence I have summarised has led me to conclude that the plaintiffs have failed to establish that DMO/SPIO orthoses have sufficient proven efficacy, whether in the treatment of scoliosis or to enhance mobility and function, to constitute a reasonable medical expense for which the defendant is liable. This does not mean that IDT will be deprived of these orthoses if his treating team genuinely think he should have them. He will be receiving a substantial award for lost earnings and general damages.

[276] If there were sufficient scientific foundation for the efficacy of DMO/SPIO suits, there would be the further question whether IDT is likely to use them for the period recommended by Dr Versfeld (ie for the next three years) or by Ms Crosbie (ie until IDT reaches the age of 20) or by Mr Hakopian (ie for the rest of his life). IDT's mother testified that he is very sensitive to touch. He would not tolerate hearing aids, continually pulling them out. He did not like his ears to be cleaned. He disliked lotion on his skin. A neighbour knitted a beanie to go over his ears to keep the hearing aids in place but he would not wear it. His tactile aversion has also manifested itself in his preference for soft shoes.

[277] I have already mentioned the observation in the Cogill paper to the effect that lycra garments present practical difficulties. They are tightfitting and difficult to don and doff. Children often complain of discomfort.

[278] Ms Crosbie said that SPIO suits are not made from a scratchy material and do not move contrary to the direction of the skin. She thought IDT would tolerate the suit if there were appropriate introduction and gradual scaling-up of its use.

[279] I am extremely doubtful whether IDT would accept any of the DMO/SPIO regimes proposed by the plaintiffs' experts. Apart from his tactile aversion, the suit – particularly the two-piece compression garment – will not be easy to don and doff. IB said that IDT likes to do things for himself. Many recommended interventions are aimed at enhancing his independence. A DMO/SPIO is not something which he could easily don and doff on his own. In the case of Mr Hakopian's recommendation, the problem will be exacerbated by the fact that different suits will be used on the same day depending on whether IDT is sitting or active.

[280] Another complicating feature is toileting. I do not recall evidence as to how diapers would be accommodated, particularly in the tightfitting pants of the compression suit. There is a reasonable prospect that IDT will become toilet-trained. Dr Choonara testified, however, that IDT may remain socially incontinent, in the sense that his athetosis will make it more difficult for him to get to the toilet in sufficient time to prevent mishap. Tightfitting lycra pants, which as I understand it would be worn underneath ordinary trousers, will be an added layer of difficulty for him when using the toilet.

[281] IDT's significantly impaired communication and language abilities will make it difficult for anyone to explain to him why he is being required to wear the special suit. An inability to understand the supposed benefits is likely to increase his resistance. My impression is that he is quite strong-willed. He has, over his relatively short life, been subjected to many medical examinations and treatments. He will in the future receive a significant amount of therapy and medical treatment. Among the agreed items are weighted collars, vests and wrist bands, foot orthoses and a belt or holder for his AAC aids. (According to Ms Crosbie, the weighted vest, like the SPIO suit, enhances proprioception.) I consider that IDT will baulk at the added intrusion, inconvenience and discomfort of wearing a DMO or SPIO suit. This was also Ms Lundy's view.

[282] A final consideration is the attitude of his parents and the treating team. The experts who have recommended DMO or SPIO orthoses (Dr Versfeld, Mr Hakopian and Ms Crosbie) are not part of IDT's treating team, at least not at present. They are based in Johannesburg. In deciding whether to incur the expense of these orthoses and whether to subject IDT to their use, his parents (duly advised by the treating team) will inevitably take into account the extent to which IDT is expected to benefit. In so far as scoliosis is concerned, they will know that a leading orthopaedic surgeon in South Africa with particular experience in spinal deformities holds the view that IDT does not have scoliosis and is at no particular risk of developing it. They will be aware of that surgeon's opinion that DMO/SPIO suits have no place in the treatment of scoliosis. They will have been alerted to the debate about the efficacy of lycra suits and the absence of clear scientific support for their use. In these circumstances I would expect them, particularly in the event of resistance from IDT, to decide not to subject him to this additional form of treatment. The trustee, which would make the funding decision, would also be alive to the matters I have mentioned.

[283] I have been told that in May 2016 IDT was supplied with a SPIO/TLSO through the orthotist Mr Freedman (there is now a claim for this as a past expense). I have no evidence about that decision, who apart from Mr Freedman was involved or how it has worked out. At the time she testified in February 2016 IB did not know about SPIO suits or the scoliosis diagnosis. I do not know whether, when the SPIO/TLSO was acquired in May 2016 (shortly after Prof Dunn's evidence), the parents had been told of the experts' conflicting views.

[284] I thus consider that DMO/SPIO treatment, even if it is now being tried out, is unlikely to be persisted with in the medium- to long-term.

Cheneau treatment

[285] The rigid Cheneau brace which Dr Versfeld recommends for IDT between the ages of 10 and 19½ will undoubtedly come with considerable discomfort. Prof Dunn testified that most of the medical evidence for the efficacy of rigid bracing is based on data on the treatment of idiopathic scoliosis and comes from colder countries

where compliance is better. In warmer countries heat exacerbates discomfort. IDT's constant athetoid movements within the rigid brace would also increase discomfort.

[286] Again, I think IDT, who will not understand the supposed benefit, is likely to be hostile, both on grounds of discomfort and appearance. His parents and the treating team will be aware of the difference of opinion (to put it no higher) as to whether IDT in fact has scoliosis. They will also know that if IDT has scoliosis the curve, even if left untreated, may not deteriorate to a level requiring surgery and conversely that the curve, even if rigidly braced, may still deteriorate to a level requiring surgery.

[287] I thus do not think that treatment in a Cheneau brace is a practical reality.

[288] For all of the above reasons no amount is awarded in respect of items 43, 55(a) and 55(b) of "POC1".

Manual wheelchair [items 58-60 of "POC1; item 43 of "POC2"]

[289] The experts agree that IDT should have a powered wheelchair and a compact manual machine as backup. They disagree on choice and associated cost. I deal first with the manual wheelchair.

[290] Although the plaintiffs' experts were not of one mind, the claim is based on Mr Hakopian's recommendation of a Lightning pushchair ('Lightning') at a current cost of R27 120 to be replaced every four years to age 18 to accommodate growth and then every five years for life.[50] (The four years is an average of the chair's estimated lifespan of three to five years.) As an alternative, the plaintiffs contend that a Rodeo pushchair at R49 500 could be considered.

[291] In her second report of September 2015 Ms Jackson recommended an X-Panda wheelchair at R65 000 to be replaced every three to five years. She said the chair allows for movement when the child thrusts and moves but then returns the child to a pre-set position. In her joint minute with Ms Scheffler in December 2015

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[50] See photograph at 12/221.

Ms Jackson said that because of IDT's improvement she no longer saw the need for this type of wheelchair, a view she repeated in oral evidence. In the joint minute she deferred to Mr Hakopian's recommendations. This was unfortunate. Wheelchair recommendations are within her scope of practice and she in fact made wheelchair recommendations in both her reports. Her explanation in oral evidence that she thought Mr Hakopian had greater expertise is weak. An expert who takes this approach is at risk of creating the impression that she does not want to offer her own opinion lest it harm the claimant's case.

[292] Ms Crosbie in her reports deferred first to Mr Rademeyer and then to Ms Jackson.

[293] Shortly after her appointment Ms Bester facilitated the purchase of a Pacer Lite Steel wheelchair ('Pacer') from CE Mobility for R6413, a Shona Tess Back positioning cushion ('Tess Back') for R7875 and certain modest accessories for R1750 (removable anti-tip assembly, foam cushion, waterproof cushion cover, pelvic restraint and perspex tray). Inclusive of VAT, the total cost was R18 283.[51] This was in June 2015. IDT is still using this wheelchair.

[294] Ms Scheffler considered that the Pacer was adequate for IDT's purposes. She estimated its cost as at December 2015 to be R10 000. Her costing did not include the Tess Back or accessories. She thought a Tess Back was not indicated.

[295] Ms Scheffler said that Mr Hakopian's recommendation of a pushchair was inappropriate. Its appearance was that of a child's pram. In her experience older children regarded a pushchair as childish. One wants to enhance IDT's social participation and self-esteem. The pushchair would make IDT entirely dependent on a carer for mobility. By contrast he would have some self-propulsion ability with the Pacer.

[296] Ms Scheffler's criticism of the pushchair is valid and consistent with other evidence. In August 2010 Red Cross Hospital supplied IDT with a Shonaquip buggy.

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[51] See invoice at 9/54.

He was 1½ at that time so the use of the pushchair is not surprising. For some months during 2013 and 2014 he used a rollator but had ceased such use by the time he saw Dr Springer in September 2014. There is nothing to indicate that at that stage he was using, or wanted to be in, a pushchair. He seems to be a child with a desire for independence. Ms Scheffler reported in September 2014 that according to IB her son was refusing to be transported in the buggy.[52]

[297] Ms Bester met IDT and the family in March/April 2015. She testified that there was an urgent need to improve IDT's community mobility. Prior to her appointment the parents, if they went shopping with IDT, put him in a shopping trolley. They avoided taking him out because of the difficulty in moving around with him. IB wanted a pushchair. Ms Bester had discussions with Martha Spruit, an occupational therapist employed by CE Mobility. Ms Spruit challenged the concept of a buggy because it was essentially a baby stroller whereas IDT was a six-year-old boy. She also felt that the buggy would provide no postural support.[53]

[298] Ms Bester, herself an occupational therapist, and IB accepted Ms Spruit's advice, hence the purchase of the Pacer. Ms Bester testified that CE Mobility is a reputable firm which offers a wide range of options. She has had previous dealings with Ms Spruit.

[299] When cross-examined Ms Bester seemed to me to be somewhat defensive, perhaps concerned that her answers might jeopardise Mr Hakopian's recommendation. She said she had needed a simple and immediate solution for IDT's community mobility and that her brief from Mr Joseph was to be conservative in her expenditure. She acknowledged that a constrained budget did not feature in her correspondence with Ms Spruit. If a Lightning or Rodeo had been considered distinctly preferable for IDT, there would have been no difficulty in funding its acquisition out of the interim payment of R1,5 million. The price difference would have been R8000 – R30 000 depending on which pushchair was bought.

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[52] 7/55.

[53] There is an image of the buggy under consideration at 11/94.

[300] In her second report Ms Jackson considered but rejected the idea of a Shonaquip buggy for IDT.

[301] The plaintiffs filed an expert report from Mr Rademeyer, a mobility expert and himself a wheelchair user. Although the plaintiffs did not in the event rely on his recommendations, they called him as a witness, perhaps a defensive measure lest an adverse inference be drawn. In his report he said that imported wheelchairs could cost up to 800% more than locally manufactured ones and that although local wheelchairs were more rudimentary they offered comparable functionality. Insofar as manual wheelchairs are concerned, his recommendation (in November 2012) was that IDT have one paediatric wheelchair until age 12 (estimated cost R18 480) and an intermediate/adult manual positioning wheelchair thereafter for life with a replacement cycle of eight years (estimated cost R25 440). He did not mention specific makes of wheelchair but in oral evidence confirmed that the Pacer would be a positioning wheelchair. In regard to the estimated lifespan of wheelchairs, he said it depended on the setting (rural/urban), the user and the quality of chair. In regard to his own wheelchair, he said it lasted about ten years.

[302] During evidence in chief Ms Scheffler demonstrated the features of the Pacer, Tess Back and tray. The large wheels can quickly be removed by clicking on the hub nut. The chair then folds down. The Tess Back, which can be quickly inserted or removed, provides lateral trunk support. Somewhat to my surprise she did not at that stage mention what she subsequently said in cross-examination, namely that in her view IDT did not need the Tess Back. The defendant filed expert reports by Dr Janine Botha, a doctor and rehabilitation specialist, though she was not called as a witness. Dr Botha did not examine IDT but reviewed the medico-legal reports. In her second report of 24 November 2015 she said that the Tess Back, if set up correctly, could provide adequate trunk postural support for IDT.[54]

[303] In oral evidence Mr Hakopian said that the Rodeo was more expensive than the Lightning and had an adjustable tilting backrest which was not needed for compact backup mobility (at the time he testified the plaintiffs' claim was still

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[54] 7/215.

formulated with reference to Rodeo). The Rodeo’s anti-thrust seat, while it might enhance IDT’s comfort, was more important for children with leg spasticity.

[304] Mr Hakopian testified that the Pacer was a ‘standard’ or ‘conventional’ wheelchair designed mainly for paraplegics. IDT would have difficulty with self-propulsion, particularly getting his hands over the armrests and coordinating hands and feet. He might be able to propel himself but changes in direction would be problematic.

[305] I have come to the conclusion that the Pacer, together with the Tess Back and the accessories which IDT’s Pacer currently has, is a reasonable backup machine. In appearance it is preferable to a pushchair for a growing child and an adult. It at least offers some scope for self-propulsion. The Lightning does not seem to have support features which IDT particularly needs, at least not for backup mobility. If necessary, inexpensive modifications to the chair could be made using foam, rubber and glue, as Ms Scheffler explained in her evidence.

[306] I will thus allow the amount of R18 283 as a past expense (item 43 of “POC2”). Based on Mr Rademeyer’s first report, this wheelchair should last IDT until he reaches the age of 13.

[307] In accordance with Ms Scheffler’s evidence about the increase in the price of the Pacer chassis, the current cost is about R10 000 including VAT.[55] I understood Ms Scheffler to say that a Pacer for a teenager and adult would be more expensive (between R8000-R10 000 for a paediatric chair, from R8000–R20 000 for an intermediate/adult chair). This is consistent with Mr Rademeyer’s first report. On the figures he gives the increase is 38%.[56] In the absence of more precise information, I propose to assume an increase of 40%. This means that at age 13 IDT will get a new Pacer chassis at a cost of R14 000. The current cost of the accessories other than the tray and anti-tip assembly, is R9924.[57] Allowing the same amounts as

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[55] If the chassis now costs R10 000 inclusive of VAT, the ex-VAT price is about R8772 as against R6 413 in the invoice at 9/54.
[56] R18 480 and R25 440 [6/625].
[57] See the CE Mobility quotation at 11/312.

before for a new tray and anti-tip assembly (R1287),[58] the total cost at age 13 will be R25 211 inclusive of VAT.

[308] Thereafter I think a replacement cycle of seven years until the end of the cycle in which IDT reaches his 40th birthday is reasonable. The chair will be used in an urban setting and only as compact backup.

[309] Thereafter (ie the last 15 years of IDT's expected life), I consider that the replacement cycle should be reduced to five years. There was extensive and contentious evidence about the extent to which IDT is likely to lose mobility as he nears the end of his life. Reduced mobility would result in increased use of his wheelchair. Most of the expensive claims hinging on the end-of-life scenario have been settled. I will thus not analyse the differing opinions at great length.

[310] Various research papers were handed in as exhibits (Strauss 2004;[59] McCormick 2007;[60] McGinley 2014[61]), with the most attention being devoted to the McGinley paper. There is data showing that the walking ability of CP sufferers declines in later years. This is more pronounced in sufferers who in childhood already have relatively poor mobility (GMFCS III). Even then, the data does not indicate that complete loss of mobility (in the sense of being unable to support one's weight and assist in passive transfers) is the most likely scenario. Some CP patients may use their wheelchairs more not because objectively they have less ability to walk but because of loss of confidence from falls or fear of falls. Patients with bilateral syndromes and quadriplegia are more prone to report problems than those with hemiplegia.

[311] I have found IDT to be a GMFCS II. This counts in his favour in the end-of-life scenario. On the other hand his athetosis is bilateral, which is adverse. I cannot find that he will become completely immobile but I accept that he will use his wheelchair more often. According to the McGinley paper the median age of deterioration in cases of bilateral CP is 37. This would be 18 years before IDT's EDA of 55. It would

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[58] R1092 and R195 inclusive of VAT– see invoice at 9/54.
[59] Exhibit AO".
[60] Exhibit "XX".
[61] Exhibit AN".

be fair in IDT's case to assume increased usage as from age 40 (essentially the last 15 years of his life). Since the last seven-year cycle will expire on his 40th birthday, the five-year cycle will start from that date.

[312] In accordance with Mr Hakopian's view, the plaintiffs claim annual maintenance of R1500 save in replacement years. This is on the assumption that a Lightning would be acquired. Ms Scheffler in November 2015 considered that a manual wheelchair would require maintenance at an annual amount of R800. She made a separate allowance for customisation of IDT's environment, including his wheelchair, using materials such as foam, rubber and glue (R500 every two years), and for a wheelchair positioning cushion (R300 p/a). Since the Pacer accessories for which I have made allowance include the Tess Back and a foam cushion and cover, I think R1200 p/a is reasonable for maintenance and customisation. This amount will be allowed in every year other than replacement years.

Powered wheelchair and Mygo seat [items 61-66 of "POC1"]

Introduction

[313] The plaintiffs' claim in respect of the powered wheelchair, based on Mr Hakopian's recommendation, is that an Ottobock B500S wheelchair ('B500') with Mygo seat and wheelchair accessories be acquired forthwith for IDT at a cost of R155 793, with a five-year replacement cycle.[62] Batteries are claimed at R9300 p/a and maintenance at R5500 p/a (the average of an expected range of R3000 - R8000).

[314] The Ottobock is an imported machine. Ottobock has a South African office in Johannesburg. After some uncertainty, it was established that there is an orthotist practice at Vincent Pallotti Hospital in Cape Town which sells, repairs and services Ottobock products.[63]

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[62] This is based on the Ottobock quote, exhibit "R".

[63] Exhibit "AC", an affidavit which was handed in by agreement.

[315] The B500 is a front-wheel drive.[64] The chassis, being the basic chair without accessories and Mygo seat, costs R69 043.[65] The Mygo seat costs R46 625. There was not much evidence about the accessories which account for the balance of R39 228. According to the quotation and item codes the accessories are: puncture-proof tyres on castor wheels; castor wheel suspension; chassis suspension; electric lighting and rear marker plate for the chassis; control panel holder; attendant control; joystick top (flexible, including large ball top); and rear bumper.

[316] The Mygo seat can be set in various ways to provide pelvic stability, sacral support and pelvic cushioning, trunk and head alignment and leg and foot positioning.[66] It can be used as a seat on various bases. In the present case the proposal is that the B500 will be its base.[67] The Mygo seat itself is referred to in the Mygo brochure as a ‘seat shell’.[68] Mr Hakopian proposed a Size 2 Mygo shell. Various accessories for the Mygo seat can be selected.[69]

[317] In his first report (April 2013) Mr Hakopian proposed a Skippi electric wheelchair at a cost of R75 000, to be replaced after five years by a ‘bigger electric wheelchair with a stand-up feature’ costing between R170 000 – R300 000. This was the basis of the plaintiffs’ claim at the time he testified though an amendment in line with the current claim was foreshadowed. In his second report and oral evidence Mr Hakopian said that he no longer thought a stand-up feature was needed.

[318] Mr Hakopian’s first report did not include a recommendation for a Mygo seat (unless its cost was subsumed in the somewhat broad and generous estimate for the ‘bigger electric wheelchair’).

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[64] See image at 12/193.

[65] This is the VAT-inclusive sum of the first two items listed on the quotation, exhibit "R".

[66] See Mygo brochure at 12/204-217.

[67] In the images at 12/194 and 12/205 the Mygo seat is mounted on a different kind of base (four legs with castors). My understanding is that the cost for the Mygo contained in the quotation, exhibit “R”, does not include this (or any) base.

[68] 12/214.

[69] See 12/215-216.

[319] In his second report (November 2015) Mr Hakopian recommended the B500 with Mygo seat. The report stated that this chair would be a good companion for IDT, particularly when long distances had to be covered or he had to manoeuvre through indoor passages or over uneven terrain. Once IDT mastered the operation of the control unit, he could even use the B500 at school. Mr Hakopian recommended that there should be a heavy duty control unit, attendant control (so that a caregiver can override IDT's control unit), a clear tray and a bumper bar.

[320] In regard to the Mygo seat, he reported that it would provide appropriate postural support and comfort during long hours of sitting. He thought the Mygo's good pelvic support, with its four-point pelvic harness, was the most important positioning component for IDT, as it would achieve the best possible support base for trunk and head alignment as well as for hand function when operating the control unit. Because the Mygo is fully adjustable, it could accommodate IDT's growth.

[321] He stated in the report that the all-in cost of the B500 and Mygo seat was R270 000. In oral evidence he adjusted this downwards to R155 794 in accordance with the quotation, exhibit "R". He testified that the earlier price had been based on an 'incorrect product' and the inclusion of extras which IDT did not need. In particular, his revised costing excluded certain postural extras, rather concentrating on pelvic support. The wheelchair has a standard seat with back-angle and seat-inclination adjustability.[70] There are other seating, cushioning and adjustability options but these have not been included in the quotation. This appears consistent with reliance on the Mygo. What is not clear is precisely what Mygo extras Mr Hakopian recommended. The Mygo product code in the Ottobock quotation (exhibit "R") is the code for the standard Mygo without any extras.[71]

[322] In cross-examination it was put to Mr Hakopian that the B500 chassis had capacity for various features which IDT would not be getting, a proposition he accepted. He was asked about a somewhat cheaper Ottobock product, the B400.[72] The following are some of the differing technical specifications of the B500/B400

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[70] Code EC12 in the code list.

[71] Exhibit "R" refers to a product code 414P88=50000_K which is the standard Mygo seat shown at 12/194.

[72] See brochure, exhibit "U".

products: range – 35 km/25-35 km; battery charging time – 8 hr/10 hr; maximum load capacity/user weight –140 kg/95 kg; climbing ability – 17°/12°; maximum obstacle negotiation (height obstacles like pavement curbs) – 8 cm/5-10 cm; turning radius – 76 cm/80 cm. Their top speeds are the same (6 km/h).

[323] The pricing of the B400 was handed up during Ms Scheffler's evidence. The retail price including VAT is R46 043.[73] The same price list reflects a price for the B500 of R71 847[74], roughly the same as the chassis price of R69 941 contained in the Ottobock quotation exhibit "R". It may safely be inferred that the B400 price does not incorporate any of the extras listed in the Ottobock quotation. Although there was no evidence to this effect, I would expect extras such as puncture-proof tyres, suspension, control panel holder, attendant controls and the like, to be available for the B400. The Mygo seat, as I understand it, could be used in conjunction with the B400.

