NOT REPORTABLE

KWAZULU-NATAL DIVISION, PIETERMARITZBURG

CASE NO: 14197/2014

In the matter between:

P S obo A H **PLAINTIFF**

and

MEC FOR HEALTH FOR THE PROVINCE OF KWAZULU-NATAL **DEFENDANT**

J U D G M E N T

Delivered on : THURSDAY, 24 AUGUST 2017

OLSEN J

[1] The plaintiff in this matter sues in her capacity as mother and natural guardian of her minor daughter A. who was born on […] April 2010 at the Prince Mshiyeni Memorial Hospital, Umlazi, Durban. A. has cerebral palsy. She is mentally and physically handicapped as a result of irreversible brain damage. It is the plaintiff's case that the brain damage was caused by the wrongful and negligent conduct and omissions of the medical staff at the hospital who were responsible for managing the plaintiff's labour and A.'s birth.

[2] The Prince Mshiyeni Memorial Hospital is a State hospital. The nursing and other medical staff at the hospital are public servants employed

by the MEC for Health for the Province of KwaZulu-Natal. The MEC is sued as the party vicariously liable for any damages suffered in consequence of A.'s condition if the hospital staff are responsible in law for it.

[3] In the plea the defendant admitted the existence of a contract between the defendant and the plaintiff (representing herself and her child to be born) concluded on admission to the hospital, in terms of which the defendant undertook to provide such medical and nursing care as was reasonably necessary to ensure the safe delivery of the child and to preserve the well-being of both plaintiff and her child prior to, during the course of and after the birth of the child. The defendant admitted that in terms of the contract the medical treatment and nursing care was to be provided with such care and skill as is reasonably expected of specialised medical practitioners and nurses in the circumstances; and that it would not be negligently performed. The plaintiff also sues in the alternative in delict. The defendant admitted that there was a duty of care owed to the plaintiff and A. to perform the medical services promised on the plaintiff's admission exercising reasonable skill and diligence, and without negligence. (As to these concessions made at the outset by the defendant, see *Oppelt v Department of Health, Western Cape* 2016 (1) SA 325 (CC), para [54].)

[4] The pleadings reveal disputes of fact as to the progress of the plaintiff's labour and the birth of the child, and over the nature and quality of the care afforded to the child after birth. The defendant denied any deviations from the standard of care due to the plaintiff and the baby. Negligence was in issue.

[5] On the pleadings the fact that A. suffers from cerebral palsy was disputed. However by the time the trial commenced the defendant accepted that the child's brain is damaged as a result of which she suffers from cerebral palsy. The real issue centres around the question as to whether the child's condition was caused by any of the alleged shortcomings in the medical care provided for the plaintiff and A.. Ultimately this became the central issue in the case, as, by the end of the trial, counsel for the defendant found

themselves bound in their heads of argument to concede that it cannot be seriously disputed that there were deficiencies in the treatment of the plaintiff prior to A.'s birth; and in oral argument they were unable to say anything to avoid a conclusion that the deficiencies were the product of negligence.

[6] The question as to whether there were any deficiencies in the treatment of A. after her birth remained in issue to the end. However the complaints about A.'s treatment are not the central feature of the plaintiff's case.

[7] At the commencement of the trial it was ordered at the request of the parties that the quantification in money terms of any proven liability on the part of the defendant be separated from all other issues in the case, which other issues were to be decided separately and first. The question at this stage is accordingly whether the plaintiff is entitled to an order declaring the defendant liable to pay compensation in respect of A.'s condition.

[8] Four witnesses were called in support of the plaintiff's case. The plaintiff herself was one of them. The other three were expert witnesses who were called to express opinions based on the facts available to them. The first of these was Dr Y Kara, a paediatrician whose primary field of expertise is neo-natal intensive care. The second was Dr D M McLynn, a specialist obstetrician and gynaecologist. The third was Professor J W Lotz, a professor of radiology at the University of Stellenbosch and Tygerberg Hospital.

[9] Two witnesses were called for the defence. The first of these was Professor E J Buchmann of the Department of Obstetrics and Gynaecology at the University of Witwatersrand. The second of the defendant's witnesses was Dr N Naidoo, a neo-natologist who is the clinical head of the Department of Paediatrics / ICU at the Prince Mshiyeni Memorial Hospital. She headed the neo-natal unit at the time of A.'s birth. Like Professor Buchmann, Dr Naidoo expressed opinions, notwithstanding the fact that given her position now and at the material time, she cannot be considered to be independent. As I understood counsel for the plaintiff, no objection was raised to the

reception of such opinion evidence, subject to the qualification that sight should not be lost of the fact that it is her hospital and in part her unit which is the subject of critical analysis in this case. As to the facts of this case Dr Naidoo has no recollection of the plaintiff or A.. Like the other witnesses besides the plaintiff, her evidence was confined to commentary on the medical records, with occasional nods in the direction of the factual evidence given by the plaintiff herself.