[324] In his first report (November 2012) Mr Rademeyer said that the median price for a locally manufactured electric wheelchair was R48 500. He recommended such a wheelchair for IDT once he reached the age of 12, with an estimated replacement cycle of ten years. As I have previously mentioned, he said that more sophisticated imported products could cost up to 800% more. In his second report and oral evidence Mr Rademeyer unfortunately deferred to Mr Hakopian without providing his own reasoned recommendation. With regard to the Mygo seat, he said it fell within what one would expect to pay for a 'high-level imported product'.

[325] In Ms Jackson's first report (April 2013) she proposed that upon reaching adulthood IDT get a Netti electric wheelchair at an estimated cost of R26 000. She said in the interim a Light Drive device could be attached to IDT's manual wheelchair, which might even be the preferred option in adulthood. She estimated the Light Drive cost at R50 000. In her second report (September 2015) she again recommended the Light Drive, the cost of which was now about R85 000. Depending on usage, terrain and IDT's growth rate, the system would need to be replaced every three to five years. Ms Jackson also recommended a pressure

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[73] Exhibit "AM" p 4 (R40 388 excluding VAT).

[74] R63 024 excluding VAT.

cushion which could be used on the manual and electric wheelchairs at a cost of R6000 – R10 000 with an average lifespan of two years.

[326] In her joint minute with Ms Scheffler, Ms Jackson said that she deferred to Mr Hakopian’s recommendations, a stance she maintained in oral evidence. I have remarked on the undesirability of such an approach by independent experts on matters falling within their expertise. At the time of the joint minute, what she was deferring to was Mr Hakopian’s recommended package costing R270 000, something which Mr Hakopian himself adjusted downwards very substantially when testifying.

[327] During Ms Jackson’s re-examination a quotation from Sitwell was handed up giving the current cost of the Netti (R70 219) and Light Drive (R84 075).[75]

[328] In her reports Ms Scheffler considered two kinds of powered mobility for IDT: a scooter or a wheelchair. Although the scooter’s ‘image’ might be more attractive for a teenager or young adult, it is in my view inappropriate for IDT, given his athetoid movements. Ms Lundy said that IDT was ‘fearless’. She thought a scooter would be dangerous for him as he might be tempted to go too fast.

[329] Regarding powered wheelchairs, Ms Scheffler did not in her reports list specific makes of wheelchair and their cost. What she gave was an estimated price range for locally manufactured electric wheelchairs. In her third report (November 2015) the range was R28 200 – R35 000. She thought a scooter or electric wheelchair would have a life span of eight years. As noted, Ms Jackson in the joint minute declined to enter into discussion with Ms Scheffler about wheelchairs.

[330] In oral evidence Ms Scheffler said that electric wheelchairs that could be considered and that were within her estimated price range were Cruiser, Medop and CE Mobility. Quotations were subsequently made available, the prices ranging from R27 898 to R48 051, excluding seating accessories.[76]

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[75] Exhibit “AB”.

[76] 11/311-316. I do not recall these being adduced as exhibits through Ms Scheffler.

[331] It is disconcerting for a judge to be presented with such divergent opinions. On this part of the case, as on some others, I thought Mr Hakopian's recommendations excessive. There were significant differences between the recommendations in his first and second reports. By the time he testified (only three months after his second report) he 'corrected' his pricing from R270 000 to R155 793. On the other hand Ms Scheffler did not provide precise information about the local wheelchair options. Her price range as at November 2015 was well below Mr Rademeyer's median price for local wheelchairs three years previously. The quotations subsequently furnished indicate an upper range well in excess of what she said, even before taking accessories into account. I am left with the uncomfortable sense that Mr Hakopian and Ms Scheffler would not necessarily have provided the same opinions if they had been briefed by the other side. This is not to say that there was conscious bias; but an expert engaged for a particular party is at risk of a mind-set which views the case from the outset from that party's perspective. A judge is not assisted where other experts in the case, who could have provided their own views, instead defer to a single expert.

Mygo seat

[332] Since my decision on the Mygo seat may affect the choice of wheelchair I deal with it first. It is an expensive item at R46 624. The recommendation came at a relatively late stage in the day, and only from Mr Hakopian. The Mygo he recommended, Size 2, comes standard with shoulder rests and headrest. He acknowledged in cross-examination that IDT did not strictly require either of these features. His main reason for promoting a Mygo seat was to give IDT a more stable base. He said softer seats can result in unwanted spine movements. He also testified that the seat can be set to keep the legs symmetrically apart, which assists in stabilising the upper body. He had, however, decided against selecting restraining components above the hip.

[333] Ms Scheffler disagreed with the Mygo recommendation. She said it would typically be used for GMFCS IV and V patients who need a lot of upright postural support, particularly to improve head and neck support. One did not want to put IDT 'in a straitjacket'. Too much seating support would detract from his functioning. His

trunk is key to his balance reactions which in her opinion are quite good. These balance reactions promote distal function. One should strive to improve his functioning by maximising his ability to use his trunk.

[334] In cross-examination she was referred to Mr Hakopian's testimony that with the Mygo seat IDT's thighs could be positioned out at an angle (abducted) so as to have him sitting on a more triangular base. She was referred to the part of the Mygo brochure dealing with leg and foot positioning.[77] She agreed that abduction might provide a larger support base but said that to abduct a patient's thighs when he is able to maintain a neutral position is contrary to the principle of neutral postural support which is a matter of basic bone mechanics.

[335] She disagreed that the Mygo brochure suggested otherwise. The Mygo brochure was dealing with leg guides for patients with deformities. In my view Ms Scheffler was correct. The part of the brochure to which she was referred was headed 'Leg and Foot Positioning Challenges'. A patient's pelvis/thighs might be in a deviant position due to contractures, eg one leg might be abducted and the other adducted ('windsweeping' - both legs twisted to the right or left); or both legs might be adducted (each thigh pointing outwards); or both legs might be abducted (each thigh pointing inwards). In such cases the Mygo seat can be set up to accommodate the deviation though one would still try to get the user as close to neutral as possible. Since IDT does not have contractures and since his pelvis and thighs can be placed in a neutral position, one would not deliberately set up the seat to place him in a deviant position. (Her view that IDT's pelvis and legs can be placed in a neutral position accords with Prof Dunn's opinion.)

[336] She was also referred to Mr Hakopian's evidence that the Mygo's side panels offer good trunk support, thus giving IDT maximum hand function. It was put to her that the side panels would not have to be permanently in place, ie could be removed when they were inhibiting him. She said that the Mygo's side panels were not quick-release features, it was quite 'finicky' to take them on and off. Providing trunk support in her view would not prevent his athetosis distally; it would just inhibit his

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[77] 12/211-212.

trunk balancing and reaction function. She was shown a photograph of the side panels (‘flip away laterals’) in the Mygo brochure[78] and it was suggested to her that these did not seem to be ‘finicky’. She replied that the side flaps can be opened out to allow the user to get in and out of the seat but that the panels are not taken on and off. Once the patient is seated, one could not leave the flaps open since this would inhibit movement of the user’s arms - the side panels did not flip back all the way, certainly not more than 90°.

[337] In general I found this part of Ms Scheffler’s evidence quite convincing.

[338] All in all, I have been left in considerable doubt as to whether the Mygo seat is a reasonable expense for which the defendant should have to bear the burden. I do not think the plaintiffs have discharged the burden of proving this item.

Powered wheelchair

[339] The disallowance of the Mygo seat raises a question about the suitability of the Ottobock products at the present time. The smallest Ottobock seat width is 38 cm or 15″.[79] Ms Scheffler testified that this was way too big for IDT. His current Pacer, I note, is a 10″ chair.[80] For the next six years I thus intend to allow an amount of R48 000 for one 12″ powered wheelchair. This would cover the cost of the Medoc 12″ machine or the Pacer 12″ machine with accessories.[81]

[340] As from age 13, by which stage I assume that a 15″ chair will have become suitable for IDT, I have concluded that I should allow the cost of the B400 (R46 043) and certain of the accessories mentioned in the Ottobock quotation, exhibit “R” (R32 951 – see below). With regard to the chassis, the specifications of the B500 do not hold any significant advantages over the B400. IDT is unlikely ever to exceed the load capacity of the B400 (+ 96 kg). There is a minimal difference in turning radius. Particularly since IDT will use the powered wheelchair for community mobility rather than in the home, this difference is of no consequence. On the assumption

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[78] 12/215.

[79] For the B400, see “U”.

[80] See 11/97e.

[81] See 11/316 and 11/312.

that the B400 has a range of 25 km as against the 30 km of the B500, this is not problematic because I do not think IDT will ever need to travel more than 25 km without opportunity for recharging the battery. Any inconvenience arising from the fact that the B400 takes two hours longer to recharge can be avoided through sensible planning.

[341] The plaintiffs' counsel pointed out that the B500 is not the most expensive of Ottobock's wheelchairs, reference being made to the ParaGolfer, Superfour and C2000.[82] I do not have evidence about the nature and purpose of these machines and whether they are wheelchairs as conventionally understood. In any event the reason for my rejection of the B500 is not that it is the most expensive chair but that it exceeds IDT's reasonable requirements.

[342] It appears that cheaper local products than the B400 are available, though if Mr Rademeyer's 2012 median were updated such cost might not be much less. More importantly, the powered wheelchair is going to be IDT's most important mobility device. Quality, reliability and ease of use are important. Ottobock has a very good name, as Ms Scheffler agreed. She also said that their prices had remained stable in the face of exchange rate fluctuations because they had a business located in South Africa.

[343] However, the replacement cycle must take account of the fact that I am allowing a reasonably high-quality machine. Mr Rademeyer thought that a local product would have a life-cycle of ten years. In the light of the other evidence, that may be optimistic. On the other hand a five-year cycle seems too short. I think seven years (one year less than Ms Scheffler's suggested replacement cycle) is fair until the end of the cycle during which IDT reaches his 40th birthday. Thereafter, and for the same reasons as before, increased use will shorten the life span which I would thus reduce in that period to five years.

[344] In regard to accessories, all of those included in the Ottobock quotation seem reasonable apart from the electric lighting and rear marker plate. Ottobock's product

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[82] Exhibit "AM" p4.

code says that electric lighting is ‘required for road traffic permit’ and that the plate is ‘required in Germany for road traffic permit’. There was no evidence about South African requirements and nothing to suggest that IDT would use his powered wheelchair in a setting regulated by road traffic laws. Excluding these two extras, the Ottobock accessories amount to R32 951. This gives a total cost for the chassis and accessories of R78 944.

[345] The B400 offers some postural support. I have already referred to Ms Scheffler’s evidence that wheelchair seating can be customised relatively inexpensively using foam, rubber and glue. Ms Scheffler said she kept substantial stocks of these and other such materials at her premises. The cost of all anticipated adaptations (not just for the electric wheelchair) was not expected to exceed R500 p/a. She also said that a basic foam positioner cushion would suffice for his wheelchair at a cost of R300 p/a. I think it would be reasonable to make provision for the same foam cushion, waterproof cover and pelvic restraint as have been allowed as accessories for the Pacer at a current cost of R946[83] with a three-year replacement cycle to age 40 (the reason for this cut-off age appears from the next two paragraphs). I do not propose to make any separate allowance for the modest cost of customisation. I also do not intend to allow a second Tess Back. My understanding is that it can be used with a wide range of wheelchairs. IDT could thus use it with the B400 or the Pacer as desired.

[346] Ms Jackson recommended a pressure cushion. This is not for postural support but to prevent pressure sores. Ms Jackson testified that because of his skinniness and altered weight-bearing pattern due to pelvic obliquity IDT was at risk of developing pressure sores when sitting in the wheelchair for long periods. Ms Crosbie also recommended such a cushion. This view was challenged in cross-examination on the basis that Dr Botha would say that athetoid patients are not at increased risk of pressure sores. Dr Botha was not, however, called as a witness. Although I have accepted Prof Dunn’s opinion on the absence of pelvic deformity, it is not in dispute that IDT tends to sit with his left pelvis raised. Even if this is not a deformity, it may contribute to discomfort.

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[83] 11/311.

[347] The plaintiffs do not claim the cost of pressure cushions, presumably because this concern would have been addressed by the Mygo seat. Since I have disallowed the Mygo, it is reasonable to include the cost of pressure cushions from age 40 when IDT will be using the wheelchair more often. The same pressure cushion could be swapped between the B400 and manual wheelchair as desired. An average price of R8000 is reasonable. Ms Jackson said that the cushion would have an average life span of two years depending on usage and would become more of a necessity as IDT spent more time in the chair. A three-year replacement would in my view suffice. The pressure cushion allowance will be in substitution of the seating allowance of R946 (which will apply until age 40).

[348] In regard to maintenance, the plaintiffs claim R5500 p/a. In November 2012 Mr Rademeyer estimated annual maintenance costs at 8%. On a total cost of R48 000 for the Omega/Pacer and R78 944 for the B400, this would yield R3840 p/a and R6320 p/a respectively. Ms Scheffler in her third report spoke of an annual allowance of R2000 every two years for ‘tyres and incidentals’. However I do not recall Mr Hakopian or Mr Rademeyer being cross-examined about maintenance rates. The amount of R5500 represents about 7% p/a. Particularly since I am assuming a longer replacement cycle than the plaintiff’s’ experts, this is reasonable for the B400. I will allow R3360 p/a for the maintenance of the Omega/Pacer. These amounts should be allowed in every year other than replacement years.

[349] In her report of September 2015 Ms Jackson said that batteries (I think she was talking about the Light Drive) would cost R15 000 p/a. In his report of November 2015 Mr Hakopian said that the B500’s batteries would cost R9300, which is the basis of the plaintiffs’ claim. Ms Scheffler said that batteries for the range of electronic devices she considered would amount to R2200 p/a. That is the sum I will allow for batteries for the Omega/Pacer, ie until IDT reaches his 13th birthday. Thereafter I must allow a reasonable cost for batteries for the B400. The cost of the B500’s batteries was not challenged. It is reasonable to assume that the batteries for the B400, with its less rigorous specifications, are cheaper. The best I can do is to assume that the B400’s batteries are less expensive by the same ratio as the

chassis, namely 66%.[84] On that basis I will allow R6138 p/a for batteries as from IDT's 13th birthday.

<u>Walking devices [items 50 and 56 of "POC 1"]</u>

[350] The plaintiffs claim the cost of a Nurmi Neo posterior walker ('Nurmi') at a current cost of R17 500 to be replaced every three to five years until age 35; and a 'Pacer with prompts' at a current cost of R65 000 to be replaced every five years as from the age of 40. (I assume that on this basis the last posterior walker will be obtained when IDT turns 35 and that it will be replaced with the Pacer when IDT turns 40.) These claims are a combination of Mr Hakopian's recommendation of a posterior walker for life and Ms Jackson's recommendation of the Pacer from age 40.

[351] In argument the plaintiffs' counsel submitted that provision should be made for three Nurmi posterior walkers for IDT's 'occasional use' between now and when he turns 40 (ie an immediate acquisition and two replacements). This assumes a replacement cycle of 10 years. They further submitted that one PGT would suffice (ie it would last for the rest of IDT's life – on my finding, 15 years).

[352] There is an image of the Nurmi posterior walker in Mr Hakopian's second report.[85] It is a device with a frame and four wheels. The lateral frame of the machine is behind the user. There is no lateral bar in front. The user's hands would be more or less at his sides when gripping the handlebars.

[353] The 'Pacer with prompts' is not the Pacer wheelchair previously mentioned but a Pacer Gait Trainer ('PGT'). There are images of it at 12/190-192. Although Mr Hakopian said that the second image at 12/192 was a posterior walker and that the other images showed a gait trainer, my understanding is that it is the same device which can be adapted for use as a posterior walker.

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[84] R46 043 as against R69 941.

[85] 6/605-606. See also 12/245.

[354] In his first report (April 2013) Mr Hakopian recommended a Flux walker with pelvic support, at that stage costing R19 687.[86] In "POC2" this device is mentioned as an alternative to the Nurmi. According to Mr Hakopian's second report (November 2015) the current cost of the Flux, which he mentioned as an alternative to the Nurmi, is said to be R22 000. In his first report Mr Hakopian said that the Flux was a sturdy walker which would improve IDT's posture and balance and make walking possible. In his second report Mr Hakopian said that it was not necessary for IDT to use the walker at all times as he was able to walk short distances unassisted and longer distances by holding onto furniture and walls. From age 25 he thought IDT would become a 'therapeutic walker' and use a posterior walker more frequently. His recommendation was that the Nurmi or Flux be obtained for IDT for life with a replacement cycle of three to five years.

[355] Ms Jackson's opinion does not seem to have changed materially in her two reports (April 2013 and September 2015). One difference was that when she first saw IDT she considered he could benefit from a paediatric rollator (relatively inexpensive at R900 with a two-year replacement cycle). In the later report she said that IDT was now walking without an aid but that as he got older he would probably need mobility aids. She estimated that about halfway through his expected life (which she thought would equate to an age of about 25) he had a 50% chance of needing walking aids for indoor mobility, this chance rising to 95% three quarters of the way through his life (which she said would be in his early 40s). She thought the PGT would be the safest option for him at that stage at a current cost of R65 000 for a medium adult size. The replacement cycle would be two to five years depending on usage.

[356] It will thus be apparent that Mr Hakopian's recommendation for a posterior walker (or any kind of walker) prior to IDT's mid-20s is at odds with Ms Jackson's second report. Even in regard to later years, Ms Jackson's assessment was that for some years there was only a 50/50 chance that IDT would need walking assistance. But the device she recommended cost nearly four times more than Mr Hakopian's walker.

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[86] For an image of the Flux, see 12/246.

[357] Ms Scheffler disputed these recommendations. In her first report (April 2013), compiled when IDT had just started walking with a rollator, she observed that he was not yet able to manipulate the rollator or turn around independently. She thought the best solution was a Kaye posterior walker, the benefits including a more upright posture with resultant better postural control and balance, easier negotiation of turns and corners and the absence of a barrier between the user and his environment (ie no lateral bars across the front of the machine). The Kaye would cost R4000 – R7000 as the size increased, with three replacements during his growing years and an eight-year replacement cycle thereafter for life.

[358] In her second report (September 2014) she said that IDT now walked independently and preferred to use the walls and furniture for stability. She thus no longer recommended the reverse walker. However for longer outdoor distances IDT might, she felt, benefit from a rollator with large castors. Although he was likely at first to use it only occasionally, he might become more dependent on it as he got older. The cost of a rollator was R1300 with a replacement cycle of eight years.[87]

[359] She also recommended a standing frame for IDT. Although this is not a walking device, it is convenient to deal with it here. The plaintiffs' experts did not in their reports recommend a standing frame and there is no claim for one. Ms Scheffler reported, however, that standing was essential for the development and growth of the lower limbs and spine. A standing frame would be used for 'therapeutic standing' and would only provide knee and ankle support and a working surface. The frame would cost R1300. Two replacements over the course of IDT's life would suffice.

[360] Ms Scheffler's views remained essentially unchanged in her third report of November 2015 though for reasons not stated she only recommended the rollator to age 30 and reduced the replacement cycle from eight years to five years. Its current cost, she said, was R1320. The standing frame's current cost was now R2700.

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[87] Images of the type of rollator she had in mind are at 12/247-249.

[361] In the joint minute between Ms Jackson and Ms Scheffler the former adhered to her PGT recommendation for the last 10 to 15 years of IDT's life while the latter reverted to her recommendation of a rollator for life. Ms Jackson said that she agreed that a rollator should be provided but only when IDT reached the age of 14 (and presumably to be discontinued when the PGT was acquired). Mr Jackson also supported Ms Scheffler's view that IDT should have a standing frame.

[362] In oral evidence Mr Hakopian said that it would be better for IDT to have a posterior walker than a rollator. A posterior walker would keep IDT more upright. A rollator would cause hip flexion because IDT would tend to lean on the device. One also wanted to encourage IDT to engage with the world which is better achieved with a posterior walker which has no lateral barrier in front of the user. He anticipated that IDT would mainly use the posterior walker outside of the home. In public areas, for example, it would prevent him from being bumped and becoming unbalanced.

[363] It was put to him that Ms Scheffler would say that a posterior walker is for children with increased flexor tone such as one sees in spasticity. He riposted that what she was proposing (a rollator) was generally used for geriatrics.

[364] He acknowledged that the Nurmi was an imported walker. I asked him why there was no local alternative. He replied that local manufacturers perhaps did not see sufficient opportunity in the paediatric market. It was then put to him by the defendant's counsel that according to Ms Scheffler local posterior walkers were available. He said that he was not aware of them but that it was important that the walker should be sufficiently durable for outdoor use.

[365] On this latter aspect, Ms Scheffler during the course of her evidence referred to a pricelist of walkers supplied by Presta. The locally manufactured posterior walker costs R938 for all sizes while the imported model ranges in price from R3299 – R4034 depending on size.[88] She testified, however, that the key indicator for a posterior walker as against a rollator was if the use of the latter would cause the

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[88] 11/248-250.

user to lean over it in forward flexion, as would be the case for example in patients with spastic paraplegia. In such cases the posterior walker would have the beneficial effect of requiring the patient to straighten his back. She testified that a posterior walker was generally used in indoor settings and would be suggestive of a patient at the GMFCS III level. (I have already determined that IDT is a GMFCS II.) She acknowledged that for outdoor use the ‘standard’ posterior walker (I think she was referring to those depicted in the Presta pricelist) would not be appropriate since its wheels are too small.

[366] She recommended a posterior walker in her first report because at that time IDT did not have enough trunk control to stay upright. He thus needed a walking device for weight-bearing. When she saw him subsequently he could stand up independently and only needed a walking device as an aid for balance and safety. In outdoor settings the rollator in her view would provide similar support to the walls and furniture he uses indoors. I asked whether a rollator would not encourage IDT to be ‘lazy’ and hunch over it. She replied that this was not so: to lean forward and bear weight on a rollator is not an easier or lazier option than walking upright and using the rollator just for balance and safety.

[367] In regard to the PGT, she said this was a full-body-support walker which IDT did not need. Typically a PGT would only be used for a patient at level GMFCS IV or V.

[368] Ms Jackson’s recommendation, as previously noted, did not accord with that of Mr Hakopian. In regard to the PGT, she said that IDT might not need all the ‘prompts’. She testified that the PGT supports the user more from the front than the back. In her experience CP patients could be nervous if they did not have support in front of them, particularly as they got older.

[369] In regard to Ms Scheffler’s recommendation of a rollator, Ms Jackson said the disadvantage was that the user had to be able to grip the device’s handles. She said that the school physiotherapist feared that a rollator might make IDT ‘too adventurous’. When this was taken up with Ms Scheffler, she said that IDT had enough muscle strength and stability to hold onto the rollator and that there was no

danger of his losing control of it. He had shown an ability to use one during 2013/2014 when he was learning to walk.

[370] Ms Jackson also said that she doubted whether IDT would use a rollator. He wanted to walk independently and one should not force him to use a walking aid. I think Ms Jackson's observation about IDT's preference is probably sound, and it applies as much to the likelihood of IDT's using a posterior walker as a rollator. This is no doubt why Ms Jackson only foresaw the possible need for a walking aid as IDT's mobility declined in later years. It seems that IDT stopped using a walking aid prior to September 2014. I do not know whether the rollator he previously used is still in the family's possession (there is no claim for one as a past expense). If IDT wanted and needed a walking aid, I would have expected that he would either still be using the rollator or that a posterior walker would have been acquired for him. Even the Nurmi could comfortably have been funded from the interim payment.

[371] In assessing the question of a walking aid for IDT, I take into account that IDT will have a good quality electric wheelchair and a backup manual wheelchair. These are likely to be his main methods of community mobility. Indoors he will probably prefer to manage without a walking aid. He is thus unlikely to use one extensively. If in his later years he becomes less mobile, which I have found likely, it is the wheelchairs rather than walking aids which will be called into more frequent use. Indeed I have taken this into account in their replacement cycles.

[372] I have thus come to the conclusion that the plaintiffs have not made out a case for the cost of the Nurmi posterior walker or the PGT. On the other hand it is reasonable that IDT should have some alternative aid on the occasions he prefers not to use a wheelchair. Since Ms Scheffler and Ms Jackson agreed in the joint minute that IDT would benefit from a rollator (though Mr Jackson thought it should only be introduced from age 14), I intend to allow the cost of this device. I do not think it matters that the plaintiffs have not claimed this in the alternative. If I reject the more expensive options because something simpler is adequate, the cost of the latter should be allowed by way of substitution. The five-year cycle proposed in Ms Scheffler's third report is reasonable, given that the rollator will be a third-tier mobility option.

[373] I do not recall Ms Scheffler's estimated cost of a rollator (R1320) being challenged. Ms Scheffler's maintenance cost of R500 p/a is excessive (38% p/a – on this basis it would be cheaper to buy a new rollator every three years). I will allow R130 p/a except in replacement years.

[374] Although the walking stand, like the rollator, is not claimed by the plaintiffs, I am again inclined to allow it in partial substitution for the plaintiff's claims under items 50 and 56 of "POC1". (When I raised this possibility with Ms Bawa in argument she did not resist.) There seem to be benefits IDT can derive from therapeutic standing. And the better he can stand, the better he is likely to walk. I will thus allow an additional amount of R1300 in accordance with Ms Scheffler's third report. There will be two replacements evenly spaced over the rest of IDT's expected life. Since the standing frame is a static device, a more frequent replacement cycle does not appear justified. Ms Scheffler allowed R200 p/a for maintenance, which does not strike me as parsimonious, so this should be allowed other than in replacement years.

Foot orthoses and related items

SMO and straps [items 52-53 of "POC1"]

[375] Because IDT has pronated feet and unstable ankles, the experts concurred that he needed some form of foot orthotics but there were differences as to the best solution. The parties have now agreed that the cost of providing IDT with an ankle foot orthotic ('AFO') of the SMO type (supra malleolar orthotic)[89] should be allowed at a cost of R10 779. They have also agreed that the SMO requires straps which cost R370. The remaining dispute in respect of these claims is the replacement cycle. The plaintiffs allege that the SMO should be replaced annually for life and the straps every six months for life. (As IDT gets heavier the SMO will be superseded by an articulated AFO but my understanding of the parties' agreement is that the cost of R10 770 will be treated as appropriate for life. I was not addressed on possible differences between the lifespan of the SMO and articulated AFO.)

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[89] See image at 6/602.

[376] In his report Mr Hakopian recommended an annual replacement cycle for the SMO and a six-month replacement cycle for the straps. Since the defendant's experts, Ms Scheffler and Mr Brand, were recommending a different type of orthosis they did not address the SMO's replacement cycle. The replacement cycles would not necessarily be the same. What Ms Scheffler and Mr Brand recommended was a soft ankle brace and shoe inserts. If IDT were barefoot, the ankle brace would remain in place but the shoe inserts would not be used. The SMO is a more rigid integrated orthotic which runs from just above the ankle bone over the heel and foot but leaving the toes open. It will remain in place when IDT takes his shoes off.

[377] In the joint minute with Mr Hakopian, Mr Brand agreed with the SMO recommendation and the cost. They agreed that the replacement cycle would be one to two years for life. In oral evidence Ms Scheffler, while not agreeing with the solution, accepted that this was a reasonable replacement cycle for the SMO.

[378] Mr Hakopian was asked in cross-examination whether replacement would not become less frequent if IDT were to be less ambulatory in the last 10 to 15 years of his life. He replied that IDT would still be standing in a standing frame (though, as noted, the plaintiffs did not claim a frame). Although there would probably be less wear and tear from use, there might be offsetting wear and tear if his feet were to become thinner and more bony. Mr Hakopian found this difficult to predict.

[379] In argument the plaintiffs' counsel submitted that it would be reasonable to allow replacements as follows for the SMO: twice p/a to age 18; every 18 months thereafter to age 25; every two years thereafter to age 40; every three years thereafter to the end of his life. The defendant proposed a one- to two-year cycle to age 18 and a three-year cycle thereafter.

[380] The SMO is likely to suffer the most wear and tear while IDT is a child. He may often have his shoes off without removing the SMO. I think it reasonable to allow an annual replacement cycle until he reaches 18, this being at the one end of the range agreed by Messrs Hakopian and Brand. Since IDT acquired his first SMO

in May 2016[90] the replacement cycle will run from 1 June 2016. From the first replacement after his 18th birthday a two-year replacement cycle will begin. I have found that IDT is likely to become less mobile from about age 40. On balance this is likely to reduce wear and tear on the SMO. Although the change may be gradual, it would be reasonable to allow a three-year replacement cycle as from the first replacement occurring after his 40th birthday.

[381] In the absence of evidence to the contrary, I accept the six-month replacement cycle for the straps as recommended by Mr Hakopian. Indeed in argument the defendant's counsel accepted this. The main cause of wear and tear of the straps will be the daily process of fastening and unfastening rather than activity. The six-month replacement cycle will thus apply throughout IDT's life except that in SMO/AFO replacement years only one set of straps will be allowed (six months after the SMO/AFO replacement date). Again the cycle will run from 1 June 2016.

Special shoes [item 54 of "POC1"]

[382] The plaintiffs claim the cost of supplying IDT with Easy Up footwear at R2650 per pair with an annual replacement cycle for life. Arising, I think, from something I raised with Mr Hakopian, the plaintiffs have reduced this claim by 50% as an allowance for ordinary footwear which IDT would have needed but for the special shoes (described in argument as a 'robust deduction'). The defendant denies that there is any need for special footwear.

[383] The main features of the Easy Up shoe[91] are described thus by Mr Hakopian: rear opening for easy foot insertion; extra width and depth which allow for use with orthotics; and a Boa closer system. The first and third of these features will enable IDT to take his shoes on and off with relative ease using only one hand. The extra width and depth will accommodate the SMO.

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[90] 11/304-310.

[91] See image at 6/603.

[384] Ms Scheffler did not offer an opinion as to whether a special shoe would reasonably be required if IDT were using an SMO. Mr Brand in oral evidence said that normal shoes would be worn. One would not, he said, want a stiffer shoe which restricted movement. I do not recall that this was put to Mr Hakopian. What was taken up with him was whether IDT should have a rigid orthotic at all (the SMO).

[385] Mr Hakopian testified that, given IDT's uncontrolled movements, a special shoe with its easy closing system would be best. He said there were at least four companies which manufactured this type of footwear. His cost estimate of R2650 per pair was probably at the high end of the price range. The cheapest might be about 40% less. This suggests that the mid-range would be about 80% of his cost estimate, ie R2120. Mr Hakopian was not in favour of cheaper shoes which had a more flexible sole. When it was suggested to him in cross-examination that orthotic shoes might have a social stigma, he replied that the shoes he was recommending were quite attractive and that other children often envied them.

[386] On balance I think it would be reasonable for IDT to be supplied with the Easy Up, both to accommodate the SMO and for ease of use. Although there might be cheaper options available, the specifics were not explored. The defendant's main point was that special shoes were not justified at all. I thus accept the cost of R2650.

[387] On my understanding IDT would wear the SMO, and thus the special shoes, most of the time. He would probably want at least one other pair of more fashionable 'ordinary' shoes for special occasions. He will be saved the expense of the other ordinary shoes he might reasonably have been expected to have were it not for his impairments but I think the 50% deduction on this count is reasonable. It follows that the net allowance will be R1325.

[388] As to the replacement cycle of the Easy Up, IDT will quite often be in his wheelchair. He will certainly never be a long-distance walker. I am allowing the cost of a high-quality shoe. A two-year replacement cycle to age 18 (to allow for growth), a three-year cycle thereafter to age 40 and a four-year cycle from 40 (the era of reduced mobility) would be fair.

Special socks [item 55 of “POC1”]

[389] In line with a recommendation by Mr Hakopian, the plaintiffs claim the cost of special ankle-high socks at a cost of R185 per pair and on the basis that IDT will need four pairs every six months. (Mr Hakopian in his November 2015 report actually recommended three pairs every six months.) Mr Hakopian described the special socks as ‘seamless, wrinkle free, with moisture wicking and anti-microbial properties’.

[390] In oral evidence he said that the SMO has less ventilation than an ordinary shoe. Furthermore the movement of socks could irritate the skin. IDT is known to be touch-sensitive. He acknowledged that ordinary socks were used with such patients until relatively recently but with the development of special socks he now recommends them. It was put to him that Mr Brand has never prescribed special socks, regardless of the patient’s socio-economic circumstances (Mr Brand confirmed this in his evidence). Mr Hakopian replied that there are many orthotists who would not prescribe them and many others who would.

[391] I am not persuaded that special socks represent a reasonable expense for which the defendant can be held liable. Apart from the fact that the case for their advantages is marginal, IDT would have required ordinary socks in his uninjured state. The difference in cost between a reasonable quantity of ordinary socks (including sports socks) and the three or four pairs of special socks recommended by Mr Hakopian is likely to be minimal.

[392] This item is therefore disallowed.

Car transportation seat [items 67-68 of “POC1”]

[393] The claims relating to the (additional) cost of a vehicle to accommodate IDT’s wheelchair, ramps and ancillary transportation expenses have been settled subject to LE [items 125-128 of “POC1”].

[394] What remains in issue is IDT's need for a special car seat. The plaintiffs claim the cost of a Recaro transportation seat at a cost of R27 720 with a four-year replacement cycle during IDT's growth phase and a seven-year replacement cycle thereafter.

[395] The claim for the Recaro is based on Mr Hakopian's first report of April 2013. In that report he described the seat as having

> 'adjustable lateral thoracic pads, height adjustable head support, 5-point belt with reinforced abdominal/pelvic pad and table'.

He said that these components would maintain IDT's spine in an upright position while the rotational base plate would assist with easy transfer in and out of the seat.

[396] In his second report of November 2015 Mr Hakopian said that for safe travelling IDT should be restrained in a transportation seat for special-needs children. The seat should have

> '5-point harness, well contorted head support, table/upper extremity support, rotational base for easy transfer in and out of the seat'.

These features, which seem much the same as those of the Recaro, were now said to be met by the Panda Easyfit car seat at R54 150 or the SPL car seat at R65 300. No explanation was given for the apparent jettisoning of the Recaro at about half the price. It could not have been weight considerations because Mr Hakopian testified that the limits were 36 kg for the Panda, 50 kg for the Recaro and 70 kg for the SPL.

[397] In the same report Mr Hakopian recommended that IDT should also have a B & S car restraint at a cost of R5500. This is a five-point harness which can be used with an ordinary car seat or child booster seat. Mr Hakopian said that this restraint would be used when the specialised car seat was not available.

[398] In her first report of April 2013 Ms Jackson recommended that until IDT was large enough to use an ordinary safety belt he should have a special car seat. She recommended a Patron Monterry Sam car seat at a cost of R25 000 with a five-year lifespan. This seat had tilt-in-space capacity, head support and a swivel base to facilitate getting the child in and out of the seat. Once IDT was large enough, Ms

Jackson recommended the B & S restraint system at a cost of R4500 while he was a teenager and R5500 in adulthood. The replacement cycle would be five to seven years depending on usage.

[399] In her second report of September 2015 Ms Jackson again recommended a specialised car seat until IDT was large enough to use the B & S restraint. She did not repeat her previous specific recommendation but said it would be reasonable to allow an expense of 'up to R65 000' for a seat with a lifespan of five years. She did not explain why 'up to' this sum should be allowed if, as her first report suggested, there was a suitable special seat at a significantly lower price. Her upper limit happens to have accorded with the top end of Mr Hakopian's recommendations in his report of November 2015.

[400] In her first report of April 2013 Ms Scheffler said that a 'postural support car seat' would provide IDT with the 'required postural support for sitting safely and independently in a vehicle'. The chair, at a cost of R3100, should be able to be adjusted for the required degree of support. She thought he would only need this support during his primary school years, which meant that there would only have to be one replacement.

[401] By the time she assessed IDT in September 2014 she had come to the view that he no longer needed a postural support seat but she thought he would benefit from a booster seat for which no allowance was necessary because it was 'a normal accessory for young children to improve general safety'. She adhered to this view in her third report of November 2015. Mr Brand in his first report expressed agreement with Ms Scheffler's opinion.

[402] In June 2015, shortly after Ms Bester was appointed, she assisted in the purchase of a Safeway car seat from Game at a price of R1294.[92] According to Ms Bester, this was for use in the facilitator's car. Ms Lundy confirmed that the seat was kept in her car. The defendant has agreed to this item as a past expense. Ms Bester testified that another car seat was bought for IDT in January 2016, from Makro. This

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[92] See invoice at 9/50.

was not an ordinary booster seat, it was for older children. She felt IDT needed more support because he was going to be travelling with his parents on a rare holiday. The cost of this seat, about R1200, has not been claimed as a past expense. However the defendant's counsel said that the defendant should be liable for both seats.[93] I think that is fair and I shall thus add it to the amounts allowed for past expenses (for convenience I will include it under item 40 of "POC2").

[403] It seems that for some months now IDT has been using an ordinary booster seat for routine travel with his facilitator. While I appreciate that Ms Bester may have felt the need to be conservative in expenditure pending the outcome of the litigation, I do not think that as an experienced occupational therapist she would have compromised IDT's safety.

[404] Ms Jackson thought that IDT should have a specialised seat until he was big enough to use a B & S restraint. In oral evidence she said that if there was an accident or the car braked suddenly, an unimpaired person could brace himself and control his trunk whereas IDT was compromised and needed added protection. She remained of the view, however, that once he had grown in stature the B & S restraint would suffice.

[405] Like Ms Jackson, Mr Hakopian in oral evidence considered that a special seat was indicated on grounds of safety. He acknowledged that IDT could sit upright on his own but said that in the event of sudden movement he would not be stable. It was put to him that IDT would be adequately protected by a standard booster seat. He insisted that special-needs children are not as stable as ordinary children and that additional head, chest and hip support was desirable. It was put to him that there was no literature to support the proposition that CP children were at greater risk of injury from car accidents if they did not use specialised seating. Mr Hakopian did not dispute this.

[406] Ms Scheffler in her evidence disputed the validity of this reasoning. She said that even unimpaired passengers cannot react sufficiently quickly to avoid injury

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[93] "DH14" para 157.

which is why cars have seatbelts. She felt that additional support was only indicated if IDT could not maintain an upright position. I asked her whether he would not nevertheless tend to lean over to his left side, a tendency he has shown in other settings. She said that this would not occur if he were seated on a stable base with back support from the car seat.

[407] When Ms Jackson's recommendation of a B & S restraint system was put to Mr Hakopian, he expressed the view that it would be useful backup to the specialised seat he recommended.

[408] The swivelling base of the specialised seats is indicated for users who have to be transferred by carers into and out of the car. The evidence indicates that IDT is able to get himself in and out of a car seat. There is no reason to believe that he will lose this ability.

[409] In regard to safety, all children, not only CP children, are vulnerable in motorcars. An unimpaired child has less strength than an adult, is more easily distracted and far less attuned to the dangers of the road. This is why booster seats are used by prudent parents who can afford them. If an ordinary booster seat is adequate, I do not understand the plaintiffs to contend that this would represent a cost recoverable from the defendant.

[410] However it seems to me as a matter of common sense that IDT's athetoid movements and tendency to lean to the left add a further layer of vulnerability. Road traffic accidents are all too common in this country. IDT is involved in daily commuting to and from school and therapy sessions. If he were able at this stage to use a B & S restraint, I would have regarded this as a sufficient safeguard. While the harness does not provide the pelvic and head support of the specialised seat, it would tend to hold the child upright. However Ms Jackson's view that he would need to grow in stature before he can use a B & S restraint was not challenged in cross-examination. I thus do not know that there is a paediatric version suitable for IDT's current stage of development.

[411] In all the circumstances, I will allow a specialised seat in the claimed amount of R27 720, being the cost of a Recaro, the lowest of the price options furnished in the reports of Mr Hakopian and Ms Jackson. Mr Hakopian did not express a view as to the life cycle of the specialised seat nor do I recall there being oral evidence on the point. In her first report Ms Jackson spoke of a five-year life cycle. IDT is now about 7½. If a specialised seat is obtained fairly shortly after delivery of my judgment, this should last him just about until his 13th year by which stage he will probably be able to start using the smaller B & S restraint (in her first report Ms Jackson distinguished between the 'teenage' size and 'adult' size). I will thus not make allowance for a replacement.

[412] The cost of a B & S restraint will be allowed as from IDT's 13th birthday. Ms Jackson expressed the view that this restraint system would have a life span of five to seven years. This estimate was not challenged. For calculation purposes a six-year replacement cycle for life should be used. The first B & S, to be acquired on IDT's 13th birthday, will be at the 'teenage' cost of R4500. As from IDT's 19th birthday, the 'adult' cost to be allowed will be R5500.

Floor seat [item 51a of "POC1"]

[413] The plaintiffs claim the once-off cost of R18 000 for a corner floor seat. This would mainly be for when IDT is sitting on the mat at school with the other children.

[414] Ms Jackson, on whose second report of September 2015 the plaintiffs rely, testified that when she observed IDT at the school in September 2015 she noticed that while sitting on the mat he struggled to keep still and to focus on the teacher. Ms Lundy was kept busy restraining him and could not use her hands to key-sign what the teacher was saying. Ms Jackson felt that IDT needed to expend his energy on learning and stimulation, not physical movement. A corner floor seat would give him better support and would free up his facilitator to sign for him. She thought this would make IDT more like the other children, commenting that he is 'different enough as it is'.

[415] Although Ms Jackson previously recommended that IDT get a replacement seat after four years, she said in oral evidence that children generally stop using the mat in Grade 4, at about age 9. Since IDT is already 7½, one corner seat would suffice.

[416] Ms Scheffler, who did not make any recommendation for a floor seat in her reports, disagreed with Ms Jackson's view. In the joint minute of December 2015, Ms Scheffler recorded that IDT could sit on the mat without support; alternatively, he could use his chair and table at home and at school. In oral evidence she elaborated, saying that children are always changing their positions on the mat. A floor seat would require IDT to sit upright with his legs splayed out in front. This was not appropriate in a classroom situation.

[417] It was put to her that Ms de Freitas, the private speech therapist, had observed IDT to become sluggish and tired during therapy. At these times he began to lean forward, which impeded the use of his AAC device. Ms de Freitas regarded posture as one of their greatest challenges and had discussed the possibility of a harness for upper body support. It was put to Ms Scheffler that this showed relative weakness in IDT's torso. She replied that his environmental setup was the important issue. The school had not reported a similar problem of posture. During the school visit she too had observed that Ms Lundy was holding IDT during storytime but she had taken this up with Ms Lundy, being of the opinion that it was unnecessary to hold him.

[418] Ms Hattingh and Ms van der Merwe reported as follows on their visit to the school in September 2015.[94] During storytime IDT and Ms Lundy sat about 1,5 m away from the other children. IDT was on her lap while she leant against a cupboard. He then sat on the carpet independently. Ms Lundy did not interpret any of the lesson content for him but prompted him to stay quiet and look at the teacher. IDT constantly fiddled with her jersey and hair. She did not intervene or provide 'external structure' when he got up and walked to the teacher. The authors reported that IDT was given to throwing tantrums when upset or overstimulated. The class

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[94] At 6/350.

teacher reported to them that IDT was often disruptive so that she had to stop an activity she was doing with the whole class. Communication with him was a major problem in class. He was easily distractible.

[419] These observations were put to Ms Lundy in cross-examination. She said she could not understand why the authors considered her not yet adept at facilitation but she was very keen to go on further courses and was not at all resistant to guidance from experts.

[420] Although Ms Scheffler may be right that IDT should at times be free to move as he pleases on the mat, it is clear that his posture and focus while the teacher is dealing with the class as a whole is problematic and detracts from Ms Lundy's ability to assist him with lesson content. The floor seat can be used judiciously to combat these problems. I will thus allow the seat at a cost of R18 000 (cost, as distinct from need, was not challenged in evidence).

Bath and shower chair [items 69 and 118 of "POC1"]

[421] Based on Mr Hakopian's reports, the plaintiffs claim the cost of a Leckey bath and shower chair at R16 000 with a three-year replacement cycle [item 69]. Alternatively, and based on Ms Crosbie's reports, they claim a shower/bath chair at a cost of R20 500 (the average of her R16 000 – R25 000 range) every five years [item 118].