[10] The medical records (all of which emanate from the possession of the defendant) are not models of clarity. Some appear to be incomplete. Some are very difficult to read. Where entries are unclear or cryptic, and open to interpretation, the experts were left to draw their own conclusions because none of the defendant's staff who were involved in the activities which the documents purport to record was called either to give an account of what happened (if the witness had any recollection of it), or to explain the record keeping and what conclusions ought to be drawn from some of the entries which could have done with explanation. Insofar as Dr Naidoo is concerned, by the time her evidence was done I was no longer certain that she stood by her initial contention in chief that she would have been the person who authorised the discharge of A. from the hospital. That issue aside, she was unable to say that she had anything to do in person with this particular baby during her stay at the hospital. The nursery accommodates about 45 babies at a time. The facility receives some 300 of the 1200 babies born per month at the hospital.

[11] It would not be appropriate in this judgment to furnish an account of the facts separately from an assessment of the opinions expressed in connection with those facts. The only witness's evidence which requires evaluation for credibility is that of the plaintiff herself, and that can be done as the account of the facts proceeds, when she makes a contribution to an understanding of them. Before proceeding with the account of these facts I must also mention a feature common to the evidence of both Dr Naidoo and Professor Buchmann. At the outset the evidence of both of these witnesses on a number of significant issues was firmly in favour of the defendant. But some

of these views changed, or became less firm, by the time their evidence was done. As I do not think that any of these shifts in ground, where they occurred, go to the credibility of the witness, I shall where possible concern myself only with the position ultimately adopted by the witness concerned. (My clear impression is that they shifted their ground on mature reflection encouraged by the re-assessment of the case during the course of giving oral evidence.)

Labour and the Birth of A.

[12] According to what she told Dr Kara when he interviewed her, the plaintiff was 18 years of age when she fell pregnant with A.. This seems to be supported by the hospital records which give her age as 19 at the time of A.'s birth. It also coincides with her date of birth reflected on her identity document which appears in Exhibit A. For some reason, which was not explored, when she gave evidence she said she became aware of her pregnancy when she was 20 years of age. Perhaps she misunderstood the question which generated that answer. I certainly did not get the impression that there is any deficit in the plaintiff's understanding of things which would cause her to believe that she was actually two years older than she really was when she fell pregnant. Neither did I get the impression at any stage of A.'s evidence that she was trying to mislead the court.

[13] This was her first pregnancy. She attended the clinic at Q-Section, Umlazi, once a month between the fourth and ninth months of her pregnancy. She described how she was medically examined on the occasion of each of these visits and said that no problems were drawn to her attention at the clinic.

[14] On 9 April 2010 the plaintiff decided that she was in labour, feeling pain "both front and back". At 3pm on that day she took a taxi to the Prince Mshiyeni Memorial Hospital. According to her she arrived there at about 4:30pm to 5pm. She went to what she understood to be the designated place, produced her card and was instructed by a nurse to go to a place

where she would change her clothing for a hospital gown. Having done that she returned and she was instructed to lie on a bed. She was thereafter examined and then told to go and sit in a waiting area. The hospital's admission record shows that the plaintiff was admitted at 7:20pm. A two to three hour delay in the examination of a patient who attends hospital declaring that she is suffering labour pains strikes me as inordinate. However it seems clear that insofar as timing is concerned the plaintiff's evidence is not reliable. She was very young and this was her first pregnancy. Furthermore, no witness advanced the proposition that this particular delay, if it occurred, should be regarded as particularly material in the context of the present enquiry.

[15] The imperfections in the plaintiff's memory for times on the night in question are apparent from Dr Kara's report of his interview with the plaintiff. She insisted that A. was born by caesarean section at about 3am on 10 April. The hospital records show conclusively that this has to be wrong. According to the hospital records the baby was extracted at 09h37, some six and a half hours later than the time the plaintiff asserted in conference with Dr Kara, despite his attempts to illustrate to her with reference to the hospital records then available to him that she must be wrong. It does seem that by the time she gave evidence the plaintiff had reconciled herself to the fact that A. must have been born later. She mentioned in her evidence an examination by a doctor who told her that a caesarean section would be necessary, and said that when that happened it appeared to her that the morning shift had come on duty. The evidence that somewhere in the middle of the night a belt was put on her (she says to see if the baby was still alive) coincides with hospital records, as does an examination at 6am by nursing staff and an examination by a doctor at 7:30am. It strikes me that all that need be added concerning the plaintiff's evidence covering the time up to A.'s birth is that she stressed more than once that throughout this period she felt considerable pain.

[16] Before commencing a consideration of the medical records, the plaintiff's case as to how A. sustained brain injury should be stated. It is the plaintiff's case that during the course of labour the baby suffered a prolonged

partial hypoxic ischemic injury. The word “hypoxic” signifies a lack of oxygen and the word “ischemic” signifies a diminished blood supply or drop in blood pressure. Cerebral injury is the result if these combined conditions endure too long. According to Dr Kara twenty minutes may be enough. A period of 45 minutes was also mentioned.