[422] The Leckey chair (made by Ottobock) has adjustable back rest and leg support. It has a rolling base so that the user can be wheeled into the shower (provided the shower cubicle has been appropriately adapted). There is also a hole in the chair to facilitate washing from underneath. The chair Mr Hakopian recommended in his first report was an Ultima SS at R17 100. In his second report he updated this cost to R25 000 and added two alternatives: the Leckey at R16 000 and the Blue Wave at R15 000.[95] He estimated a five-year replacement cycle.

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[95] See the images at 6/611.

[423] Ms Crosbie's recommendations in her reports are similar. Her first choice was the more expensive Ultima supplied by Mr Hakopian's (former) company, GH Medical. In her second report she added the Leckey as an alternative. She also gave a five-year replacement cycle.

[424] In her first report Ms Scheffler recommended a shower chair with back rest to provide stability. She said showering was preferable to bathing as athetosis increases the risk of slipping. Even if a bath hoist were used, the caregiver would be in an 'ergonomically disadvantaged position'. She said the cost of the shower chair was R2000 with a five-year replacement cycle. It should be noted that at this time (April 2013) IDT was not yet walking.

[425] In her third report (November 2015) Ms Scheffler again recommended a shower chair with back rest. The cost was now said to be R750, apparently because of a price reduction. I note that in the second report of Ms Coetzer, the defendant's occupational therapist (who was not called), she recommended a shower chair at an estimated cost of R1750 (this was as at October 2014).[96]

[426] In his oral evidence Mr Hakopian said that the chair he recommended could be flattened for use in a bath or used as a seat in the shower. He regarded the Ultima and Leckey as superior to the Blue Wave because they are made of stainless steel rather than PVC.

[427] According to his mother, IDT mainly baths but sometimes showers. He climbs into the bath himself. He can wash himself though she assists to ensure thoroughness. She washes his hair. He operates the taps but needs to be supervised to prevent scalding. He loves toys in his bath. She needs to help him out of the bath because of the risk of slipping.

[428] When they were living with her parents the house only had a shower. In the Muslim community, she said, adults generally shower rather than bath because it is not regarded as appropriate to lie in 'dirty water'. Particularly in view of his physical

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[96] At 7/137.

challenges, they would encourage IDT to shower but not compel him to do so. He is able to shower by supporting himself against the wall. He sits down on the shower floor to soap himself. She thought a shower chair might be helpful. (During the evidence of Dr Choonara, the plaintiffs' expert urologist who happens to be of the Muslim faith, Mr Irish asked whether Muslims were prohibited from bathing. He said that he was unaware of any such rule and that he himself baths. I have no reason to doubt his answer. The customs of Muslim people in this respect is not an issue before me. I accept, however, that IB truthfully stated her family's view of matters and the mores prevailing in her community.)

[429] It was put to Mr Hakopian that IDT has been bathing and showering up to now without apparently needing a special chair. In regard to showering, it was put to him that IDT has sufficient mobility to get into the shower, even if the assistance of a carer were needed. He agreed. It was put to him that all IDT needed was a shower seat. He agreed. But when Ms Scheffler's recommendation was put to him, he said that IDT should be showering and bathing.

[430] IDT may as a child continue to bath but I think it probable that as he gets older he will, for reasons of practicality, safety and family preference, take to showering as a matter of routine. As a child he will continue to have the assistance of his parents or carer when he baths. If necessary a non-slip mat can be placed in the bath though Ms Bester said he does not currently use one.

[431] Insofar as showering is concerned, IDT's ability to walk independently, if necessary with the assistance of his rollator or carer, will make it unnecessary for him to be wheeled into a shower cubicle. All that is reasonably required is a seat with some back support to provide stability, particularly when he is soaping himself. I do not think that anything approaching the complexity and sophistication of the seats recommended by Mr Hakopian and Ms Crosbie is needed.

[432] Ms Scheffler's recent cost estimate of R750 for a basic shower chair seems to be on the low side and out of kilter with Ms Coetzer's estimate. Although I do not recall the question of cost being explored in oral evidence, in a trial of this length it may not be fair to expect every minor issue to be pursued. So as not to leave IDT

underfunded in respect of an important aspect of his daily living, I propose to allow R1500 as the cost of a shower seat every five years.

Physiotherapy [items 45-47 of “POC1”]

Introduction

[433] It is agreed that IDT requires physiotherapy. The principal expert witnesses on this issue were Ms Jackson and Ms Scheffler. Distinctions were drawn between the following types of physiotherapy: (i) immediate intensive physiotherapy to make up for the absence of adequate physiotherapy in the past; (ii) routine physiotherapy, distinctions being drawn between what IDT would require as a child and as an adult; (iii) physiotherapy following orthopaedic surgery and fractures; (iv) physiotherapy following acute illness; (v) cardiopulmonary physiotherapy; (vi) physiotherapy for arthritis, pain and fatigue; (vii) physiotherapy following soft tissue injuries.

[434] Although Ms Jackson recommended immediate intensive physiotherapy in her first and second reports, by the time of the joint minute in December 2015 (less than three months after the second report) she had come to the conclusion that IDT had sufficiently improved so as not to require intensive physiotherapy. The claim in respect of such therapy has fallen away.

[435] Ms Jackson and Ms Scheffler were more or less in agreement on the amount of physiotherapy IDT would need following major and minor fractures though Ms Scheffler thought that some of this could be taken from the allowance for routine therapy. Neither expressed a firm opinion as to how many fractures should be anticipated. The parties have subsequently reached agreement on globular amounts to be allowed for physiotherapy on the basis that IDT is likely to suffer two minor and two major fractures (items 42 and 43 of “POC1”).

[436] Although Ms Jackson in her reports recommended separate allowances for cardiopulmonary physiotherapy, physiotherapy following acute illness, physiotherapy for arthritis pain and fatigue, and physiotherapy following soft tissue injuries, these have now been subsumed within the claim for routine physiotherapy.

[437] The parties have agreed on a physiotherapy rate of R490 p/h which approximates Ms Scheffler's current rate. This is considerably less than the rate proposed by Ms Jackson in her second report of September 2015, which was over R1000 p/h inclusive of VAT.[97]

[438] IDT currently receives physiotherapy at school. This is covered by his school fees, in respect of which there is no claim (I was informed that this was on the basis that Paarl School's fees did not exceed the school fees which IDT's parents would probably have paid if he were unimpaired). The plaintiffs accept that the school physiotherapy must be deducted from the overall amount of appropriate physiotherapy in arriving at the amount for which the defendant is liable.

[439] It is common cause that IDT will only receive physiotherapy at school until he turns 13. The precise extent of the school therapy is not altogether clear. According to Ms Bester, IDT has one half-hour physiotherapy session per week. Mr Kruger, the principal, testified that although the school year comprised 42 weeks, some types of therapy were limited to 36 weeks because in the other weeks the therapists were involved as scribes for examinations and in assessments. I understood him to say, however, that physiotherapists were not involved in the examinations. The plaintiffs have assumed that IDT will receive physiotherapy at school over 40 weeks. This comes to 20 hours p/a. IDT probably does not get quite as much as this. Sometimes his physiotherapy is scheduled for 08h00 but he and Ms Lundy battle to get there on time. On other occasions, according to Ms Bester, IDT might lose up to ten minutes of a 30-minute session because of the time taken in walking between the classroom and the therapy room. In the circumstances the defendant cannot cavil at an allowance of 20 hours p/a for school physiotherapy.

[440] The amount of physiotherapy which IDT will reasonably require at any stage of his life cannot be predicted with precision. Both Ms Jackson and Ms Scheffler acknowledged this. There is nevertheless a disturbing disparity between the recommendations. I shall refer to a certain number of hours p/a while observing that

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[97] See 6/161 – 'up to' R920 excluding VAT.

neither Ms Jackson nor Ms Scheffler had in mind that physiotherapy would be evenly spaced throughout the year – there might be blocks of therapy.

Ms Jackson's recommended regime

[441] In regard to routine physiotherapy to age 18, Ms Jackson in her reports recommended 90 minutes per week. She did not say whether this was based on a 52-week year. The joint minute suggests she had a 46-week year in mind for intensive physiotherapy. If she was working on the same basis for routine physiotherapy, her recommendation amounted to 69 hours p/a. Although her reports did not mention a deduction for school physiotherapy, a deduction of 20 hours would have reduced the claim to 49 hours. As noted, in her reports and in the joint minute she recommended fairly substantial additional sessions for special types of physiotherapy.

[442] The amount now claimed for all physiotherapy (other than following fractures) is 40 additional hours p/a until IDT's 13th birthday and then 60 hours p/a until his 18th birthday. The increased allowance as from IDT's 13th birthday is based on an assumption that 20 hours of school physiotherapy will fall away.

[443] In her reports Ms Jackson also recommended two 'complex evaluations' p/a to age 18 at a higher charge than routine physiotherapy. The plaintiffs now claim one complex evaluation p/a to age 18 at R1000 per evaluation.

[444] In regard to routine physiotherapy in adulthood, Ms Jackson in her reports recommended 24-36 hours p/a and two annual evaluations. Again, she recommended a further allowance for special physiotherapy.

[445] The amount now claimed for all physiotherapy in adulthood (other than following fractures) is 36 hours p/a with no extra allowance for annual evaluations.

Ms Scheffler's recommended regime

[446] These reductions still leave a large gap between the plaintiffs' claim and Ms Scheffler's recommendations. In her first and second reports she offered a fairly wide range for routine physiotherapy. In her third report and in the joint minute her stated view for routine physiotherapy to age 18 was 36 hours p/a for six years and 24 hours p/a for six years. This was the view she maintained in oral evidence. Since this recommendation was not based on a view that IDT would need less physiotherapy as a teenager than currently, it is not clear to me why she did not simply recommend an average 30 hours p/a to age 18.

[447] In all three of her reports Ms Scheffler said that IDT's routine physiotherapy requirements to age 18 (ie the average 30 hours p/a) would be fully covered by the physiotherapy available to him at the school so that there was no additional amount for which the defendant was liable. That is clearly not so. In the joint minute she agreed that IDT needed more physiotherapy than the school provided. Based on a deduction of 20 hours p/a, Ms Scheffler's recommendation would give the plaintiffs a claim for 10 hours p/a to age 13 and 30 hours p/a thereafter to age 18. These amounts are respectively one-quarter and one-half of the reduced claims now advanced by the plaintiffs (the reduced amounts perhaps being less than Ms Jackson herself regarded as appropriate).

[448] For the period following IDT's 18th birthday, Ms Scheffler recommended 12 hours p/a from age 18-21 and thereafter six to eight hours p/a. She recognised that IDT might require additional physiotherapy in adulthood for arthritis, pain, fatigue and following soft tissue injuries. She indicated the hours which might be required per episode. She did not venture a firm opinion as to how frequently these episodes might occur but expressed tentative views of the relative risks based mainly on the McGinley paper previously mentioned.

[449] Leaving aside any additional allowance for special therapy, Ms Scheffler's recommendation of (a maximum of) eight hours p/a for adult routine physiotherapy is about one-fifth of the plaintiffs' claimed allowance.

Discussion

[450] How is a court to resolve these widely divergent positions? I did not find the oral evidence very helpful in explaining why one position rather than another should be adopted. It has not been suggested that precise factual findings on each difference that might exist between the experts in regard to IDT's actual condition (eg range of motion for various muscles, the extent of any 'fixing', the presence or otherwise of any element of spasticity etc) would provide a sure guide to the 'right' amount of physiotherapy.

[451] The best assistance for the court would be an expert's independent and objective clinical judgement, always acknowledging that there is no absolutely right answer. I regret to say that I am not convinced that on this part of the case I have received such assistance. I do not feel the assurance that Ms Jackson and Ms Scheffler would have expressed the same views if they had been briefed for the other side. This is not to say that either of them meant to mislead me. However I cannot but think that subconscious pro-client bias has caused the one expert to make recommendations at the top end of what might be defendable and the other to do the opposite.

[452] An appropriate amount lies somewhere between the two sets of recommendations. In determining the appropriate allowance one must not only consider the incremental benefit from more physiotherapy. It is also necessary to consider the totality of the interventions he will be receiving. Even if additional physiotherapy might in the abstract yield some additional benefit, he may simply not have time for it. IDT cannot be expected to live a life of constant medical interventions. The following are among the factors to bear in mind in the overall picture (this is based on matters the parties have agreed or, in the absence of such agreement, on my findings):

- IDT will be attending Paarl School to age 18. While at school he will receive some individual therapy. Private therapy needs to be accommodated outside of school hours.

- IDT's condition means that everyday activities like dressing, eating and washing take longer than usual.
- IDT will be assessed by a paediatric neurologist twice p/a until age 20 and once p/a thereafter. He will also be treated for ADHD (50% chance).
- IDT will probably be seen from time to time by a urologist. The parties have agreed that he will undergo two urodynamic studies in childhood.
- He will need to see an oral hygienist twice p/a and have dental treatment once every three years. (Presumably this is not all dental treatment but only the additional treatment caused by his CP.)
- IDT will be assessed once p/a by a dietician.
- IDT will see an audiologist four times p/a for life for tympanograms in order to assess and monitor middle ear infection, with possible referrals to an ENT specialist (50% chance). In respect of hearing aids, he will require annual comprehensive assessments and there will also be five hours of counselling to promote compliance (50% chance).
- IDT requires a once-off feeding intervention for 12 hours. There will be a two-hour feeding assessment every five years. There is also to be a facial desensitisation program.
- IDT will receive individual speech therapy throughout his life, starting at 92 hours p/a (to age 10), reducing to 80 hours p/a (10-13), 40 hours p/a (13-18) 20 hours p/a (18-25) and 10 hours p/a (+25). Some of this therapy (about half) will occur in the home. For the other therapy IDT and his carer must travel to the therapist, which will take additional time (there is an allowance for a 15 km round trip).
- Until he turns 18, IDT is also to receive 20 hours p/a of group speech/language therapy. This too will require travel.
- As to private occupational therapy, there will be a reducing scale: 30 hours p/a (to age 14) 12 hours p/a (14-20) and five hours p/a thereafter. There will also be in-depth assessments every two years. The parties' agreement in this regard does not specify to what extent therapy will take place in the home. Ms

Crosbie's evidence was that some therapy would be at the home, other therapy at the therapist's office. Time would have to be allowed for travel.

- The parties have agreed to allow hippotherapy (horse-riding therapy) until IDT reaches 18. This will be half-an-hour p/w seven months p/a (ie about 15 hours p/a). IDT and his carer will need to travel to the horse-riding venue.
- There are unresolved claims in respect of educational psychology and psychotherapy which, if allowed, would require substantial engagement between IDT and the educational psychologist. As will appear below, I will be allowing two sessions p/a of specialised psychotherapy during adulthood.
- There are also psychiatry claims. Although I intend to allow for some consultations with a psychiatrist, this will not add substantially to IDT's treatment burden.
- IDT will have home program for speech/AAC therapy, physiotherapy and occupational therapy. These programs will be conducted by Ms Lundy, IB or other carers. Quite how long they will take each day is unclear.
- Like any other child, IDT may need to see a GP from time to time.
- IDT will suffer the usual episodes of colds and flu and will thus not always be available for whatever therapy has been scheduled for the week.
- The parties have agreed that IDT will probably suffer two minor fractures and two major fractures, and for settlement purposes have treated these as occurring at age 17 (minor), 22 (major), 27 (minor) and 35 (major). Following each of the major fractures there is an allowance for 15 hours of post-operative physiotherapy. The fractures, whether major or minor, might make routine physiotherapy temporarily impossible or impractical.
- In childhood IDT needs time for recreation and holidays.

[453] In the immediate future, the agreed allowances for individual and group speech therapy, occupational therapy and hippotherapy come to 157 hours p/a. If one assumes that half of the individual speech therapy and occupational therapy will be done in the home, and if one allows half an hour for travel in respect of the remaining therapy (it would probably be more), there would be 86 additional hours

for travel. Based on a 46-week year (ie six weeks of ‘pure holiday’ for IDT), these therapies with their travel time will take up about 5¼ hrs p/w. Over and above this, there will be the less frequent but nevertheless time-consuming interventions (including travel) relating to neurology, urology, dentistry, diet, audiology, feeding and psychiatry. Then some time must be allowed for the home programs.

[454] Having regard (i) to other demands on IDT’s time, (ii) to the ranges recommended by Ms Jackson and Ms Scheffler, and (iii) to the fact that IDT might not consistently receive the full 20 hours p/a of school physiotherapy, I have concluded that until he reaches his 13th birthday there should be an allowance of an additional half-hour p/w based on a 46-week year. In practice IDT might receive this by way of a one-hour session every other week. The annual additional allowance will thus be 23 hours, ie over and above the school physiotherapy of 20 hours. (The additional allowance of 23 hours can be contrasted with the plaintiffs’ 40 additional hours and Ms Scheffler’s effective recommendation of 10 additional hours.)

[455] The above approach assumes a total of 43 hours p/a of physiotherapy, inclusive of school physiotherapy. There does not seem to be any basis for assuming that IDT will need less physiotherapy between the ages of 13 and 18. By then some of his other therapies will have become less demanding (speech and occupational therapy will have more than halved). I will thus allow 43 hours p/a of physiotherapy from IDT’s 13th birthday. My understanding is that IDT will remain at Paarl School until the end of the year in which he reaches his 18th birthday. Accordingly, and approaching the matter practically, I will grant the allowance of 43 hours until the end of the calendar year in which he reaches his 18th birthday. (This can be contrasted with the plaintiffs’ claim for 60 hours and Ms Scheffler’s recommendation for an average 30 hours.)

[456] As from the beginning of the calendar year in which IDT reaches his 19th birthday and until the end of the year in which he reaches his 40th birthday, I will allow half-an-hour per week based on a 52-week year (ie 26 hours p/a). Again, this could be received in one-hour sessions every other week. Because IDT will no longer be at school, there is less need for ‘pure holiday’. Alternatively he might receive the physiotherapy in more intensive blocks, something which the absence of

school will make feasible. In setting this allowance I take into account that apart from routine physiotherapy there may be occasions where physiotherapy is required because of soft tissue injuries, arthritis and the like. I have considered whether I should reduce the allowance of 26 hours in the fracture years. I think not – my understanding is that physiotherapy following fractures will be targeted at a specific problem. IDT’s need for general physiotherapy will remain and he will have sufficient time to allow for both routine physiotherapy and post-fracture therapy. (My allowance of 26 hours can be contrasted with the plaintiffs’ 36 hours. As noted, Ms Scheffler’s recommendations, inclusive of soft tissue injuries, arthritis etc, have not been precisely quantified but might come to an effective 15 hours p/a.)

[457] I have assumed decreased mobility when IDT turns 40 (which for practical purposes can be equated with the beginning of the calendar year in which he attains his 40th birthday). Ms Jackson testified that sedentary people are at greater risk that common ailments such as colds and flu will develop into pneumonia, particularly as they get older. Low muscle tone makes the clearing of secretions and coughing more difficult. The McGinley paper reported that falls by CP adults are less likely to result in minor soft tissue injuries than in ordinary adults, possibly due to the greater integrity of soft tissue.[98] This does not mean that the overall incidence of soft tissue injury among CP adults is lower than in the adult population, given that as they age CP adults fall more often than ordinary adults. The McGinley article states that acute and chronic pain is frequently reported by adult CP sufferers, osteoarthritis often being a common cause of pain. Fatigue is also common, and is associated with a decline in walking.

[458] I consider that it would be fair to grant an increased allowance of 36 hours p/a as from the beginning of the year in which IDT turns 40. This will continue until his EDA. (This allowance accords with the plaintiffs’ claim.)

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[98] Exhibit “AN” p 80.

NMES therapy [items 48-49 of “POC1”]

[459] The plaintiffs claim the cost of equipment for Neuromuscular Electric Stimulation (‘NMES’), which would be used as an adjunct to physiotherapy. On my understanding of Mr Jackson’s reports, the physiotherapist would own equipment to administer NMES during physiotherapy sessions. She considers that IDT should have his own slightly less expensive equipment for follow-up use in the home. It is this home device and the consumable electrodes for which the plaintiffs claim.

[460] Although Ms Jackson’s reports did not expressly say so, her view was evidently that IDT should have NMES treatment for life. In her second report she said that the home unit would cost R14 500, that it should be replaced every seven to ten years, that consumable electrodes would cost R80 – R90 per pack, and that IDT would need three packs p/m. This was initially the basis of the claims in items 48 and 49 of “POC1”.

[461] In oral evidence she said that she envisaged an initial ‘big push’ with NMES treatment which could then be scaled down. She no longer thought that IDT needed NMES all the time. One could probably cut down the recommended usage by half or even two-thirds. From a practical point of view, she said, this meant that the replacement cycle could be extended from 8½ years to 17 - 25½ years.

[462] The amended claim in item 48 of “POC” is based on a replacement cycle of 17 years with a corresponding decrease in electrodes. Given my finding of LE, this would mean an initial acquisition and two replacements. If the replacement cycle were regarded as 25½ years, only one replacement would be needed.

[463] According to Ms Jackson’s reports, NMES treatment is directed at: (i) opening or re-opening neural pathways to create awareness in the individual of the possibilities of motor function; (ii) strengthening the muscles in which the stimulation causes contractions, such strengthening taking place with less volitional effort and thus with less likelihood of triggering spasticity and involuntary movement; (iii) increasing the range of motion in muscle groups that are not contracted;

(iv) assisting in the development of efficient functional movement patterns; (v) improving overall circulation.

[464] She thought that NMES treatment would be helpful in IDT's case to access motor patterns that had previously been unavailable to him and to strengthen weak muscles across the spectrum. It would be used to assist in strengthening and maintaining or increasing range of movement in his limbs and trunk and in improving his movement patterns. In oral evidence she said she was particularly interested in using NMES to assist in activating IDT's core muscles in functional movements.

[465] She was asked whether IDT would use the device not only in the home but also at school. She said he would do bursts of it during the day, for at least an hour. She added that some patients went to bed with the device fitted.

[466] Regarding the pedigree of NMES treatment, she said it had been in use for about six years when she left New Zealand in 1997. When she arrived in this country it was not yet being used. It has been introduced over the last few years. She used it quite a lot in her practice. She was asked whether she had ever used it on an athetoid CP patient. She replied that her practice had previously given NMES therapy to an athetoid patient who is now adult but whom they had been treating since the age of eight. This patient also has scoliosis.

[467] I should perhaps make the point that Ms Jackson will not be IDT's treating physiotherapist. She is based in Johannesburg.

[468] In cross-examination it was put to her that there is insufficient medical support for the use of NMES treatment on persons with athetoid CP. She was referred in that regard to a review of literature contained in a policy statement issued by a leading American medical aid society, Aetna.[99] Aetna's position, which for similar reasons to those previously explained, is not itself relevant, is that while NMES treatment is medically necessary for disuse atrophy where the nerve supply to the muscle is intact and the atrophy is attributable to non-neurological causes (eg

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[99] Exhibit "YY".

burn scarring, major surgery, splinting), its use is ‘experimental and investigational’ for various other conditions, including CP, because its effectiveness as medically necessary has not been established.

[469] The literature on which the conclusion relating to CP was based[100] comprises research papers by Pape et al (1993), Hazlewood et al (1994) and Steinbok et al (1997) and systematic reviews of the literature by Kerr et al (2004) and Boyd et al (2001). The Pape study was limited to six patients with mild ambulatory spastic hemiplegia or diplegia. (IDT does not have spastic CP.) Although the authors concluded that in selective cases, especially children with mild CP, overnight NMES might be a useful adjunct to conventional rehabilitation services, Aetna noted that this was an uncontrolled study of children who were at an age (3 to 5) when rapid changes would in any event be expected. No attempt had been made to standardise physical therapy. Other rehabilitative procedures which five of the six children were receiving might have had a ‘confounding effect’ on the outcome of the study. Data for long-term improvements were absent.

[470] The Hazlewood study comprised 10 patients with hemiplegia CP. (IDT’s condition is bilateral.) The study was confined to testing improvements in ankle dorsiflexion. (A loss of range in this respect has not been reported for IDT.) Although there were some differences following NMES treatment, the authors concluded that, because of the ‘complex and diverse pathology’ associated with CP, the application of NMES treatment for CP children required further investigation to determine which types of CP patients were likely to benefit as well as the desired parameters of stimulation. These investigations were necessary before NMES treatment could be widely used in the clinical setting.

[471] The Steinbok study concluded that NMES might be beneficial for children with spastic CP who had undergone a selective posterior rhizotomy (surgical severing of a nerve root in the spinal cord) more than one year previously. The authors concluded, however, that more research was needed to confirm these results. They emphasised that their findings could not be extrapolated to the larger

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[100] See pp 16-17 of the exhibit.

population of children with spastic CP who had not undergone rhizotomy. (As noted, IDT does not have spastic CP nor has he undergone a rhizotomy.)

[472] The systematic reviews of the literature concluded that findings of improvement following NMES treatment had to be ‘interpreted with caution’ because the studies had ‘insufficient power to provide conclusive evidence for or against the use of these modalities’.

[473] Ms Scheffler did not deal with NMES therapy in her reports. In the joint minute she disagreed with Ms Jackson’s recommendation. In oral evidence she said that there was no scientific basis for NMES therapy in IDT’s case. He did not have neural pathway issues or decreased range of motion.

[474] I do not have evidence of the extent to which, and the conditions for which, NMES therapy is used by South African physiotherapists.

[475] Although some witnesses have reported loss of range for certain movements, the findings are equivocal. Loss of range does not appear to be a significant issue for IDT. In any event, the scientific foundation for NMES treatment in general, and athetoid CP in particular, is lacking. I may add that Ms Jackson’s substantial scaling back of her recommendation in oral evidence (barely seven months after her second report and five months after the joint minute) does not inspire confidence.

[476] I thus reject the claims in items 48 and 49 of “POC1”.

Educational psychology [items 93-103 of “POC1”]

Introduction

[477] Based on Ms Bubb’s recommendations, the plaintiffs advance the following claims in “POC1”

- R18 000 - the cost of books downloaded/purchased on the internet in excess of the expense IDT would have incurred on books but for his injury (R30 000), less R12 000 (40%) on account of the fact that IDT has access to a library at school (prior to Ms Bubb's oral testimony the full R30 000 was claimed);

- R2962 – cost of an immediate educational assessment;
- R15 069 – five further educational assessments over the rest of his school career at R3000 per assessment;
- R74 716 – development of an Individual Education Program ('IEP') for IDT for the duration of his school career, based on 4 x two-hour sessions p/a at R975 p/h;
- R24 103 – monitoring by an educational psychologist in the school environment, based on 12 hours p/a to age 13 and 8 hours p/a thereafter to age 18 at a cost of R975 p/h but on the further basis that only 25% hereof represents an additional expense, the balance being incorporated in the cost of developing the IEP (prior to Ms Bubb's oral testimony the claim was for 100%);
- R6000 – the immediate cost of teaching IDT effective study methods;
- R16 754 – further training in study methods for the rest of his school career, based on a total 20 sessions at R975 p/h (this would be about two sessions p/a);
- R81 601 – 150 sessions of psychotherapy throughout his life (to be used 'as and when needed'), including equine therapy, music therapy and EMDR (Eye Movement Desensitisation and Reprocessing) at R975 p/h.

[478] Ms Bubb, who is undoubtedly a very experienced educational psychologist, testified that full psychometric testing of IDT was impossible. Using her clinical experience and limited psychometric testing, she considered that IDT was probably functioning, intellectually, between 'average' and 'borderline'. (In standard IQ nomenclature 110-119 is high average, 90-109 is average, 80-89 is low average, 70-79 is borderline and below 70 is mild retardation.) Her view that this was 'probable' was challenged in cross-examination on the basis that it is simply not possible to say, given the impossibility of performing full psychometric testing. Ms Bubb felt that comfort could be drawn from the fact that in the limited cases where

his intellectual functioning could be tested he was in the average range. There was also the fact that Dr Thompson, the paediatrician at Red Cross Hospital who saw IDT on a number of occasions, had recorded her view as being that he was of 'near-normal intellect'. Although Dr Lippert and Dr Springer in their joint minute said that the clinical impression suggested 'mild retardation', they added that IDT would need about two years for therapeutic interventions to take effect and give a stable enough picture.[101]

[479] She was referred in re-examination to the view expressed by IDT's class teacher, as reported by the defendant's occupational therapist Ms Coetzer, that IDT was 'thought of as astute in the realm of things other than language use and communication' and had been 'steadily learning to match visual cues with needs'.[102] The teacher gave a similar report to Ms Bubb, saying that she did not think there was a problem with his cognitive reasoning but with paying attention. His focus had begun to improve now that he had a facilitator.

[480] I do not think it is necessary or possible to make precise findings about IDT's current level of intellectual functioning. What can be said is that he has sufficient intellectual capacity to derive benefit from appropriate educational input and stimulation. This would be so even if he were regarded as suffering from mild retardation though I do not think this should be assumed against him in deciding on appropriate educational interventions. The defendant does not positively assert that IDT suffers from mental retardation. The high watermark of its case is that it is not possible to say. One does not withhold education from a child just because one cannot be sure of his precise level of intellectual functioning.

Educational interventions

[481] This does not mean that IDT reasonably requires all of the interventions recommended by Ms Bubb. Apart from psychotherapy, Ms Bubb's

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[101] In argument I was referred to Dr Marus' report where he said that recent literature indicates that intellectual abilities in patients with kernicterus-induced CP are often in the normal range [6/17]. He annexed a chapter by Shapiro et al from *Pediatric Life Care Planning and Case Management* 2nd Ed where the authors say that intellect in these children is 'almost always in the normal range' [6/29]. In the absence of expert evidence on the point, I do not think I can have regard to this material.

[102] At 7/146.

recommendations are confined to IDT’s school-going years. Those recommendations were the same in her two reports despite IDT’s having been placed at Paarl School in the intervening period. Every expert who visited Paarl School, including Ms Bubb, was impressed. I heard evidence from the principal, Mr Kruger. He was a transparently honest and reliable witness and struck me as a man of considerable humanity and great commitment to his learners. He is very experienced, having obtained his degree in remedial education in 1987. He chairs the South African National Association for Schools for Children with Special Needs. After a number of positions at other schools, he became principal of Paarl School in 2014.

[482] There are 343 learners at Paarl School, of whom 169 have CP. Of the CP children, 35 are athetoid though IDT is apparently the only CP child with hearing loss. He is currently in a class with about ten other learners. The school employs 36 teachers, 25 class assistants, a nursing sister, a social worker, two child psychologists (a third intern has just left), four physiotherapists, three general occupational therapists, a job-preparation occupational therapist and three speech therapists.

[483] The school has been innovative in making use of the services of volunteer ‘*geselstannies*’ – loving adults with whom learners can talk if they are troubled or upset.

[484] He was asked whether the school was short-staffed (an issue foreshadowed in certain of the plaintiffs’ expert reports). He did not believe that this was so in comparison with other schools. While they could always use more teachers and therapists, they were coping. Staff turnover was low. Since he had been at the school he had not received requests from parents for therapy which the school could not provide. I do not accept the plaintiffs’ submission that the school is ‘labouring under financial constraints’ if by this they mean that the school is unable to provide a reasonable educational environment for special-needs children.

[485] Mr Kruger said that younger learners tend to get more therapy; the school had limited resources for learners in the higher grades. The school psychologists

perform individual therapy, provide support for the teachers and guidance to the parents. Individual psychological therapy would take place on referral, usually by the teacher. This is based on need; not every learner requires individual therapy. He said that the school's psychologists were hard-working but not overloaded. The ratio of psychologists to pupils was better than other schools. The psychologists appeared to him to be coping. They had not complained or asked for additional assistance.

[486] He said that IDT was not receiving individual psychotherapy at the school. His experience was that CP children were generally better equipped to handle life situations than learners with other physical disabilities.

[487] Mr Kruger testified that all learners are screened by the various specialists. An Individual Intervention Program ('IIP') is prepared for each learner. This is done by a multidisciplinary team, including the parents and the child psychologist, the latter acting as an internal case manager. Each child undergoes two annual assessments involving the multidisciplinary team.

[488] He was asked whether the school's approach could accommodate the involvement of a private educational psychologist. My impression was that Mr Kruger did not wish to oppose anything which might potentially benefit a learner. The school was not an 'island'. The school was not resistant to external help if this could benefit the learner.

[489] He cautioned, however, that this could be time-consuming for school staff. He did not think that the school's multidisciplinary team could readily make time for the external engagements contemplated in Ms Bubb's recommendations. He also said that the involvement of a private psychologist in the child's education program could create the unfortunate perception among staff that they were 'being watched', ie were not to be fully trusted in their assessment of and programs for the learner. His own view was that the school staff were better placed than an external therapist to determine the child's IIP (a similar tool to Ms Bubb's IEP) and to undertake assessments. He said that 'we are a hands-on school'. The staff had daily contact with learners and were best placed to set the pace. The staff were a 'close

community' with ample opportunity for liaising with each other. He thought the additional assessments recommended by Ms Bubb were unnecessary. There was already a program for assessing learners academically and therapeutically.

[490] He said AAC was not foreign to Paarl School. He was sure his staff would not be resistant to external help in learning to key-sign and to use IDT's AAC equipment.

[491] He testified that the school had a fully functioning library, including e-books. In his experience the extent to which CP children used reading material varied.

[492] Ms Bubb visited the school in 2014 and again in September 2015. Her impression was that the school psychologist did not seem to be closely involved with IDT. She thought they were overworked. Things would get worse if one of the psychologists left. (Mr Kruger's evidence did not suggest that either of the current psychologists was likely to be leaving soon or that if one of them left she would not be replaced.)

[493] It was put to her in cross-examination that she was over-complicating matters by recommending four IEC meetings with an external therapist. If necessary an external therapist could communicate with the corresponding school therapist by phone or email. It was put to her that on her approach the staff would be bogged down in meetings. All the children at the school, not only IDT, were special-needs children. Ms Bubb said that there could be considerable change over the course of a single year and that she would want at least two IEPs p/a, preferably four.

[494] I am not persuaded that IDT's condition reasonably requires there to be the external interventions recommended by Ms Bubb in setting IDT's educational program, in assessing his progress and in training him in study methods. He is at an excellent school with dedicated teachers and specialists, including child psychologists. The prominent role assigned by Ms Bubb to a private educational psychologist would consume a lot of staff time and diminish their time for other learners. If similar privileges were extended to other children, things would become quite impossible. Apart from unreasonable demands on their time, I can well

imagine that the staff might be resentful at having an external expert ‘watching over their shoulder’. This would not be helpful for IDT.

[495] There may be times when Paarl School’s efforts for IDT will be less than perfect but perfection is not the standard. If IDT were uninjured, his school might also be less than perfect. He might require extra lessons because teachers in particular subjects were weak. In an ideal world all children might notionally receive some benefit from the intensive involvement of a private educational psychologist but this is not the norm.

[496] I will thus disallow items 94-101.

Books

[497] In regard to the claim for books (item 93), it has not been proved to my satisfaction that IDT’s injury has led to a net increase in the reasonable cost of reading material. Mr Kruger testified that the school has a good library which includes e-books. It may well be that IDT will never develop any material ability or desire to read and that he will find diversion in television, DVDs and computer games rather than books. If he does have some recourse to books, there is nothing to indicate that the school’s library would be insufficient to meet his reasonable needs in childhood. If IDT were uninjured, substantial amounts would have been needed for school books and stationery during his childhood. It is also reasonable to assume that additional amounts would have been expended, both in childhood and adulthood, on leisure reading, magazines, newspapers and the like. There would probably also have been a range of more diverse leisure activities which would have entailed expense but which are now closed to IDT. The loss of these and other amenities is something for which IDT is entitled to be compensated by way of general damages. How this money is spent to make his life happier is a matter for those charged with his care.

[498] I will thus disallow item 93.

Psychotherapy

[499] In regard to the claim for 150 sessions of diverse psychotherapies (item 102), equine therapy (hippotherapy) is already the subject of separate agreement under item 109 (part of the occupational therapy claims) – as previously mentioned, it has been agreed that IDT will receive an effective 15 hours p/a of hippotherapy from the present time to age 18. This in itself will amount to 150 'sessions' over a ten-year period.

[500] Ms Bubb's recommendation of 150 hours remained unchanged in her second report despite IDT's intervening placement at Paarl School. In view of his busy schedule to age 18, including the physiotherapy I have allowed and the hippotherapy which has been agreed, I do not think there should be any further allowance for psychotherapy during his school going years. During this period he will have the stimulation of his teachers and classmates.

[501] IDT's life will become lonelier as he enters adulthood. He may survive one or both of his parents. He will find it difficult to develop and maintain friendships with his peers. He will not be able to marry or have intimate relations. He will not have the pleasure and satisfaction which gainful employment can bring. He will, tragically, have 'time on his hands'. As will appear from the next part of this judgment, he will have an increased risk of depression and anxiety disorders. While these are risks which cannot be averted with certainty, specialised psychotherapy such as music therapy, EMDR and somatic psychotherapy may assist IDT in coping with the isolation of his adult life. Ms Bubb also explained that neuropsychology literature supports the view that trauma is 'held in the body'. IDT's kernicterus is a trauma he has suffered. The specialised therapies she recommended were not conversational therapies which required the patient to have communication skills.

[502] In the circumstances I think it reasonable to allow an average of two sessions p/a of specialised psychotherapy as from IDT's 19th birthday to the end of his life. Based on my LE finding, this would amount to 72 sessions in total. (In argument the defendant's counsel proposed an allowance for 60 sessions.) Although for

calculation purposes the allowance should be evenly spaced, in practice he may receive it in more intensive blocks. The rate will be R975 p/h.

Psychiatric claims [item 7 of “POC1”]

[503] The psychotherapy and related claims in respect of the plaintiffs personally have been settled. The claims in respect of IDT are in dispute. The plaintiff called Dr Grinker, a psychiatrist. The defendant did not call a psychiatrist.

[504] The essence of plaintiffs’ case is that IDT’s brain damage and physical condition have increased his risk of developing psychiatric conditions such as depression and anxiety. They claim R12 500 p/a for life on the basis of a 30% chance that he will develop a disorder requiring psychiatric intervention at this cost. That the court can allow damages on the basis of an increased risk falling short of a probability is uncontentious (*Burger* and *De Klerk* supra).

[505] The 30% chance is based on a view that a CP child is five times more likely to develop a psychiatric disorder than an unimpaired child. According to Dr Grinker the incidence of psychiatric disorders in the general population is 5% - 10%, meaning that the risk in the case of a CP sufferer is 25% - 50%. Dr Grinker supported the fivefold increased risk with reference to his clinical experience and a 1995 research paper by McDermott et al.[103]

[506] Dr Grinker’s anecdotal clinical experience did not strike me as sufficiently extensive or chronicled to quantify the increased risk. I did not understand him to say that he has kept data. His impression could not be tested with reference to the facts.

[507] The McDermott paper, which examined a group of 47 CP children, found reported behavioural problems in 25,5% of them as opposed to 5,4% in a large control group. After certain statistical adjustments CP children were said to be 5,3 times more likely to have behavioural problems compared with the control group.

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[103] McDermott et al *A Population-based Analysis of Behavior Problems in Children with Cerebral Palsy* (1996) Journal of Paediatric Psychology [exhibit “GG”].

This reduced to 4,9 times if one excluded children with mental retardation. The results were said to indicate that previous estimates of a 30%-80% risk of behavioural problems might be exaggerated.

[508] This paper does not provide powerful support for Dr Grinker's opinion. The sample size was relatively small. Only 12 of the 47 children did not have mental retardation. Furthermore the psychiatric claims in the present case are not concerned with IDT's increased risk of behavioural problems in general but with whether he will require psychiatric interventions of the kind described by Dr Grinker, ie consultations with a psychiatrist (diagnosis, prescription and monitoring) and psychiatric medication (eg antidepressants or anxiolytics). The authors distinguish between various behavioural disorders (antisocial, anxiety, headstrong, hyperactive, peer conflict and dependency). These problems would not necessarily require psychiatric intervention. In the present case there is a separate claim (under neurology) for attention deficit hyperactivity disorder which has been settled subject to LE.[104] IDT has access to a school psychologist. There are separate claims (under educational psychology) for psychotherapy.[105]

[509] Of the behavioural disorders mentioned in the McDermott paper, only anxiety seems to fit within the spectrum of disorders which Dr Grinker had in mind. Anxiety was only reported in 6 of the 47 children in the McDermott paper. The authors do not say what interventions these children were receiving.

[510] In regard to the prevalence of psychiatric disorders in the general population, Dr Grinker said that his estimate of 5% - 10% would be something found in a basic psychiatric text. In cross-examination he was shown a 2008 paper by Stein et al[106] which surmised that the prevalence of psychiatric disorders in South Africa was relatively high because of stressors such as racial and gender discrimination, political and criminal violence, poverty and substance abuse. In a group of 4351 adults, the incidence of anxiety disorders was found to be 15,8%, major depression 9,8% and substance-abuse disorders 13,3%. The overall risk of any psychiatric

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[104] Item 6.

[105] Item 102.

[106] Stein et al *Lifetime Prevalence of Psychiatric Disorders in South Africa* British Journal of Psychiatry (2008) [exhibit "HH"].

disorder was 30,3%. I accept the plaintiffs' point that IDT's uninjured risk of substance-induced psychiatric disorders was, in the light of his family and social circumstances, low. In regard to depression, females are more at risk than males though the paper does not state the relative percentages.[107] Although the research paper does not indicate the treatment which the affected persons were receiving, the study method seems to have been designed to identify psychiatric disorders which would typically require psychiatric intervention.[108]

[511] Although the McDermott paper does not provide strong support for Dr Grinker's opinion of a fivefold increase in the risk of conditions requiring psychiatric intervention, it does not seem to be disputed that CP exposes the sufferer to some increased risk. It has not been suggested that there are other research papers which would shed more light. As Dr Grinker explained, IDT's increased risk is not only from organic brain damage but also from an awareness of his condition. Although IDT's intellectual ability cannot be precisely determined, he is capable of experiencing happiness and sadness. Even if his condition were described as mild mental retardation, he has enough insight, in my view, to know that he is different from other children and cannot do what they can do. As he gets older, he will see others forming intimate relationships, marrying and having children. His physical handicaps and his hearing and communication deficits will make his world a very lonely one. He will find it difficult if not impossible to process his feelings through meaningful discussion with others.

[512] The defendant's counsel referred me to *Hing v RAF* 2014 (3) SA 350 (WCC) regarding the adequacy of proof of psychiatric injury. The issue in that case was whether the claimant had suffered such injury as a result of the shock of an accident in which her sister died. The evidence did not establish that the claimant had suffered more than normal grief and sorrow. That was a factual finding in a particular setting. I am not asked to find that IDT currently has a psychiatric ailment. I am asked to find that there is an increased risk of such disorders as result of the brain

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[107] Table 2 (second column, first row) indicates, on my understanding, that women are 1,78 times more likely than men to suffer from depression.

[108] The questionnaire was designed to generate diagnoses according to the criteria of the ICD-10 and DSM-IV diagnostic systems [pp 112-13].

damage. The brain damage has been proved. The disorders, if the risk eventuates, are real psychiatric disorders.

[513] At the moment IDT is, despite all his challenges, a happy child. He has not yet required psychiatric treatment. The defendant's developmental paediatrician, Dr Springer, said that someone like IDT would face 'pockets of risk', particularly when entering adolescence and then adulthood. This appears consistent with the opinion of Dr Grinker and the plaintiffs' educational psychologist, Ms Bubb, though Dr Grinker said that these were peaks of risk rather than pockets.

[514] I am satisfied that IDT does face some increased risk of psychiatric illness, particularly depression and anxiety, requiring psychiatric intervention. The court must do the best it can. Having regard to the Stein paper, I am inclined to put IDT's uninjured risk at 10%, the upper threshold of Dr Grinker's estimate of incidence in the general population. I accept IDT's injured risk as being 30%, which is three times the uninjured risk. For two reasons this is lower than the fivefold increased risk which Dr Grinker proposed: (i) Firstly, as I have explained, the McDermott paper does not support a conclusion that the fivefold increase in reported behavioural problems equates to a fivefold increase in psychiatric intervention. (ii) The special stressors which increase the incidence of psychiatric disorders in South Africa do not logically give rise to a corresponding increase among CP sufferers.