[17] According to the medical records when the plaintiff was examined at 7:20pm on 9 April 2010 it was known and recorded that she had attended the clinic at Q-Section, Umlazi, that it was her first pregnancy, that she was over 41 weeks (noted as “41+w”) and that she was complaining of labour pains. She was examined and found to be 2cm dilated. That signifies early labour. The head of the baby was four fifths above the brim, which, Dr McGlynn explained, means that it was not yet reaching the foot of the pelvis. The foetal heart rate was 140 beats per minute, which is normal. The membranes were intact. The form upon which all of this was noted makes provision for the examining nurse or doctor to make an assessment and give instructions. In this block on the form the word “CTG” appears, and underneath that an instruction that there should be a re-assessment in four hours. None of the aforegoing is in dispute.

[18] Dr McGlynn explained in evidence that the letters “CTG” are shorthand for the word “cardiotocography”. A CTG device is comprised of a receptor which is fixed to a belt, which in turn is placed around the mother’s abdomen. This receptor is capable of measuring the foetal heart beat and the occurrence of contractions. The information it collects is sent electrically to a machine which causes it to be inscribed on a rolling sheet of paper in the form of two graphs, one of which records the foetal heart beat and the other the occurrence of contractions. The two records are synchronised. The printout not only enables the medical staff to observe and monitor both the foetal heart beat and the frequency of the contractions, but also to satisfy themselves that a proper relationship between contractions and the foetal heart beat is maintained. Contractions affect the foetal heart beat because when they occur they interfere with the supply of blood to the baby.

[19] It is not clear from the notes of the examination at 07:20pm on 9 April 2010 whether the instruction was to do a CTG scan of the plaintiff there and then, or whether whoever gave the instruction intended it to be done at the time of re-assessment four hours later. The person concerned was not called. We do know that no CTG scan was done at that time.

[20] According to Dr McLynn there were at least four factors which should have signified to any midwife or doctor examining the plaintiff at 07:20pm on 9 April 2010 that particular attention and close monitoring of the plaintiff was required. They are that she was still a teenager; this was her first pregnancy; the pregnancy had lasted in excess of 41 weeks; and having regard to the foregoing and, as I understand it, the position of the head of the baby at the time, there was a risk of mal-presentation and that the pelvis might be too small for the head (or the head too big for the pelvis). (I note from the report under the heading "Pelvic Findings", that the block marked "poor" was crossed adjacent to the word "application". I cannot recall this being mentioned in evidence.)

[21] Dr McLynn explained that he identifies the fact that the pregnancy had gone beyond 41 weeks as a risk factor because the placenta generally starts deteriorating from 40 weeks onwards. A correctly functioning placenta is necessary *inter alia* for the mother's oxygen to be passed into the baby's blood supply.

[22] Professor Buchmann was not in full agreement with Dr McLynn's analysis of the issue as to whether the plaintiff ought to have been regarded as a high risk patient. He accepted that the fact that the pregnancy had proceeded beyond 41 weeks was a risk factor. He rejected the proposition that the plaintiff was at risk because of her age, saying that anyone over 16 years of age was fine. He disagreed with the proposition that a first pregnancy involves particular risks. He took the view that anything that happens can be dealt with. I must say, however, that I was not impressed with his response when questioned as to why it is that when it is a first pregnancy, it is always noted (as it was in this case) as such, with the word

"primigravida". His answer was that it was probably the habit of midwives to do so. However Professor Buchmann did express the opinion that a patient going into labour who was over 41 weeks should be placed, and as I understood his evidence, maintained on a CTG monitor throughout. That was not done in this case. The dispute between the two obstetricians over the extent to which the plaintiff presented as a high risk case need not be discussed any further given events which followed.

[23] The plaintiff was placed on a CTG device at 00h20 on 10 April, that is to say some five hours after she had first been examined. That is the next record of any attention being paid to the plaintiff. According to guidelines for maternity care in South Africa (3rd Edition, 2007) issued by the Department of Health, during the latent phase of labour (when the cervix is 3cm or less dilated) the mother's blood pressure, pulse rate and temperature should be checked every four hours and at the same four hourly intervals vaginal examinations should be undertaken. Contractions and the foetal heart rate should be checked two hourly. Professor Buchmann agreed that this was correct, as he did the proposition that the latent phase of labour is, according to the guidelines, prolonged if it exceeds eight hours. The CTG device was removed from the plaintiff after half an hour, which was criticised as inadequate. According to Professor Buchmann a doctor should become involved if the latent phase exceeds eight hours. Judging from the evidence of the plaintiff herself, the latent phase had certainly exceeded eight hours by midnight, but the staff who attended to her in the first hour of 10th April might very well not have known that given that the first examination of the plaintiff took place only five hours before.

[24] Before dealing with the CTG referred to immediately above, I should mention the record of the examination of the plaintiff in the first hour of the day which was undertaken or recorded, according to the document, at 00h40. It deals with the CTG in the past tense, which suggests that the watches or clocks of the person managing the CTG device and the nurse or midwife examining the plaintiff did not coincide. What was noted in the course of that examination is in at least two respects a little confusing.

(a) Firstly, the maturity of the baby was recorded as 39 weeks. Professor Buchmann said that sometimes the nurses estimate the "age" of the foetus by their sense of the size of the baby, rather than by having regard to the records, which may explain that.

(b) Secondly, the cervix was recorded as being 3cm dilated. The record of the next examination (five or more hours later) records the cervical dilation as 2cm; i.e. what it was upon admission.

[25] The report of the examination of 00h40 ends with the words "re-assess in two hours!". Professor Buchmann's evidence was to the effect that the exclamation mark signifies that the nurse is "shouting" – i.e. emphasising that the next assessment must be done in two hours. But he goes on to observe that he cannot see from the record what it was or might have been that made the nurse "shout".

[26] The duties of the defendant and the hospital with regard to the maintenance and production of records were not discharged in the present case. (As to the duties of a hospital with regard to the keeping and protection of records see *Khoza v MEC for Health and Social Development, Gauteng* 2015 (3) SA 266 (GJ).) The plaintiff's lawyers tried desperately to ensure that all hospital records necessary for the conduct of this case were available at the commencement of the trial. They were not. Copies of some of them were produced. Insofar as CTG recordings are concerned barely legible copies were first provided to the plaintiff's attorneys. On the morning of the day on which Dr McLynn commenced giving evidence a slightly better set of copies of CTG recordings was provided. It was marginally more legible than what the witness had before. The only explanation given for this state of affairs was from the bar, and it was in effect that

(a) the original file containing the original records had been lost and could not be found; and

(b) a better copy of the CTG print-outs had been produced on the first day of the trial simply because it was an earlier copy (perhaps one taken off the originals) than the ones which had previously been provided to the plaintiff's attorneys.

[27] At the end of the trial, the hospital file relating to this matter was miraculously found. There is still no clear explanation for all of this. Be that as it may, the plaintiff proceeded with her action, her lawyers having done the best they could with what was available. The file contains the originals of the three CTG print-outs relating to the plaintiff. The originals are obviously more legible than anything that was available when the obstetricians were giving evidence. The originals are tracings on paper which appears to be of the kind which was used in early fax machines. The imprint of the styli was either relatively poor at the outset, or the tracing has faded; or perhaps both.

[28] Reverting to the CTG taken over a period of half an hour in the first hour of 10 April, its content generated a debate and dispute between Dr McLynn and Professor Buchmann as to whether an excessively high foetal heart rate (tachycardia), signifying distress, could be assessed as such at or above 150 beats per minute or at or above 160 beats per minute. Dr McLynn favoured the lower figure and Professor Buchman the higher one. Dr McLynn read the poor version of the CTG print-out as signifying a heart rate going up to just under 160 beats per minute. Having the benefit of the original, I am just able to see that at times the heart rate was above 160 beats per minute. Even according to Professor Buchmann that would signify a condition of tachycardia. That is perhaps why the nurse who examined the plaintiff immediately after the CTG had been run recorded that the patient should be examined again in two hours; and signified that it was imperative that it be done by using an exclamation mark.

[29] The plaintiff was not examined two hours later. According to the hospital records she was next attended to at 05h20 when the second CTG was commenced.

[30] The CTG that commenced at 05h20 was removed at 06h05. Both Dr McLynn and Professor Buchmann agree that the device ought not to have been removed. That brought crucial monitoring to a stop.

[31] Reading the poor copy of the CTG print-out available to him Dr McLynn's evidence concerning it may be summarised as follows.

(a) It is difficult to be certain, but there appears to be a loss of baseline variability. Baseline variability is, as I understood his evidence, a variation in the rate at which the heart beats generated in reaction to the commencement and cessation principally of movements by the baby and contractions. His difficulty was that the print-out on the CTG paper of the contractions was all but invisible to him on the copy he worked with. A loss of baseline variability is nevertheless a sign of hypoxia when it occurs in association with tachycardia.

(b) He observed tachycardia. He made the observations that from what he could see the heart rate went above 160 beats per minute. With the benefit of the original I am able to make the observation that it was consistently higher than 160, and at times appeared to be touching 175 beats per minute.

(c) Dr McLynn also observed decelerations. A deceleration is a drop greater than 15 beats per minute for a period of greater than 15 seconds. He observed three or so decelerations, one of which was down by 35 to 40 beats per minute and another by 40 beats per minute. Decelerations can occur in conjunction with contractions, but if the rate of the heart is not restored within a minute or so after the contraction, that indicates hypoxia. If it carries on and on there will be an oxygen deficit which will make the decelerations become worse. Unfortunately Dr McLynn was unable to express a view with any precision as to the qualities of the decelerations as he was unable to see any of the print-out relating to accompanying contractions. There is something to be seen on the original, but I am afraid that it is not as

easily read as the graph upon which the stylus plots the heart rate, and certainly not capable of interpretation at all by anyone who is not an expert in the field.

[32] Professor Buchmann was critical of the fact that the CTG was removed at 06h05. The CTG monitoring should have continued. He agreed with the proposition that the CTG indicated foetal distress and ventured a suggestion that with decelerations already occurring at 5am, the condition of distress must have started somewhere between 00h50 (when the first CTG was removed) and 05h20. One does not know how long a condition of distress subsisted prior to the commencement of the second CTG reading.