[515] I asked Dr Grinker whether an award should not be based on the difference between the uninjured and injured percentages rather than by simply applying the injured percentage (as he had done). He appeared to accept the logic. The percentage to be applied is thus 20%.

[516] Although I have spoken of an injured risk of 30%, I do not mean a 30% risk in every year of life. As I have said, IDT is currently a happy child who has not suffered psychiatric illness. Following the award of damages in this case he will receive treatments and therapies which may improve his external circumstances. I think his first real risk will be when he enters adolescence, which for calculation purposes I would put on his 15th birthday. At that time he will have a 30% risk (a 20% increased risk) of developing a disorder requiring psychiatric intervention. I think it should be

assumed that appropriate medication in this phase will bring relief. I will allow treatment for one year.

[517] The next period of heightened risk is early adulthood. For calculation purposes I would put this on his 25th birthday. At that time he will again have a 30% risk (a 20% increased risk) of developing a disorder requiring psychiatric intervention. I think it should be assumed that even if he responds well to medication he will remain prophylactically on appropriate medication for the rest of his life to prevent relapse.

[518] Dr Grinker's estimates of the costs of psychiatric consultations and medication were not challenged. In the first phase (for one year as from IDT's 15th birthday) there would be four evenly spaced consultations of R1200 each and medication at a monthly cost of R500. In the second phase (as from IDT's 25th birthday), there will be a similar allowance (consultation and medication) for one year. The medication will continue at the same rate for life but the consultations will, as from 26th year, reduce to one consultation per year.

[519] The amount to be awarded in respect of item 7 of "POC1" must be calculated in accordance with the above assumptions.

Case management [item 124 of "POC1"; items 10-16 & 86-87 of "POC2"]

[520] The defendant accepts that it must bear the reasonable costs of a case manager. Save in one respect, the parties have reached agreement on the case manager's hours. They differ on the hourly rate and on the treatment of travelling time.

Hourly rate and travel time

[521] As previously mentioned plaintiffs appointed Ms Bester as the case manager in March 2015. She is an occupational therapist. Her treating rate is R650 p/h. The plaintiffs, duly advised, agreed to pay her R950 p/h as an all-in fee, ie on the basis that Ms Bester would not charge separately for disbursements. The rate applies to

travel time as well as active attendances. The plaintiffs' claims in respect of case management are based on this rate, save that in the light of Ms Bester's oral evidence they have reduced the charge for travelling time to R325 p/h (half of her treating rate) plus travel costs at the AA rate of R5,00 p/km (an estimated R180 per round-trip between her office in Plumstead and IDT's home in Brackenfell). To accommodate the reduced travel rate, the plaintiffs propose a 20% deduction from the amounts arrived at on the basis of R950 p/h.

[522] The defendant's position, based on Ms Scheffler's opinion, is that a reasonable hourly rate would be R600 – R650 excluding travel time. In respect of travel, the defendant would allow R5,00 p/km in excess of 12 km.

[523] The plaintiffs do not have a right to recover Ms Bester's anticipated charges as such. Their entitlement is a reasonable amount for case management. Ms Bester's charges and her explanations in support of them are simply part of the evidence on which I must determine what a reasonable allowance would be. Apart from anything else, it cannot be assumed that Ms Bester will be IDT's case manager for the rest of IDT's life.

[524] The evidence shows that case managers are usually occupational therapists or physiotherapists. Ms Crosbie, an occupational therapist whose practice is in Johannesburg, was involved in assisting the plaintiffs and their attorney to locate a suitable case manager in Cape Town. She testified that some of the occupational therapists she approached declined because of lack of experience. Others did not want to become involved in a pending case. Ms Bester was willing to accept the appointment. Ms Crosbie could not find anyone suitable closer to Brackenfell. She was not involved in setting Ms Bester's remuneration.

[525] In her first report of June 2013 (about two years before Ms Bester's appointment) Ms Crosbie said that R400 p/h would be an appropriate rate for the case manager if she were an occupational therapist. In her second report of September 2015 (some months after Ms Bester's appointment) Ms Crosbie said that an appropriate all-in rate for the case manager was R950 – R1050 p/h, alternatively R880 p/h plus disbursements. She conceded in cross-examination that the revised

rate was influenced in part by what Ms Bester was actually charging. She testified that her treating rate as an occupational therapist was R720 p/h but that Cape Town rates were lower at about R460 p/h.

[526] The parties have settled the occupational therapy claims on the basis of an hourly charge of R490.

[527] As to physiotherapy rates, Ms Jackson, whose practice is in Johannesburg where rates are typically higher, charges between R680 – R730 p/h. Ms Scheffler's treating rate is R450 – R500 p/h. The parties have agreed that a rate of R490 p/h will apply to the physiotherapy claims.

[528] Ms Scheffler testified that as a case manager she charges between R600 – R650 p/h. Her treatment and case management rates are all-inclusive save for travel which she bills at R5,00 p/km for distances exceeding 12 km.

[529] Ms Hattingh and Ms van der Merwe said in their joint report that a rate of R460 – R750 p/h, excluding travel costs, would be reasonable for the case manager, depending on the precise level of expertise. In terms of the settlement, speech therapy has been agreed at R700 p/h.

[530] I accept that case management justifies a higher rate than the manager's treating rate. Ms Bester explained that the treating rate is for prearranged room-based therapy. By contrast the demands on the case manager's time are unpredictable. She may need to assist in medical and other crises. She needs to draw on a variety of skills, including conflict-resolution, assessing the suitability of proposed caregivers and the like. Many of her attendances require travel to the patient's home, to suppliers, to meetings with trustees and so forth. I did not understand Ms Scheffler to challenge this; indeed the latter's case management rate, like Ms Bester's, is about 40% - 50% higher than her treating rate.

[531] My understanding of the agreement reached between the parties on case management is that the hours specified in item 124 have been agreed save for those contained in 124.5 and 124.6. Counsel confirmed that the agreement is not

predicated on any portion of the hours' being travelling time. Currently Ms Bester's round-trip between Plumstead and Brackenfell is 90 km. I would expect the round-trip to take at least one hour. Other time attendances may require travel to closer destinations. If and when another case manager is appointed, the travel schedule will change. I think it likely that a future case manager will be closer to IDT's home than Ms Bester currently is. There is also the fact, as Ms Bester herself said, that she would try when possible to combine attendances for IDT with other attendances in the area. It is thus reasonable to assume, over the long term, that every hour of case management will be accompanied by a round trip of 30 km. In the immediate future it may be more but in subsequent years it may be less.

[532] Based on the evidence, I cannot find that it is reasonable or usual for a case manager to charge for travel on a time-basis. (Ms Bester's belated concession, during oral evidence, that it might be reasonable to downscale her charge for travel time from R950 p/h to R325 p/h plus R5,00 p/km reflects this.) The case manager could, however, reasonably charge for travel costs at the AA rate of R5,00/km. For the rest, the fact that case management often requires travel is simply one of the factors justifying an increased hourly rate for active work. On my assumptions, the recoverable travel disbursement p/h of case management would be R150. If one deducts this from Ms Bester's rate of R950 one is left with R800 p/h for actual work. This is slightly above the top end of the range furnished by Ms Hattingh and Ms Van der Merwe but only 23% higher than Ms Bester's usual treating rate.

[533] I will thus allow an all-in rate for case management of R950 p/h on the basis that there will be no additional allowance for time or expenses of travel.

[534] In regard to past case management (April 2015 to March 2016), Ms Bester's charges include travel time at R950 p/h. Since I do not think this is reasonable, some deduction must be made. This cannot be done exactly. I will disallow 20% as a robust adjustment in accordance with the plaintiff's submission previously mentioned. I will thus allow R65 217 rather than R81 521 in respect of items 10 – 16 and 86 – 87 of "POC2".

House adaptations [items 124.5 & 124.6]

[535] The plaintiffs claim 20 hours of case management to help the family find a suitable home and to consult with the architect and builder regarding adaptations; and they claim a further three to five hours p/w on site over a three-month period to 'troubleshoot and oversee' construction. The plaintiffs mainly relied on Crosbie's estimate. In her second report she said that during the renovation phase the case manager should spend about one hour p/d on site.

[536] I agree with the defendant's criticism of this claim as excessive. The defendant through counsel proposed an allowance of ten hours to assist in finding a house and ten hours for overseeing adaptations. I regard this as generous. Ten hours should be sufficient to convey to the parents what they should look out for and to visit one or two potential properties identified by the parents. Once the adaptations have been specified, it is the responsibility of the architect and builder to ensure compliance with the specifications. It is not the function of a case manager to be a building project manager or to micro-manage. If the builder fails to follow the plans, he would be responsible for remedial work at no additional cost. Ten hours over the life of the project should be sufficient to check that things do not go badly off the rails. Ms Scheffler's evidence was that ten hours in total would suffice.

[537] I will thus allow 20 hours in total for items 124.5 and 124.6. I was not addressed as to when this expense will be incurred. For calculation purposes it would be reasonable to assume that the process of identifying a new house will start six months after date of this judgment and that the case manager's 20 hours will be spent over a one-year period as from that date.

Miscellaneous past expenses ["POC2"]

[538] The plaintiffs do not press item 37. I heard evidence in support of items 39, 40 and 83. They are modest and I am satisfied that they were reasonably incurred for IDT's benefit and should be allowed.

[539] Item 84 is the cost of a consultation with a urologist, Dr Jee, on 20 April 2016. According to the plaintiffs' counsel, this was with a view to the carrying out of a UDS. Dr Jee declined to perform the test but furnished a short report.[109] Dr Choonara's evidence was that a UDS would be reasonable and helpful. Ms Munro indicated that from the plaintiffs' perspective it did not matter whether this was allowed as a past expense or as a litigation cost. Ms Bawa proposed that I treat it as a litigation cost. I do not see why this modest item should be left over for potential dispute at taxation. While the results of a UDS might have been of assistance to the expert witnesses, the cost was in any event reasonably incurred for IDT's benefit and should be allowed as a past expense.

[540] Item 85 is R33 671,70, being the amount of an invoice issued by Mr Freedman in May 2016 in respect of the supply of SMOs, SPIO/TLSO and related attendances.[110] This occurred midway through the trial and no evidence in regard to Mr Freedman's attendances was led. I do not understand the defendant to dispute that the expenditure was incurred. In regard to the SMOs, the parties agreed a cost of R10 779 which is the amount I will allow. Given the views I have expressed on SPIO/TLSO, I will thus disallow these items as a past expense. In regard to consultation time totalling R1206 I propose to be pragmatic and allow 50% as relating to the SMOs. Accordingly I shall allow a total of R11 382 in respect of item 85.

[541] The plaintiffs' counsel in argument added an 'item 90' for R9624,40, being the amount of an invoice issued by an audiologist, Ms Swart, for conducting audiological assessments in mid-February 2016.[111] Ms van der Merwe referred to these during her evidence. Counsel were content to have this item treated as a litigation cost. Since the claim was not formally included in "POC2", I think it should be dealt with on taxation though I consider that the expense was reasonably incurred.

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[109] File11/297-298.

[110] File 11/304

[111] File 9/177.

Damage to earning capacity

Introduction

[542] Since I have determined IDT’s probable death age as 55, this is the terminal date for computing the damage to his earning capacity. There is no claim for the ‘lost years’ of earning power he may, but for reduced LE, have had from the age of 55 to his retirement age.

[543] It is common cause that uninjured IDT would have had the capacity to earn income and that because of his injury he is unable to earn any income. Neither side asked me to estimate a lump sum. They contended that I should determine an amount along actuarial lines by projecting a probable income-earning career for IDT. They differed on the precise career path and the earnings attached to that path.

[544] The main experts on this part of the case were Ms Donaldson, an industrial psychologist, for the plaintiffs and Ms Auret-Besselaar, a counselling psychologist and HR consultant, for the defendant. Although Ms Donaldson towards the end of her cross-examination questioned Ms Auret-Besselaar’s expertise on the basis that she was not an industrial psychologist, I am satisfied that both witnesses have the qualifications and experience to assist the court. Ms Auret-Besselaar’s focus in her advanced studies was organisational psychology. Her work has included significant involvement in career counselling, competency assessments, job design, job grading and remuneration structures.

IDT’s uninjured earning attributes

[545] There is no direct evidence for IDT’s pre-morbid intellectual abilities. His communication impairment and athetosis have also precluded proper psychometric testing of his post-morbid intellectual abilities. Even if he were to be regarded as now displaying mild mental retardation, this would not justify an adverse conclusion about his pre-morbid abilities.

[546] Ms Bubb, the plaintiffs' educational psychologist, testified that IDT would probably have been of 'average to high average' ability, capable of matriculating and obtaining a university or technical college qualification. Although Ms Donaldson and Ms Auret-Besselaar in their joint minute deferred to Ms Bubb's view, there does not seem to me to have been much foundation for Ms Bubb's conclusion apart from the inferences to be drawn from family history, which are matters on which Ms Donaldson and Ms Auret-Besselaar themselves could and did comment. They agreed in their joint minute that in the uninjured scenario IDT would have passed matric and become a qualified artisan and that this is the career path he would probably have pursued though they based this more modest projection on financial constraints, not lack of ability.

[547] Personality traits also have a bearing on a person's career prospects. Ms Donaldson and Ms Auret-Besselaar made observations in that regard with reference to the personalities of the immediate family. Even in his injured state, IDT is a generally happy child with a capacity to work his way into the hearts of the people he encounters. He seems to me to display determination in the face of his difficulties. There is no reason to doubt that he would have had these same beneficial traits, and others, in the uninjured scenario.

[548] IDT's father, AD, passed matric. Since then he has worked as a tiler in a family business, NH Tiling, which is owned by his father and uncle. AD has no formal artisanal qualification. He has been described as a foreman in the business. The precise extent of his supervisory role is unclear. He apparently hopes one day to take over the business. AD did not testify.

[549] AD's father passed standard 6/grade 8. He is a tiler. AD's mother has relatively little education but can read and write. She is currently a housewife, having previously been a factory machinist.

[550] AD's mother has three children from a previous marriage. There is no information about them. AD has two full siblings. His older sister passed grade 12 and is a secretary at UCT. His younger sister passed grade 12 and is a qualified nurse.

[551] IDT’s mother, IB, matriculated with university exemption. She registered for an accounting degree with UNISA and passed her first-year courses but had to abandon her studies when, following her parents’ separation, her father could no longer afford the fees. She worked at Bokomo as a filing clerk and then in credit control. She was made redundant in 2010 but got employment with Sasko as a general clerk in 2011. She was retrenched in September 2013. She believes that she was disadvantaged in the retrenchment process because of all the time she needed to take off for IDT. She has recently embarked on an 18-month early development childhood course at Northlink College, funded by a bursary. She was prompted to do so by her desire to enhance her skills in dealing with IDT. She hopes, once she has completed the course, to be accepted as a second-year student for a BEd at UCT or UWC.

[552] IB’s mother passed standard 9/grade 11. In 1996 she started a creche and day care centre in Belhar attended by about 60 children. She employs several teachers. This demonstrates some entrepreneurial and managerial flair.

[553] IB’s parents got divorced about eight years ago and she now sees little of her father. He passed standard 6/grade 8 and had fairly regular employment as an unqualified plumber though he is also reported to be a drug addict.

[554] IB has four siblings. One of her sisters, who is now about 24, passed grade 12 and is employed by Toyota Forklift as a junior transport controller. The two youngest sisters are still at school. Her brother, who is 20 and suffers from dyslexia, attended a special school.

[555] IB impressed me as an honest witness. She has a pleasant demeanour. She is warm, outgoing and intelligent. She said, and I accept as true, that she and her husband would have been ambitious for IDT and would have tried to ensure that he had more opportunities for advancement than they had enjoyed. They took out an education policy with Old Mutual to fund his tertiary education. She would have wanted him to get a degree and become a professional person.

[556] As described by IB, AD is more subdued. The impression Ms Auret-Besselaar obtained when interviewing IB (AD, though invited, was unable to attend) is that IB was somewhat frustrated at AD's lack of drive. He had let pass an opportunity for a job interview with Old Mutual. He seemed content to work in the family business.

[557] I accept that AD is not as extrovert or driven as his wife. This said, his decision to remain in the family business in the hope of one day taking it over is not a point of criticism. It is honourable and may turn out to be financially rewarding, even if his current earnings are relatively modest. Following their reconciliation, AD seems to have taken on an increasing share of IDT's care and development. He and IB were married at a young age. It must have been a great blow to learn that their first (and currently only) child was severely and permanently handicapped. It would have put a great strain on their relationship. Despite the recent employment of a facilitator, IDT's demands have left them little opportunity to pursue their own interests. The way they have dealt with the challenges is a credit to both their characters.

[558] Ms Auret-Besselaar suggested that AD rather than IB would have been IDT's primary role model and that this would have been less conducive to his advancement. I do not accept that view. IB's personality would have impressed itself on IDT. I am satisfied that AD would have given her his full support in IDT's educational upbringing. According to IB, AD would have been keen for IDT to obtain a formal artisanal qualification. He keenly felt his own disadvantage in lacking a formal qualification. If IDT had shown aptitude for tertiary education, AD would not have stood in his way.

[559] Given the family background and the changing political landscape in South Africa over the last 20 years, there is a reasonable possibility that IDT would not only have matriculated but gone on to university. However neither side contended that this was the scenario I should assume as probable for purposes of computing loss of earnings. Both Ms Donaldson and Ms Auret-Besselaar considered the most likely career path to be a three-year apprenticeship, culminating in formal qualification and employment as an artisan. Apart from a minor matter of timing, the

main difference between them is the remuneration IDT would have earned in following this career.

[560] I should mention at this stage that the parties have agreed: (i) that a net discount rate of 2,5% for salary inflation will be used in the actuarial calculation of lost earnings; (ii) that IDT's salary as an artisan would have peaked, in real terms, at age 45; (iii) on the way in which his real salary increases would have occurred from entry level to age 45; (iv) that IDT would have worked until 65 ; (v) that the only salary increases after age 45 would have been to keep pace with inflation. Accordingly, and apart from apprenticeship remuneration, the main issues I must decide are the entry-level salary and the peak salary at today's values.

PEC salary surveys

[561] PE Corporate Services ('PEC') issues annual salary surveys. Its surveys are the most extensive available in this country. In order to receive the survey a firm must make payment and contribute data. Given its cost (about R30 000 p/a), the survey covers only about 25% of persons in formal employment. According to the most recent PEC survey (for 2015), over 800 firms employing more than 1,5 million people participate.[112] Of these firms 33% are part of listed groups, 9% are public sector and non-profit employers, and 58% are private firms. The grading of firms in terms of numbers of persons employed is as follows: 1-50 employees – 24%; 51-100 employees – 11%; 101-250 employees – 24%; 251-500 employees – 12%; 501 or more employees – 29%.

[562] PEC provides salary information inter alia for the first, second and third years of artisanal apprenticeship and for various classes of artisans. For any particular class, salaries are furnished for differing levels of responsibility in accordance with the Paterson job grading system. There is a regional breakdown of salaries and 'all locations' salaries across five percentiles (10th, lower, median, upper and 90th).

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[112] Exhibit "W".

Plaintiffs' projected career path for IDT

[563] The plaintiffs' claim (quantified at R4 239 158) is based on the following model proposed by Ms Donaldson. Immediately after matriculating IDT would have entered a three-year apprenticeship (Paterson job grade B1) while studying at an FET (Further Education and Training) college. He would have been remunerated in the first year in accordance with the lower quartile all-locations salary indicated by the PEC survey, namely an annual guaranteed package of R83 755.[113] He would have been remunerated in the second and third years in accordance with the median quartile all-locations salaries (R149 599 and R150 017).[114] Immediately thereafter he would have entered employment as a qualified artisan. A qualified artisan would commence employment at Paterson job grade C1. Since one cannot say what type of artisanship IDT would have chosen, his remuneration should be determined with reference to PEC's 'Artisan-Other' survey, which according to Ms Donaldson would reflect lower earnings than specific artisanships. She proposes the lower quartile all-locations salary (R252 790).[115] IDT's salary would peak at age 45, by which stage he would be earning the upper quartile all-locations salary for a 'Foreman/Supervisor-Workshop' at Paterson job grade C4 (R509 744).[116]

Defendant's projected career path for IDT

[564] The defendant's Ms Auret-Besselaar criticised the use of PEC salary information on the basis that the majority of artisans are employed by smaller firms who do not participate in the survey. These non-participating employers according to Ms Auret-Besselaar pay considerably less than corporate employers. Ms Auret-Besselaar testified that it would be more realistic to use a blend of the minimum wages prescribed by the National Bargaining Council for the Electrical Industry ('the Electrical BC') and the Building Industry Bargaining Council, Cape of Good Hope ('the Building BC') and information contained in Robert Koch's 2016 Quantum Yearbook.[117]

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[113] "W" p 4.
[114] "W" pp 5-6.
[115] "W" p 7.
[116] "W" p 8.
[117] The extracts relevant to Ms Auret-Besselaar's model were handed in as exhibit "X".

[565] The Electrical and Building BCs prescribe minimum wages p/h. In order to translate this into annual remuneration one needs to make assumptions about hours worked. I do not have the full BC agreements but gathered from Ms Auret-Besselaar's evidence that employers are only obliged to pay two hours' remuneration on inclement days. Her assumption was that IDT would work eight hours p/d and 22 days p/m.

[566] Koch includes 'Earnings Guidelines' for claims for loss of income. In this part of his work he gives 'Corporate Survey Earnings' according to Peromnes levels (another system of job grading), 'Earnings in the Informal Sector' and 'Suggested Earnings Assumptions for Non-Corporate Workers'. In this last category he has an entry for 'Artisan/Tradesman/Truck Driver' and furnishes entry-level, median-level and peak-level annual salaries. The peak salary for this class of non-corporate worker is R308 000.

[567] She drew attention to the following statements in Koch's work: (i) that his corporate survey earnings reflect remuneration paid by the larger organisations that subscribe to the surveys conducted by PEC, Deloitte Touche and others, representing less than 25% of the total workforce; (ii) that industrial psychologists 'are reminded that it is misleading to cite formal sector earnings packages without stating the percentage chance that such earnings would have been achieved'; (iii) that a court which relies solely on corporate sector statistics 'runs a serious risk of over-compensating the victim'.