[33] The nurse's examination of the plaintiff at 06h00 recorded the plaintiff's own condition as satisfactory but the foetal condition as distressed. It also recorded a meconium stained plug. Meconium is a mucus-like material lodged in the intestines of a full term foetus, which is apparently a mixture of intestinal secretions and some amniotic fluid. If the foetus passes such substances they will stain the "waters" (which the medical fraternity calls the "liquor"). Meconium staining is also an indication of foetal distress. The cervix was assessed as 2cm dilated.

[34] The record of the examination at 6 o'clock continues with the words "for CTG", which one would think meant that the CTG should be maintained; or perhaps reinstated after the next instruction was carried out, namely the transfer of the plaintiff to a bed called "cube 3". The nurse then also recorded that the doctor had been informed. The final instruction noted at that time was that the mother should be put on oxygen.

[35] There is then no record at all of anything done to or for the plaintiff or the foetus prior to a report noted in the records at 07h30, apparently made by a doctor who examined the plaintiff at that time.

[36] It appears to me to be clear that monitoring of the condition of the plaintiff and the baby up to 7:30am fell short of what was required. Monitoring

was not even done four hourly. That four hour long intervals were no longer sufficient is apparent from the instruction given by the nurse at 00h40 that the patient should be reassessed in two hours. It is plain from the evidence of the obstetricians that the distressed condition of the baby at and around 6am must have started earlier on. No witness was called to offer any explanation for these defaults, let alone one which could lay the foundation for an argument that the apparent defaults were excusable, and indeed not unreasonable (and accordingly not negligent), because of any particular circumstances which were not revealed in evidence or from the hospital records.

[37] The note made by the doctor at 07h30 commences with the observation that the patient had not been reported to the emergency doctor as directed at 6am. The doctor recorded that the patient was not on a CTG but that she was draining meconium stained liquor grade 3 (the grade apparently indicating the significance of the phenomenon). Her cervix was only 3cm dilated. The membrane was found intact and bulging; the doctor artificially ruptured the membrane and drained meconium stained liquor. The contractions were still mild and the baby had not moved any further down. The doctor recorded that the CTG (which he would have seen in a better condition than we can now) showed decelerations. He then recorded his plan that there should be *intrapartum* resuscitation which would, according to Dr McLynn, involve giving the mother oxygen in order to build up the oxygen deficit or at least modify it; and to give intravenous glucose because hypoglycaemia in association with hypoxia would aggravate damage to the foetal brain. But the primary instruction given was “prepare for CS stet”. The instruction was accordingly that there should be an emergency caesarean section.

[38] The doctor who conducted the examination and signed the report of 07h30 examined the cord to establish whether a prolapse was the cause of the condition of distress, and established that it was not. He endorsed the CTG which had been terminated at 06h05 with the notation “CTG = NR”). Dr McLynn explained that what that means is that the CTG is non-reactive. That

indicated that the baby had stopped moving. That is suspicious and abnormal. In the light of the evidence of the obstetricians, and in the absence of evidence from the doctor who attended the plaintiff at 07h30, the only conclusion reasonably to be drawn is that what he or she feared at 07h30 was hypoxic ischemic injury.

[39] According to Dr McLynn if the instruction to perform an emergency caesarean section had been followed and implemented correctly, one would have expected the baby to be extracted within 45 minutes. Dr McLynn said that he himself had managed to do it in 20 minutes on a previous occasion, but regarded 30 to 45 minutes as reasonable in the circumstances. As far as can be seen from the hospital records the plaintiff's anaesthetic was only administered at 09h10 and the operation commenced at 09h31. A. was extracted at 09h37. Both obstetricians found that delay quite unacceptable. Again no witness present on the day was called to explain what had happened. The breach of the standard of reasonable care is again irrefutable and inexcusable; or if not the latter, unexcused. In the light of the aforegoing I experience no difficulty in concluding that the management of the plaintiff's labour and the birth of A. was done negligently in each of the respects identified above; and logically, then, in breach of the standard set by the contract between the plaintiff and the hospital.

Causation

[40] Professor Buchmann expressed the view that such evidence as is available to us from the records about the management by the hospital of the birth is not inconsistent either with a good or a bad ultimate outcome. A. could have survived it without brain damage; but it could have caused the brain damage which she suffered. Professor Buchmann expressed the view that the damage to A.'s brain could not have occurred in advance of labour. According to him a prior injury which might have caused it can be excluded. His ultimate attitude was expressed in his evidence that there was evidence of hypoxia; there was delay; but "out came an okay baby". As the parties are in agreement that nothing prior to the plaintiff's admission caused the brain

damage, the question is as to whether the injury occurred during the birth process or after the hospital discharged the plaintiff and A.. Counsel for the defendant argues that the plaintiff has not established that the shortcomings in the treatment afforded to the plaintiff caused the damage to A.'s brain.