[568] Ms Auret-Besselaar's model was the following.[118] IDT would have taken six to eight months to find an apprenticeship. He would have completed a three-year apprenticeship, earning the average of the minimum wages prescribed by the Electrical and Building BCs. The said average would be R74 055 in the first year, R84 002 in the second and R105 265 in the third.[119] IDT would then have started

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[118] This was set out in an addendum handed up during the course of her evidence on 10 March 2016. The relevant pages, including the attached extracts from bargaining council wage determinations, were inserted in the defendant's expert bundle as 7/246A-G.

[119] These figures are arrived at by multiplying by 12 the monthly figures furnished by Ms Auret-Besselaar in para 2.2 of her addendum. Mr Donaldson was satisfied that Ms Auret-Besselaar had correctly translated the prescribed wages into monthly remuneration figures, taking into account Ms Auret-Besselaar's assumptions.

work as a qualified artisan. Although the average of the prescribed Electrical and Building BC wages for qualified artisans is R172 744,[120] IDT would probably have been paid less because (i) some employers are exempt from paying the prescribed wages; (ii) other employers de facto pay less (she referenced AD's remuneration as an example); (iii) because of inclement weather, artisans do not always qualify for full daily hours, which offsets overtime. She thus proposed a starting annual salary of R114 000 – R138 000.[121] The mid-range figure would be R126 000. She says IDT would have earned this figure for three to five years after which he would have started to get increases in real terms. She recommended a peak salary of R240 250, being the average of the (i) the mean of the two prescribed minimum wages for artisans (ie R172 744) and (ii) Koch's figure of R308 000 previously mentioned.

Discussion

[569] The salary information contained in the PEC survey and Koch's Yearbook is hearsay. This is inevitable in this field. However there is a difference in the quality of the hearsay. It is reasonable to infer that the PEC survey accurately captures the data furnished by the participating employers. There is a reasonably precise breakdown, indicating the employee numbers making up each figure. Koch's figures for non-corporate workers, on the other hand, are not really explained in his work. I do not suggest that he would not be able to substantiate them but he was not a witness and Ms Auret-Besselaar did not display a very sure grasp of the distinction between corporate and non-corporate employers or how Koch had arrived at his figures.

[570] I am willing to accept that many non-participating employers pay less than the amounts reflected in the PEC survey. On the other hand the distinction between participating and non-participating employers does not reflect a structural difference in the market; it is merely a distinction between those who find it worthwhile to participate in the survey and those who do not. There must be many successful

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[120] Arrived at by multiplying by 12 the two monthly figures furnished by Ms Auret-Besselaar in para 2.4 of her addendum and then taking the average of the two annualised amounts.

[121] Arrived at by multiplying by 12 the monthly range furnished by Ms Auret-Besselaar in para 2.5 of her addendum.

firms which do not participate but which have an interest in attracting and retaining good artisans. They have to compete with other employers, including those participating in the PEC survey. Koch observes that there are many smaller non-participating businesses which remunerate by having regard to the results of the surveys.[122] Conversely large participating companies such as listed entities may be more efficient than their smaller competitors. It is not generally characteristic of an efficient firm to pay for services at above a fair market rate.

[571] Ms Donaldson and Ms Auret-Besselaar agreed in a joint minute that South Africa suffers from a dearth of qualified artisans and that they are in high demand.[123] This is borne out by the chapter on South Africa in a 2013 joint publication by The World Bank and International Labour Organisation.[124] The history and status quo set out in this document, the contents of which were traversed during Ms Auret-Besselaar's testimony, point to the likelihood that initiatives to reverse this dearth will take many years.

[572] In my view Ms Auret-Besselaar's projection was unduly pessimistic and at odds with her concurrence in the joint minute that South Africa desperately needs qualified artisans. I cannot but think that there was at least some subconscious bias in favour of the side for whom she was called. When she was explaining how she arrived at her peak salary for IDT, I asked whether, if she were testifying for a plaintiff, she would have proposed Koch's figure of R308 000 (rather than an average of that figure and the lower prescribed wage). She said she probably would have done so though one would still have needed to consider a contingency deduction. I was also surprised at her view that in his initial three to five years of employment IDT would have earned even less than the prescribed minimum – not slightly less but about 27% less – an unfavourable shortfall which would take some years thereafter to eliminate.

[573] The picture she presented in her first report was even more gloomy: post-matric unemployment for six to eight months followed by employment for four to six

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[122] "X" at p 128.
[123] Joint minute para 1.3.
[124] Exhibit "AV".

years as an unskilled labourer then rising to the status of a semi-skilled labourer at Paterson BI level (the same job level as a first year artisan) and increasing his Paterson level every six to eight years until he reached B4 and a 50% - 75% chance of rising to B5.

[574] I regard IDT's family circumstances as indicating on balance that he would have been an able artisan with a work ethic which employers would have valued and with at least some of the initiative required for taking on responsibilities above artisinal work.

[575] On the other hand I cannot altogether absolve Ms Donaldson from undue generosity and there were times in cross-examination when she seemed unwilling to make fair concessions. I think the suggested progression to the upper quartile of a C4 position, while possible, is not the likely scenario. Her model not only assumes that IDT would rise to the position of a foreman, potentially supervising up to 25 subordinates and operating in a unionised setting, but that he would advance to the upper echelons of earners employed by the sorts of firms participating in the PEC survey. There are fewer and fewer positions as one goes up the ladder. The dearth of artisans at lower levels may not be matched by opportunities at higher levels, at least not by the time IDT would have been reaching the peak of his career. She conceded that her projection might call for moderation if one did not accept Ms Bubb's view that pre-morbidly IDT was of 'average to high-average' intellectual ability.

[576] If I were minded to use exact PEC figures, I would select the Western Cape figures rather than the all-locations figures. However I do not intend to adopt exact PEC figures and in any event the differences are not substantial, the Western Cape figures sometimes being higher and sometimes lower.

Conclusions

[577] I must provide exact assumptions for the actuaries even though precision is factually spurious. The exercise is by its nature speculative.

[578] In regard to the question whether there would have been some delay before IDT obtained an apprenticeship, I accept Ms Donaldson’s view that IDT’s parents would have taken steps, as IDT came to the end of his matric year, to find him a position. Since it is common cause that he would have found an apprenticeship, I see no basis for making the adverse assumption that there would have been a delay in getting it. In the ordinary course IDT would have matriculated at the age of 18 (ie at the end of 2027). His apprenticeship would thus have started in January 2028.

[579] For three years he would have been employed as an apprentice. Given that he would start without experience or skills, an employer would probably have little incentive to pay much above the prescribed minimum. The PEC lower quartile figure proposed by Ms Donaldson for the first year is very close to the minimum prescribed by the Building BC (the Electrical BC minimum is lower). On this basis I consider that his remuneration in the first year of apprenticeship would be R82 000.

[580] Ms Donaldson proposed that in the second and third years of apprenticeship IDT would earn at the PEC median quartile. This would involve a disproportionate increase of 79% from the first year to the second year, which seems implausibly high, and an increase of 3% from the second year to the third year, which seems implausibly low.[125] It is instructive to consider the rates of increase in the prescribed minimum wages, namely 19% and 11% in the case of the Electrical BC and 10% and 37% in the case of the Building BC. The increases in the average of the prescribed minima are 13% and 25%.[126] These rates of progression are likely to reflect more accurately the increasing value of the apprentice over the three-year period.

[581] I thus consider that the starting apprenticeship salary of R82 000 should be increased by 15% in the second year (to R94 300) and by 30% in the third year (to R122 590). The third-year salary on this basis turns out to be about midway between the amounts proposed by Ms Donaldson and Ms Auret-Besselaar.

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[125] She assumes a progression R83 755 – R149 599 – R150 017.

[126] The Electrical BC progression is R64 680 – R76 574 – R85 084. The Building BC progression is R83 430 – R91 430 – R125 445. The median is R74 055 – R84 002 – R105 265.

[582] Both the PEC data and the prescribed wages show that there is a substantial increase from the third year of apprenticeship to the first year as a qualified artisan. In like-for-like PEC comparisons the all-locations increase is 96% in the lower quartile[127] and 95% in the median quartile.[128] In the case of the Electrical BC the increase is 100%.[129] In the case of the Building BC the increase is 40%,[130] this comparatively low increase perhaps offsetting the unusually high increase of 37% from the second to third year of apprenticeship. The median rate of increase in the prescribed minima is 64%.[131]

[583] I consider that an increase of 75% from the third year of apprenticeship to the first year of artisanship would be realistic. This gives a commencement salary as an artisan of R214 533. This happens to be very close to the PEC 10th percentile (less than Ms Donaldson's lower quartile figure but about 24% higher than the prescribed minimum and about 70% higher than the amount proposed by Ms Auret-Besselaar).

[584] I have PEC salary levels for Paterson job grades C2 and C4 (the latter proposed by Ms Donaldson) but not C3. Again, and rather selecting an exact salary from a particular position and quartile, I propose to look at real increases to the peak salary at age 45. Ms Auret-Besselaar proposed a commencement salary of about R126 000, with real increases starting from the fourth to sixth year of employment and peaking at R240 259, ie an increase of 91% over 19 years. Ms Donaldson proposed a starting salary of R252 790 and a peak salary of R509 744, a real increase of 102% over 24 years. Both of these may be distorted, in Ms Donaldson's case mainly by an over-optimistic end salary and in Ms Auret-Besselaar's case mainly be an unduly pessimistic starting salary. If one looks at like-for-like PEC all-locations comparisons, the increases from C1 to C4 for the 10th, lower and median quartiles are between 46% and 50%.[132] However any particular PEC quartile would include people with differing years of experience. It is reasonable to suppose that in his first year of artisanship IDT would be at the lower end of salaries for his job

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[127] R128 818 – R252 790.

[128] R150 017 – R292 702.

[129] R85 084 – R170 180, based on an annualisation of Ms Auret-Besselaar's monthly figures.

[130] R125 445 – R175 307.

[131] R105 265 – R172 744.

[132] R216 905 – R312 185 (10th). R252 790 – R379 722 (lower). R292 902 – R429 793 (median).

grade and that as he peaked at age 45 he would have moved to the higher end, including potentially into a higher percentile bracket.

[585] Accordingly I intend to base the peak salary on a real increase over 24 years of 60% which would equate to a compound increase in salary of around 2% p/a. This yields a peak salary of R343 253. By way of a comfort check, I observe that this would put IDT at around the PEC Western Cape median quartile for a C2 position (Foreman/Supervisor 2) and between the 10th and lower quartiles for a C4 position. This seems fair without being unduly generous.

Contingencies

Earnings

[586] Since I have done my best to determine a probable career path, I see no basis for taking into account, as a contingency, that IDT would not have had the ability to do as well as I have assumed. While that is reasonably possible, it is also reasonably possible that he would have done better. I have tried to steer a middle course.

[587] No contingency deduction in respect of inflation and taxation is justified. Actual inflation and taxation may be more or less than the agreed actuarial assumptions.

[588] The main circumstances justifying a contingency adjustment are (i) that in the pre-morbid scenario IDT's earning capacity might have been cut short or interrupted for unrelated causes; (ii) that the South African economy, whether because of domestic or international circumstances, might not perform sufficiently well to provide employment for artisans at current salary levels or in the numbers currently anticipated.

[589] In regard to the first of these factors, the quantified loss of earnings will take into account IDT's reduced LE. He will not be receiving compensation for the earnings he might otherwise have earned between the ages of 55 and 65. The

contingency for which I must allow is thus that pre-morbidly he might have been incapacitated before reaching the age of 55, not 65.

[590] The defendant's counsel raised for consideration that an artisan's work might be more hazardous than that of an office worker. There is no evidence of that. The risks from a sedentary lifestyle might be greater.

[591] In *Southern Insurance Association Ltd v Bailey NO* 1984 (1) SA 98 (A), which concerned a child injured at the age of two, the lost earnings were based on an assumption that she would have worked to age 60. Nicholas JA observed that the fortunes of life are not always adverse. He nevertheless thought that the trial judge's contingency deduction of only 10% was 'unduly generous' (ie to the claimant) and increased it to 25%. A like deduction in respect of a victim injured in early childhood was made in *Nanile v Minister of Posts and Telecommunications* C & H Vol IV A4-30. In *Mautla v Road Accident Fund* C & H Vol V B3-1, also a child victim case, the deduction from pre-morbid earnings was 20%. In *S v Road Accident Fund* [2015] ZAGPPHC 1125 Fourie J, with reference to these and other cases, made a contingency deduction of 25% from the pre-morbid earnings of a child injured at the age of three and who would have worked to age 65.

[592] In *RAF v Guedes* 2006 (5) 583 (SCA) the court made reference to the trial judge's apparent reliance on, but misunderstanding of, Koch's sliding scale for contingencies (0,5% p/a to retirement, yielding approximate deductions of 25%, 20% and 10% for children, youths and middle-aged persons respectively). Zulman JA did not express a view as to the merits of Koch' suggestions but, based on the trial judge's misdirection, increased the pre-morbid contingency deduction for a 26-year-old woman from 10% to 20%.

[593] In *Lochner v MEC for Health and Social Development, Mpumalanga* [2013] ZAGPHC 338, where the victim was rendered blind at birth and was six at the time of trial, Tolmay J said that the courts 'normally apply a contingency of 15% pre-morbid when all things are more or less equal' (para 79) and then applied 20% because the victim was young and the future period long. Tolmay J's statement

regarding 15% does not appear to be borne out by the other cases I have mentioned.

[594] Importantly, though, reduced LE did not feature in any of these cases. Lost earnings were computed up to a normal retirement age. The chance that pre-morbidly IDT might have died before reaching the age of 55 (his post-morbid EDA) is significantly smaller than the chance that he might not have reached age 65. And the risk of death in IDT's peak-earning period (ie up to age 45) would be lower than in the flat years (45 –55). Life tables bear this out. According to K2, of the male cohort alive at age seven, only 7% will die before age 45. This increases to 15% by age 55 and 31% by age 65. Almost half the deaths occurring between ages 7 – 65 will occur in the age group 55 – 65.[133]

[595] K2 would thus support a mortality contingency of 15% for IDT. However death is not the only vicissitude which could have impaired his earning capacity. He might have suffered non-fatal injuries or illnesses.

[596] As to the risk of an adverse change in economic circumstances, there is the countervailing possibility that economic growth may exceed current expectations and that qualified artisans will be even more in demand in future years than they are now. The experience of global and domestic economic circumstances over the last decade might cause some unease or caution but I would not accord this factor significant weight.

[597] In *Singh*, where damage to earning capacity was, unlike the cases I have mentioned, assessed with reference to the victim's reduced LE, the trial judge made a 15% contingency deduction in respect of a boy whose LE he assessed at 30 years. In the SCA the majority thought the boy's LE was 26 years (but did not intervene) while the minority would have increased the LE to 35 years. Neither the majority nor the minority thought that there was any reason to interfere with the 15% deduction though Snyders JA expressed the view that it might have been somewhat 'conservative', ie adverse to the child (para 208).

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[133] Exhibit "H". The cohort at age 7 comprises 98 448 lives. The reduced cohort is 91 084 at age 45, 83 741 at age 56 and 67 006 at age 65.

[598] In the present case IDT’s LE is 48 years, a good deal longer than the maximum estimate in *Singh.* However in view of the fact that his lost earnings will exclude the ten years from 55 to 65 and that his risk of death up to his peak earning age would have been low, a 25% deduction would definitely be too high. Indeed I think the deduction should be closer to 15% than 25%.

[599] In all the circumstances I consider that a 17,5% contingency deduction should be applied to the actuarially calculated lost earnings.

Future medical costs

[600] The defendant’s counsel raised the possibility of applying a contingency deduction to future medical costs. A contingency deduction was made by the court a quo in *Singh*, a discretionary decision in which the SCA did not interfere. A similar approach was followed by Fourie J in *Buys v MEC for Health and Social Development, Gauteng* [2015] ZAGPPHC 530. The deductions in these cases were 10% and 15% respectively. The defendant’s counsel said that they did not ask for a global contingency deduction of this kind.

[601] In *Singh* the deduction was made because the judge was doubtful about some of the medical expenses (eg items allowed at the maximum tariff where less might be charged, doubts as to the effectiveness of some of the therapies, whether therapy programs would run their full course, whether they would be diligently carried out, the difficulty of accommodating all of them in the child’s schedule and so forth – see para 107). While I make no pretence to be able to predict IDT’s future expenses precisely, I have attempted in each instance to determine whether the intervention would be reasonable and, if so, its reasonable cost. In regard to time-based interventions, particularly physiotherapy and psychotherapy, I have taken into account what can reasonably be accommodated in IDT’s schedule. I do not regard the possibility that the costs will be less than I have assessed them as exceeding the opposite possibility. This includes the possibility that new treatments, not yet dreamt of, may become available which might reduce or increase the overall expenditure on IDT’s health.

[602] The factors mentioned in *Buys* in support of the contingency deduction were: (i) the possibility of errors in the estimation of LE; (ii) the possibility of illness which might have occurred in any event; (iii) inflation or deflation; (iv) 'other risks of life, such as accidents or even death, which would have become a reality sooner or later, in any event'. I do not find these compelling:

- As to (i), I have determined IDT's post-morbid LE on the basis of evidence before me. Things may turn out differently but that could cut both ways. IDT's life might be longer or shorter. One might think intuitively that he is more likely to die in the 48 years from now to age 55 than survive beyond age 55 but that may not be sound. Dr Strauss' life table for IDT's cohort as from age seven reflects slightly fewer death in the group aged 7 – 55 than in the group aged 55 and beyond.[134]
- As to (ii), there is no evidence that the illnesses of which IDT may have been at risk pre-morbidly will not still be a risk for him. He is not being compensated for the cost of treating them. There is no notional saving post-morbidly.
- As to (iii), the parties here have agreed a net discount rate. There is no evidence that medical inflation is more likely to differ from the agreed rate in one direction than the other.
- Factor (iv) seems to be a different way of expressing factor (i).

[603] Accordingly I do not intend to make a general contingency deduction from medical expenses. This is by no means novel (see, eg, *Van Deventer v Premier Gauteng* [2004 TPD] C & H Vol V E2.1; *De Jongh v Du Pisanie NO* 2005 (5) SA 457 (SCA) paras 48-49; *Lochner v MEC for Health and Social Development, Mpumalanga* supra paras 32, 37 etc). I have borne in mind the possibility of item-specific contingencies but have not considered it appropriate to make deductions save for the psychiatric claims which were advanced and have been allowed on the basis of a percentage risk. (A number of items were settled on the basis of a percentage risk.)

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[134] Exhibit "J". The table reflects a cohort of 100 000 at age seven, with 42 189 deaths to age 55 and 44 254 deaths from age 55 – 80.

General damages

[604] The plaintiffs have claimed R1,9 million as general damages. In argument the plaintiffs' counsel supported an award of R1,8 million.

[605] The defendant's counsel submitted that I should award R850 000. In support of that figure they said that large awards drain the funds available in provincial health budgets and can cause significant detriment to the public at large. I disagree with this as a point of departure. There is a respectable argument for the contrary view, viz that the risk of substantial awards may motivate organs of state to provide better service. I was referred to *Minister of Safety and Security v Seymour* 2006 (6) SA 320 (SCA), an unlawful arrest and imprisonment claim, where Nugent JA said (para 20) that our courts have not been 'extravagant' in compensating such wrongs and that one needs to bear in mind when making awards 'that there are many legitimate calls upon the public purse to ensure that other rights that are no less important also receive protection'. The learned judge of appeal was not advocating parsimony but warning against undue generosity. I do not think there should be a bias for or against the defendant.

[606] I have a wide discretion to arrive at a fair amount having regard to IDT's pain and suffering, disfigurement, disability and loss of amenities of life. Most of these prejudicial effects will be apparent from this judgment. I should nevertheless itemise those which have weighed most with me. Although they do not all fall neatly within a particular category, I shall group them as seems most appropriate. In assessing their significance I take into account the beneficial and palliative effects of the medical interventions factored into my award for future medical expenses.

[607] In regard to pain:

- IDT's athetoid movements have been and will for the rest of his life be a source of muscle fatigue and stress.
- His impaired gross motor functioning will cause him to fall more often. Apart from the pain and suffering of the four fractures which the parties agree he

will probably sustain and of the related surgical interventions, he will from time to time suffer soft tissue injuries.

- He is at increased risk of arthritis.
- IDT's condition has required and will require him to undergo a range of health care interventions, including increased dental treatment, urological investigations and physiotherapy. In July 2012 most of his milk teeth were removed due to rampant decay.[135] These interventions have entailed and will inevitably entail a measure of discomfort.
- He suffers from heightened skin sensitivity.
- He has suffered ear infections more frequently than a healthy child.

[608] In regard to suffering:

- He is practically deaf. In all probability his limited auditory world is a jumble of unordered sounds with perhaps the occasional discernment of simple communications.
- IDT does not and probably never will have expressive speech. Coupled with his deafness, this deficit will cause the inevitable frustrations and despair that go with an inability to communicate effectively and efficiently.
- His athetosis means that virtually all daily activities, such as dressing, eating and washing, are an effort.
- He has an increased risk of epilepsy (a 20% chance as agreed).
- He has an increased risk of psychiatric disorders such as depression and anxiety. Medical intervention may not succeed in reducing or eliminating the unpleasant symptoms.
- He will know that he is different from others though he will not have the horror of living with the memory of a better life.

[609] In regard to disfigurement:

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[135] See Dr Lofstedt's report at 6/239. Impairment (dysplasia) of dental enamel is a known effect of kernicterus.

- IDT's athetosis causes him to stand out from other people. There is evidence that children find his uncontrolled jerky movements and facial contortions frightening and tend to shun him. Less understanding adults might find his physical presence off-putting.

[610] In regard to loss of amenities of life:

- IDT will never be able to run or partake in sport.
- He will have great difficulty in developing friendships, particularly in adulthood.
- He will not be able to marry, have intimate relations or father children.
- His world will become even more lonely if one or both parents predecease him.
- He has reduced opportunities for getting out of the home and experiencing the pleasures of life. Travelling beyond the Cape Peninsula for holidays is likely to be a rare event.
- His inability to hear and speak and the uncertain prospect of his ever being able to read effectively will mean that a host of leisure activities will be closed to him or will give him reduced pleasure.
- He will never have the satisfaction that can come from enhanced education, gainful employment and from significant achievement.