[41] The argument advanced by counsel for the defendant for the proposition that causation was not established in this case is constructed around a statement in the report of Dr Kara to the effect that "the pathway from intrapartum hypoxic-ischemic injury to subsequent cerebral palsy must progress through neonatal encephalopathy". Dr Kara explained that the word "neonatal" means after delivery, and that a baby not prematurely born is called a neonate up to 28 days after birth. The parties were in dispute as to whether there was evidence of encephalopathy.

[42] A.'s condition, cerebral palsy, is a permanent and non-progressive injury which occurs in an infant that has not reached maturity. Cerebral palsy is unique to children. Once the injury occurs it does not get worse, but neither can it get better. Hypoxic injury, and in particular intrapartum hypoxic injury, is one of the possible causes of cerebral palsy.

[43] Dr Kara explained that when a baby is born it is "scored" in order to determine whether it needs intervention or resuscitation on delivery. The scoring system produces what is called an "Apgar Score". I do not propose to dwell on the Apgar Score as a prominent feature of the enquiry into whether A.'s condition at birth evidences neonatal encephalopathy because ultimately the witnesses agreed that the assessment is subjective and not a particularly reliable indicator for the enquiry in which we are presently involved, unless something very obvious was observed. But I think it needs to be mentioned that two different Apgar Scores are evident from the records, one noted as 6 and 7 and the other as 7 and 9 (on a scale where the higher score is better). The hospital record headed "Record of Neonate" presents scores of 7 and 9. The score appears on a form which makes provision for a specific assessment (on a scale of nought to two) of each of five factors, namely heart rate, respiration, muscle tone, response to nasal catheter and colour. None of

those assessments are actually recorded in the space provided for the exercise. (The score of 7 and 9 appears to have been made by a nurse.) The score of 6 and 7 appears to have been made by the doctor who delivered the baby. The nurse who scored A. at 7 and 9 nevertheless recorded her condition as "fair". In another record the nurse recorded the following concerning A.. "Condition of baby looks fairly ill". Dr Kara's evidence was that a baby who is considered only to be in a fair condition, or considered to be fairly ill, would not achieve those Apgar Scores. The record also shows that A. had meconium Grade 3 and had to be suctioned to clear meconium aspiration. A baby in that condition could not achieve an Apgar Score of 7 and 9.

[44] This is a convenient point at which to consider what the plaintiff herself had to say about the period which followed A.'s birth. She was awake and was able to see what was going on when the baby was removed. The baby was taken to "another place". It had not yet cried. After what she described as a long time the plaintiff heard the baby crying at that other place. She described the crying as that of a tired baby. At some stage the baby was brought back and shown to her after which it was taken away. To the plaintiff the baby appeared to be tired.

[45] The plaintiff was then taken to her ward. Whilst she was there she saw other people's children being brought in, but not hers. She thinks it was on the second day that she heard an announcement that people with babies in the nursery should go there. She decided to go but her name was not called out. But on the third day she went to the nursery and she saw her baby being kept "in some container of sorts". The day before, when she was not allowed to approach the child, she had seen pipes and the like on the baby in the container. On this, the third day, the baby still appeared to her to be tired. The plaintiff said she was confused. She had no explanation as to what was going on. On the third day many of the pipes that had been attached were removed. The one which remained behind was a pipe going through the nostrils, which presumably was the oxygen. When asked to describe what she meant by describing her baby as "tired" the plaintiff said the difference

between her baby and the rest was that the others were awake whilst hers was not. The rest were active and crying, but not hers.

[46] At a certain stage the plaintiff tried to breast feed the baby. But it could not suck. It was fed instead with a little cup into which the plaintiff expressed breast milk. She fed the baby in this manner until she left the hospital. When she got home the baby could still not suck. She did the same thing that she had done in hospital, using a cup. On the seventh day after the birth she bought a bottle, and managed to use it after she had enlarged the hole in the teat. That for the plaintiff was what she described as a "little victory"

[47] The plaintiff then took A. to the clinic on a regular basis. She received her inoculations and reports were made concerning her condition and her weight, and so on. The records on A.'s health chart indicate that she received the required inoculations in April, May, June and July 2010 and in January and then October 2011. It eventually became apparent that she was not a well child. When she was nine months old questions were raised as to the condition of her eyes. She was recommended for a doctor's assessment and opinion when she was a year old. She had a tight chest. She was a reluctant feeder and vomited frequently. The nurse noted that A. looked lethargic and drowsy. In July 2011, at the age of 15 months, she was assessed at a genetic clinic. Her present condition was ultimately diagnosed and observed.

[48] The plaintiff herself said that at a certain stage at home she observed that the baby had something in the nature of a fit. Although the event scared her the baby recovered. It is not clear when exactly this occurred, although it was probably when A. was around 3 months old.

[49] Dr Kara took into account what the plaintiff had to say and drew the conclusion that there is evidence of neonatal encephalopathy. Counsel for the defendant argued that the plaintiff's evidence is "to say the least" unreliable. I have already concluded that her evidence of times when things occurred in advance of the birth of the child is unreliable. However, I see no

reason to regard her evidence as to what occurred after the child was born, until the two were discharged from hospital, and what followed in the aftermath, as unreliable. I found the plaintiff to be a satisfactory witness. I did not get the impression that she exaggerated anything. I got the impression that she was a responsible person and a responsible mother. The records of her attendance at the clinic both before and after the birth of A. suggest that if anything had happened later in A.'s life to cause an injury to her brain resulting her present condition, it would be surprising to find that the plaintiff had not observed the event. When it was suggested to Dr Kara in cross-examination that an event which occurred post-discharge could have caused the injury to A.'s brain, he found great difficulty in accepting that proposition. A minor fit, even one lasting 10 or 15 minutes, could not have caused the injury, according to Dr Kara. It is an hypoxic ischemic injury. It can only occur if there is circulatory collapse. One would then expect a record of the baby's admission to hospital and a record of the baby being resuscitated. There are no records of that type. Dr Kara's view is that it would be unlikely that a baby suffering such an event after birth would survive without medical intervention. It strikes me as improbable that anything like that could have happened to the knowledge of the plaintiff without the plaintiff seeking medical help immediately. If anything like that occurred without her knowledge, then on Dr Kara's evidence the question which arises immediately is how A. survived it without medical intervention.

[50] Much of the debate over the question as to whether A. displayed neonatal encephalopathy centred around the hospital records. They were far from perfect. They record respiratory distress, initial feeding problems and, on occasions, that the baby looks dull or ill. But there is no record of the observation of a prominent event, significant with respect to the condition of A.'s central nervous system, which everyone would agree to be undoubtedly evidence of neonatal encephalopathy.

[51] As I understood Dr Naidoo's evidence, the only phenomenon she chose to refer to as a positive indicator of an intact central nervous system was the existence of a sucking reflex of the type which, she said, is required

before A. would have been discharged. She drew the conclusion from the decision to discharge A. that a sucking reflex of the type sufficient to accomplish breast feeding must have been in place in order to justify the discharge of the baby. She sought thereby to contradict the plaintiff's statement that such an ability to suck was not present. The difficulty is that with the best will in the world one cannot approach Dr Naidoo's evidence upon the basis that she ran a facility where no baby could fall through the cracks The records relevant to this case do not support a conclusion that this was a hospital providing a flawless service. Going along with Dr Naidoo's postulation that the baby's discharge evidences the fact that it had an adequate suck, at least by the fifth day of her life, entails rejecting the plaintiff's evidence on this crucial issue, which is the only direct evidence led on the subject. If the defendant had chosen to call at least some of the members of the staff responsible for the neonatal records, that may perhaps have lent some support to what Dr Naidoo was trying to achieve; namely acceptance of the proposition that because the rule is that a baby should not be discharged if an adequate suck for feeding has not been established, the fact that the baby's discharge was authorised is sufficient evidence that an adequate suck had been achieved.

[52] The neonatal records relating to A. do not record the occurrence of any fits of the kind which evidence neonatal encephalopathy suffered as a result of an hypoxic ischemic injury during the birth process. Dr Naidoo described the sort of thing which will be observed if such fits or seizures are occurring. The examples she gave were excessive blinking; or an impression that the baby is staring; or high pitched crying; or a rowing movement of the limbs; or lip smacking which she described as pursing of the lips. These phenomena she described as subtle, and she made the point that if they are not treated or attended to they might last for 30 seconds before they "self-abort". Dr Naidoo conceded that if such seizures had occurred during the first days of A.'s life it is not impossible that they were missed.

[53] Dr Kara is very experienced in his field. His qualifications were not challenged. In the end his view was that as long as one takes into account

the plaintiff's own evidence, the conclusion he must draw as a medical expert is that the existence of neonatal encephalopathy is not discounted by the content of such hospital records as are available. But, on the other hand, his view is that the mother's evidence and the hospital records together do not establish the existence of neonatal encephalopathy. It was quite apparent, though, that for a number of reasons Dr Kara experienced some difficulty adopting this balanced view of the available evidence. Firstly, he agreed with Professor Buchmann that nothing which happened in advance of the plaintiff's admission to the hospital caused the injury sustained by A.'s brain. Secondly, although he felt himself bound to defer to the opinions of the obstetricians, it was obvious that his own view of the record of the birth was that it showed every sign of a course of events consistent with hypoxic ischemic injury. Thirdly, insofar as an assessment of the injury itself is concerned, Dr Kara was able to exclude a number of other potential causes of cerebral palsy (a subject on which he was not challenged). Finally, and deferring to the opinions of expert radiologists, Dr Kara was firmly of the view that the visible damage to A.'s brain was of a kind which he would regard as typical of that suffered when a baby suffers a prolonged partial hypoxic ischemic injury in the course of labour. In the end the evidence of both Dr McLynn and Professor Buchmann supported Dr Kara's concerns about what happened during the birth process. Nevertheless, given Dr Kara's acceptance of the proposition that despite his concerns, the mother's evidence and the hospital records on their own do not prove neonatal encephalopathy, the evidence of Professor Lotz, the radiologist, becomes crucial.