[611] Although a trial court should not slavishly follow previous awards, one can have regard to them in getting a general sense of the appropriate range (*Protea Assurance Code Ltd v Lamb* 1971 (1) SA 530 (A) at 536) and in so doing one should have regard to changes in the purchasing power of money (*SA Eagle Insurance Co Ltd v Hartley* 1990 (4) SA 833 (A) at 841D; *Minister of Safety and Security v Seymour* 2006 (6) SA 320 (SCA) para 16-17).

[612] In the *Singh* case[136] Koen J awarded R1,2 million as general damages which would be more than R1,8 million if updated for inflation. There the child, Nico, who

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[136] *Singh (1)* [2010] 3 All SA 187 (D).

was 6½ at the time of judgment and whom the trial judge found to have a LE of 30 years, was unable to walk and lacked self-feeding ability. On the other hand Nico had no loss of hearing. He did not have expressive speech though that may have been solely because of oromuscular difficulties. IDT's lack of expressive speech is a result not only of oromuscular difficulties but of impaired language development in the brain due to deafness. As here, there seems to have been difficulty in reaching a clear view about Nico's cognitive abilities. Koen J did not say whether he regarded Nico as having insight into his condition. (General damages were not in issue in the appeal though Snyders JA in passing commented adversely on the inadequacy of the reasons for the award – para 165.)

[613] I am inclined to agree with the defendant's counsel that the cases Koen J cited are difficult to relate directly to the circumstances confronting him and me. They concerned paralysing injuries suffered by adults. In some of them, where the awards in current terms exceeded R1,8 million, the victims retained full mental acuity and were effectively 'locked in' and required constant care. While their circumstances were more appalling than IDT's, they generally had significantly lower LE.

[614] In *S (obo S) v MEC Health Gauteng* [2015] ZAGPPHC 605, another CP case, Louw J awarded R1,8 million as general damages. The child's physical impairments were considerably more severe than in *Singh* or the present case. On the other hand the child had no insight into his condition. His LE was 19 years. In the present case IDT does, I find, have some insight into his condition and he will have to live with it for the next 48 years. Some of his suffering will be associated with his appreciation, even if diminished, that he is different from others and unable to enjoy all the things that they can enjoy and with his capacity for feeling loneliness.

[615] The defendant's counsel referred me to the fully reasoned award of general damages made by Saldulker J (as she then was) in *Megalane NO v RAF* [2006] C & H Vol V A4-10 paras 63-121. There an 11-year-old boy suffered severe brain injury resulting in significant cognitive impairments and executive functioning, speech difficulties and bilateral hemiparesis with severe spasticity of all four limbs. He was generally wheelchair-bound though he could walk limited distances with strong

support. His LE was 49 years. He was found to have some insight into his condition and retain some memory of his former life. The judge's award in current terms was R1,831 million. The boy's circumstances in *Megalane* were somewhat more dire than IDT's.

[616] In *Matlakala NO v MEC For Health, Gauteng Provincial Government* [2015] ZAGPJHC 223 Keightley AJ made an award in current terms of R1,575 million in respect of a boy who suffered brain injury at birth due to medical negligence. Unlike IDT, he was completely unable to walk and had the worst GMFCS classification, was uncommunicative, unalert and uneducable. His higher mental functions were severely disabled. He needed constant care for even the most basic functions. His LE does not appear from the judgment. While in some respects the child's deficits were materially worse than IDT's, he appears not to have had mental capacity for insight into his condition.

[617] The plaintiffs' counsel referred me to the judgment of Pickering J in *Bonesse v RAF* [2014] C & H Vol VII A3-1 in which he awarded general damages of R2,5 million. The victim was a 13-year-old girl who, following brain damage in a car accident, was left doubly incontinent, could self-feed though messily, had limited ability to manage bi-manual tasks and was dependent on a wheelchair for mobility. She was unable to sit in the wheelchair for more than an hour. She had no meaningful self-directed social interaction. The brain damage had caused frontal dementia with an inclination to be aggressive, dysinhibited and emotionally labile. Her working memory was substantially impaired and she was severely mentally retarded. She had some insight into her condition and what she had lost. Mr Irish described this award as 'an outlier'. He also directed my attention to the unreported judgment of *Paterson NO v RAF* Case 10671/05 which Pickering J cited and where the updated award in 2014 exceeded R2,2 million. That was also a case of an adult victim who knew what she had lost.

[618] Money cannot compensate IDT for everything he has lost. It does, however, have the power to enable those caring for him to try things which may alleviate his pain and suffering and to provide him with some pleasures in substitution for those which are now closed to him. These might include certain of the treatments which I

have not felt able to allow as quantifiable future medical costs (eg NMES therapy, SPIO suits, psychotherapy and physiotherapy in excess of the allowances I have made, e-books and the like).

[619] Taking all things into account I consider that R1,8 million is a fair award for general damages.

Remaining trust issues

[620] I have already dealt with the top-up and clawback provisions. I deal now with the remaining trust issues.

Plaintiffs as founders?

[621] The defendant initially contended that the MEC should be the founder of the trust. The plaintiffs objected to this and pleaded that they should be the founders. The defendant no longer contends that the MEC should be the founder. The defendant submits that the court itself should be the founder. The defendant's counsel submitted that if the court ordered the plaintiffs to register a trust as founders there was a risk that they might later contend that it was not their intention to establish a trust in the form proposed by the court.

[622] I do not intend to go into the question whether, in the case of a court-ordered trust, the court itself could be treated as the founder. The plaintiffs are IDT's parents. Even if it has only symbolic significance, their recognition as founders of the trust is entirely appropriate. They have agreed that the award should be paid to a trust. To the extent that there is disagreement on the terms of the trust, the plaintiffs have submitted to my jurisdiction to determine the disputed terms. It is fanciful to suppose that they could or would challenge the binding force of the court's order.

Geographic accessibility

[623] The defendant's proposed trust deed contains a provision that the case manager must be 'geographically accessible' to the beneficiary.[137] The plaintiffs object to this qualification.

[624] I agree with the plaintiffs' submission that the qualification should not be included. Apart from anything else, the expression is inherently vague. From a practical perspective, those responsible for the appointment of the case manager (which is to be made by the trustee in accordance with the defendant's selection made from three candidates proposed by the parents or next of kin) are unlikely to appoint a case manager who is too distant to make case management practical or cost-effective. I doubt whether a suitably qualified professional would accept a case management assignment in such circumstances.

[625] The parents, trustee and proposed case manager would also take into account my decision to exclude fees for travel time in computing the future cost of case management. While my judgment will not bind the trustee in regard to future expenses to be incurred for IDT's benefit, the parents and trustee will be aware of the risk that the payment of fees to a case manager for travel time might be successfully challenged as unreasonable or unnecessary.

Co-residence

[626] The defendant's trust deed contains a provision which confers on the trustee the power, in its discretion, to allow 'interested parties' (in context this would primarily be IDT's parents or next of kin or curator ad personam) to use and enjoy any property owned by the trust on such terms and conditions as the trustee may determine subject to the proviso that the costs of such use should not be borne by the medical fund.[138]

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[137] Clause 19.2.
[138] Clause 22.9.

[627] The plaintiffs have no objection to a provision that the medical fund should not bear any costs brought about by the enjoyment of trust property by interested parties. They object, however, to a provision which allows the trustee to determine whether they or IDT's next of kin should be entitled to the enjoyment of trust property. The trust is likely to acquire a residential property for IDT. An agreed item of damages is the cost of adapting a residential property for IDT's special needs. It is likely that his parents or next of kin will reside with him in the house.

[628] It seems to me to be inconsistent with the notion of trust property that someone other than IDT (as the beneficiary of the trust) should be entitled to use trust property without the trustee's consent. On the other hand it is perfectly understandable that IDT's parents, and in the event of their demise his next of kin, would wish to reside with him. That will probably be in IDT's best interests. I think a fair balance would be struck by a provision to the effect that an interested party may have the use or enjoyment of trust property with the consent of the trustee, which consent shall not be unreasonably withheld. There should also be a provision that any costs reasonably associated with such use or enjoyment shall not be defrayed out of the medical fund.

The parents as co-trustees?

[629] The proposed trustee is Nedgroup Trust (Pty) Ltd ('NGT'). The plaintiffs do not wish to be appointed as co-trustees though they will abide the court's decision if I conclude that one or both of them should be so appointed.

[630] Counsel for the parties are agreed that in the circumstances I should not compel either of the plaintiffs to become a co-trustee with NGT.

[631] Mr Dutton for the amicus devoted a considerable part of his written and oral submissions to the desirability in general that a family member should be a co-trustee of a personal injury trust established for the benefit of a child.

[632] Where a parent wishes to be a co-trustee, a court would naturally give careful consideration to making such an appointment. However trusteeship comes with

considerable responsibilities. Unlike the position of the founder, the office of trustee is neither transient nor symbolic. While trustees can agree to delegate certain functions to one of their number, this does not relieve them of responsibility in the event of default. The administration of this trust calls for financial and other skills which the parents cannot reasonably be expected to have.

[633] I have been informed that NGT, as the proposed trustee, has furnished the parties with proof that it has appropriate professional indemnity cover. On this basis they have agreed to waive the requirement for security. Although this aspect was not mentioned in argument, I can see that the defendant and the Master would not necessarily take the same attitude towards a family member. It is unlikely that a family member could obtain appropriate insurance.

[634] I think I should also take into account that the parties have dealt with NGT on the basis that it will be the sole trustee. Trusteeship could well be more burdensome for NGT if there were a family member as a co-trustee.

[635] Once one accepts that a substantial award of damages should be paid to a trustee or curator, there is inevitably a dilution of the control which the child’s guardian would normally have over the money. That, after all, is one of the reasons for appointing a trustee or curator. Even if one of the parents were appointed as a co-trustee, the professional trustee could veto a decision proposed by the parent.

[636] Mr Dutton referred me to the judgment of Marshall QC in *SM V HM* [2011] EWCOP B30 which contains an exhaustive analysis of the considerations to be taken into account by the English Court of Protection when deciding whether to authorise the payment of damages to a trust rather than a deputy, the latter being akin to our curator bonis. Among the fundamental considerations, in her view, was the availability of a member of the child’s family able, willing and suitable to act as a co-trustee (paras 59-60). In general the judge was sceptical about the claimed advantages of trusts, including supposed cost advantages, over deputyship. She interpreted the legislation as laying down deputyship as the norm, with a trust only to be authorised if the person seeking its establishment can show a clear and significant overall advantage.

[637] In England the position of a deputy is extensively regulated by the Mental Health Care Act 2005. One can infer from Marshall QC's judgment that the institution is effective and is reliably regulated. The same considerations do not necessarily apply here. The judge thought that having a family member as a co-trustee would result in the conduct of the professional trustee being more closely scrutinised. She was particularly concerned that the fees of a professional trustee, unlike those of a deputy, were not regulated. Fees might thus 'drift without any check' (paras 114 and 169).

[638] Whatever the merits of these and other considerations may be in England, I am not convinced of their applicability here. We do not have legislation which decrees curatorship as the default position, even if hitherto that has been the more common procedure. If the parents or next of kin cannot, as interested outsiders, be relied upon to take a diligent interest in the professional trustee's conduct, why should one assume that they will be more diligent as co-trustees? It is usual to appoint a single professional person as a curator bonis and I cannot see why this should in principle be regarded as unacceptable in the case of a trustee. In regard to unchecked fees, the problem can be addressed, as has been done here, by specifying the fees in the trust deed (an ad valorem charge, not hourly fees).

[639] I do not have evidence as to the likely costs of a curatorship as against a trust. (The prescribed rate for curators is 6% on income collected and 3% on distribution or payment of capital on termination of the curatorship.[139]) In *SM v HM* the defendant settled the claim at a significant discount and there was no specific allocation to the cost of administering the award. The defendant was not involved in the subsequent proceedings to establish a trust. If administering the trust were more expensive than deputyship, this would have reduced the amount of the settlement available to meet the child's needs. One can thus understand the court's concern to know what the competing cost scenarios were. In the present case, by contrast, the defendant joins the plaintiffs in asking for the establishment of a trust. They have agreed upon the trustee's fees. There will be a separate award for the full net present value of the anticipated costs of administering the trust over IDT's full

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[139] Regulation 8(3) of the regulations promulgated under s 130 of the Administration of Estates Act 66 of 1965.

expected life span (see below). If trusteeship in the present case were to be more expensive than curatorship, it is not an increased cost which will prejudice IDT. Rather, it is a cost which both sides are willing to bear for the other advantages of trusteeship.

[640] The appointment of a sole professional trustee naturally does not mean that the parents have no voice. Both versions of the trust deed provide that the parents are among the interested parties who will have access to the trust's records. They will have a significant role to play in the appointment of the case manager. I would expect a professional trustee, in the proper discharge of its duties, to take due account of the parents' wishes. If this were not done an application for the trustee's removal might succeed.

[641] However, and to place the matter beyond doubt, I think the following additional provisions should be included in the trust deed:

- that one of the functions of the case manager is to act as an intermediary between the parents or next of kin and the trustee in order to convey any requests, wishes, views or preferences they may have in relation to IDT's care and well-being;
- that in the performance of its duties the trustee shall, without being bound to comply with same, have due regard to the reasonable requests, wishes, views or preferences of IDT's parents or next of kin in relation to the expenditure of trust funds for IDT's care and well-being.

[642] Mr Dutton pointed out that the establishment of a trust links decisions about the child's patrimony to decisions governing his or her person. It is inevitably so that the vesting of an award of damages in a trustee or curator has the effect that the damages are not available to the parents for funding any expenditure, including medical expenditure, they wish to incur for IDT's benefit. The trust deed does not, however, take away the right of the parents to incur expenditure for IDT's benefit if they have the funds to do so. The trust deed also does not take away the parents' parental responsibilities and rights as set out in the Children's Act 38 of 2005.

[643] Furthermore the provisions of s129 of the Children's Act in relation to consent to medical treatment and surgical operations will remain applicable. There are three potential scenarios in relation to any particular medical intervention:

- The typical scenario would involve two relevant decisions, namely (i) consent to the treatment by the parents or other relevant person in terms of s 129; and (ii) a decision by the trustee to fund the expense.
- If the trustee considers that IDT should receive a particular medical intervention to which the parents do not consent, s 129 provides for substitute consent in appropriate circumstances. If consent cannot be obtained, the trustee cannot insist that IDT be subjected to the treatment.
- If the parents consider that IDT should receive a particular medical intervention which the trustee is not willing to fund, they would need to fund it themselves or forgo it or take action against the trustee if its decision were impeachable.

The second and third of these scenarios are likely to be rare. At the risk of stating the obvious, I should add that if IDT becomes capable of making his own decisions in regard to medical treatment, the required consent will his, not anyone else's.

[644] I did not understand either Mr Irish or Mr Budlender to adopt a contrary position in relation to the provisions of the Children's Act. However, to place the matter beyond doubt I think a provision should be added in the trust deed to the effect that its provisions do not derogate from the provisions of the Children's Act relating to IDT's rights as a child, parental responsibilities and rights, and consent to medical treatment and surgical operations.

[645] It is convenient here to mention another matter raised by Mr Dutton, namely that the creation of a trust has the potential to bifurcate IDT's patrimony – the award will be held in trust whereas other assets will have to be held by his parents or a curator bonis. I do not think this raises any real difficulty. The draft trust deeds authorise the trustee to accept donations and inheritances. IDT's only realistic source of additional assets is by way of inheritance. If he inherits an estate of any

substance, the executor could transfer it to the trust. For obvious reasons such inheritance would not form part of the medical fund.

Cost of administering the trust

[646] It is common cause that my award of damages should include the present value of the future cost of administering the trust. The parties and NGT have agreed that the trustee's remuneration will be 1% p/a of capital under administration and 2% of the residual capital on termination of the trust. The capital under administration will not include the present value of the cost of administering the trust.

[647] The capital under administration will be reduced by permissible legal costs net of any taxed costs recovered from the defendant. For this reason it will not be possible to make an actuarial calculation of the administration costs until a bill has been drawn and taxed. In their heads the defendant's counsel record a tender to pay NGT a provisional amount of R2 million in respect of administration costs pending their final quantification.[140] This exceeds the provisional sum of R300 000 requested by the plaintiffs as a 'robust interim award'.[141] In the light of the dispute mentioned below, it would perhaps be safer if I were to reduce the provisional sum to R1 million.

[648] There is a dispute as to whether the costs of administration are to be included in the damages award for purposes of calculating the cap on the plaintiffs' attorneys success fee. This question will stand over for later determination.

IDT's rights

[649] The discussion thus far has been premised on the assumption that IDT will never be capable of managing his own affairs or have the capacity to litigate without assistance. It is too early to say whether that will be so. Although the parties themselves did not raise the issue, I think it desirable to include in the trust deed a provision that if, upon attaining majority, IDT has the mental capacity to institute

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[140] "DH15" para 82.

[141] Full heads para 4.7.

legal proceedings without assistance, he shall have the right to apply to court for the variation and/or termination of the trust and that upon such application the court may in its discretion make such order as it thinks just and equitable in all the circumstances.

[650] The insertion of such a provision would not mean that termination or variation would be there for the asking. The circumstances in which the trust was established, including the circumstances of the present litigation, and its subsequent history might well militate against the termination or variation of the trust but IDT should at least in such circumstances have the right to be heard on the question.

Conclusion and order

[651] On several occasions during the trial the plaintiffs' counsel questioned the propriety of Dr Bass' conduct. He is a medical doctor employed by the defendant to oversee and coordinate its response to medico-legal claims. In fairness to him I must record that on the evidence before me the insinuations were unjustified.

[652] The interim payment of R1,5 million must be deducted from the total amount payable in terms of this judgment. This will be formally incorporated in the next order (ie once actuarial calculations have been done). I record that counsel agreed that no adjustment is required for inflation or interest between the date of the interim payment and the date of my judgment.

[653] I shall deal with interest in the next order. Since future medical expenses and lost earnings are based on current values, there will be no interest pre-dating the date of judgment. The plaintiffs' counsel confirmed this. In regard to past expenses, these appear to have post-dated the interim payment and so will probably not attract interest but the parties can address me on this if necessary before the next order is made.

[654] Costs by agreement stand over.

[655] I make the following order:

[1] All calculations which depend on IDT's life expectancy must be made on the basis that his life expectancy is 48 years from 12 January 2016, ie that his expected death age is his 55th birthday.

[2] The disputed items of future medical and related expenses must be calculated on the basis of the assumptions determined in appendix 1 to this judgment. Save where otherwise specified, the first outlay of expense in respect of any item shall for calculation purposes be assumed to have been incurred on the date of this judgment and any replacement cycle in respect of that item shall be reckoned from such date. Where the replacement cycle changes after IDT reaches a particular age, the new replacement cycle shall, unless otherwise specified, start from expiry of the full cycle during which IDT reaches the said age.

[3] The disputed items of past medical and related expenses are determined as set out in appendix 2 to this judgment.

[4] The claim for loss of future earnings must be calculated on the basis of the assumptions set out in appendix 3 to this judgment.

[5] General damages are determined at R1,8 million.

[6] Within two weeks from the date of this judgment the parties may deliver notices identifying: (a) the matters, if any, which need to be clarified or amplified to enable actuarial calculations to be made of the lump sums payable in respect of future medical and related expenses and loss of earnings; (b) any matters which should have been determined by this order but which the court has omitted to determine.

[7] Within one month from the date of this judgment the parties must file a minute setting out the agreed actuarial calculations of the lump sums mentioned in 6(a), alternatively identifying the points of dispute relating to such calculations.

[8] Subject to 10 below, IDT's damages shall be paid to a trust, the terms of which shall accord with the determinations contained in paras 46-81 and 621-649 of this judgment.

[9] Within one month from the date of this judgment the parties must file a minute attaching the agreed wording of a trust deed according with the determinations mentioned in 8, alternatively identifying the points of dispute relating to such wording.

[10] The Master of this court is directed, within one month of the date of this judgment, to furnish a report regarding the parties' proposal that IDT's damages be paid to a trust. In that regard the Master's attention is directed in particular to paras 24-25, 46-81 and 621-649 of the judgment. The Master must indicate in the report whether he/she wishes to be heard on any matters arising from the report.

[11] Forthwith on delivery of this judgment the plaintiffs' attorneys must forward a copy of same to the Master, drawing his/her attention to 10 above. The plaintiffs' attorney must also furnish to the Master the parties' proposed trust deeds. If and when the wording of the trust deed is agreed, the plaintiffs' attorneys shall forthwith send same to the Master.

[12] If and when it has been finally determined that IDT's damages will be paid to a trust, the defendant shall pay a provisional sum of R1 million to the trust towards the cost of administering the award pending the actuarial calculation of such cost. The said sum shall not, pending any contrary determination in terms of 14, be reduced by legal costs or contingency fees.

[13] The actuarial calculation of the costs of administering the trust shall stand over until the completion of the various steps needed to enable the calculation to be made, including the determination of taxed and permissible legal costs.

[14] Costs, including the question whether the costs of administering the award are to be included in the damages with reference to which the plaintiffs' attorneys' contingency fees are to be calculated, shall stand over for later determination.

[15] Following receipt of the minutes referred to above and the Master's report, the court will give directions regarding the further conduct of the matter.

[16] Agreement on the content of the minutes referred to in 7 and 9 shall be without prejudice to the rights of the parties to apply for leave to appeal against the determinations made in this judgment.

ROGERS J

APPEARANCES

For Plaintiffs	Mr D Irish SC, Ms W Munro (& Ms K Pillay for final day of argument) Instructed by Joseph’s Incorporated Unit 1, Bompas Square 9 Bompas Road Dunkeld
For Defendant	Mr G Budlender SC (for final day of argument), Ms N Bawa SC & Ms M O’Sullivan Instructed by The State Attorney 4th Floor, 22 Long Street Cape Town
Amicus curiae	Mr IT Dutton & Ms S Campbell Instructed by: Centre for Child Law c/o Norman Wink & Stephens The Chambers, 50 Keerom Street Cape Town