[54] Professor Lotz's qualifications were not challenged. I think it appropriate to make brief mention of some of his background set out in detail in his curriculum vitae. He qualified as a doctor in 1972 and after achieving a Master of Medicine in diagnostic radiology (cum laude) in 1980 he was registered as a fellow of the College of Radiology of South Africa. In 1982 he became a fellow of the Royal College of Radiology (London). He practised as a specialist radiologist from January 1981. He has taught and practised widely, not only in South Africa. From 2007 to date Professor Lotz has specialised in the medico legal assessment of MRI features of hypoxic

ischemic injury in pre-term and term infants. He has been involved in international correspondence with leading experts in the field of such injury in infants, and has compiled a database of more than 500 cases of hypoxic ischemic injury. He assumes that the database he has compiled is one of the largest in the world. He has supported research into the field by affording prospective PhD candidates access to the database. He has furnished expert opinions in an estimated 250 cases of either concluded or still continuing civil actions relating to hypoxic ischemic injury in neonates.

[55] An MRI scan was taken of A.'s brain in 2015. His testimony relates to the conclusions which can (and in his opinion must) be drawn from the scan.

[56] Professor Lotz's evidence concerns a highly specialised area of the radiologist's discipline. In giving evidence he stressed the complex nature of the human brain. The complexities of the subject which he was asked to address in evidence would, it seems to me, have been beyond the comprehension of a lay judge. Fortunately, because no expert in the field was called by the defendant to contradict Professor Lotz, and because such cross-examination as he was subjected to did not challenge any of the scientific propositions which are the foundation of the opinions he expressed, there is no need for me to concern myself with any issue as to whether the science behind Professor Lotz's opinions is correct or reliable.

[57] Professor Lotz found it necessary to use a series of slides in order to render accessible to a lay person his explanation for the conclusions he draws from the MRI scan of A.'s brain. That series of slides, including the relevant image of A.'s brain and the injury to it, are part of the record of the case. I intend no criticism of Professor Lotz in saying that I do not think he could have explained what the court had to understand without those slides; that is to say in words alone. If he could not do it, it goes without saying that neither can I. I must confine myself to a brief account of what Professor Lotz had to say, sufficient, one hopes, to justify the conclusion I have reached concerning its impact on this case.

[58] The deepest part of the brain is called the reptilian brain. In the evolution of the human brain it is the most primitive portion of the brain, but it contains all the vital centres. By “vital centres” is meant those portions of the brain the operation of which is necessary to sustain basic life. Nature has ordained that the time and process of birth is one of the most dangerous times of life. A. was a term baby. Unlike a baby that is born prematurely, she had reached (and on the evidence passed) the time at which she ought to have been born. In preparation for the life threatening process of natural birth, the human brain in the term infant is automatically programmed to protect the life centre lodged in the reptilian brain. This programme prefers the reptilian brain above the later-developed (in the evolutionary sense) mammalian and human brain. Professor Lotz called this “programme” the auto-regulatory mechanism of blood distribution. In the event of partial hypoxia-ischemia this auto-regulatory mechanism will redistribute blood from the superficial hemispheres of the brain to the deeper central nuclei to protect the life centres; which of course involves a sacrifice in the areas of the brain which are deprived of a full supply of blood and oxygen. (This may occur, for instance as indicated in the example given in one of Professor Lotz’s slides, because a partial placental abruption results in a decrease in blood pressure and accordingly a decrease in the supply of blood and decrease in the amount of oxygen in the blood.) If the event is not partial, but what is called “acute profound”, there is not enough time for this redirection of blood and the results are catastrophic. The injury we are concerned with is the prolonged partial hypoxic-ischemic type which allows time for the redistribution of blood supply dictated by the auto-regulatory mechanism in place in the term infant. It involves a growing crisis over a period of time, and as the threat to the life centre increases, more blood is shunted from what Professor Lotz calls the superficial human brain to the reptilian brain.

[59] There are three different arterial supplies of blood to the brain called the anterior, middle and posterior cerebral arteries. The last mentioned provides the circulation for the reptilian brain; and the auto-regulatory system favours the maintenance of that blood supply in the event of a partial hypoxic-ischemic event. The injury to the brain caused in the case of a partial

hypoxic-ischemic event during birth occurs primarily at the junctions of the three areas of the brain served by the three arteries mentioned above. These are the areas of the brain which first sacrifice blood and oxygen in order to preserve the life of the infant. Professor Lotz called that phenomenon the "watershed infarction". A watershed infarction generates a particular pattern of injury which is found in the scan of the brain of a person who has suffered such an event at the time of birth. The extent of the injury, and indeed the occurrence of injury beyond those watershed areas, depends on the intensity and duration of the hypoxic-ischemic event.

[60] The pattern of injury is the hallmark of brain injury caused by a prolonged partial hypoxic-ischemic event during birth, because once the baby is born and lives, the programme naturally in place for the protection of the reptilian brain during the time of birth is altered. Professor Lotz is uncertain about the time it takes for this alteration in the auto-regulatory mechanism to change to the one with which humans live after birth. He said it may be a matter of hours or a matter of days, but not a matter of weeks. Once that change has taken place an event which causes a diminution in the supply of oxygenated blood to the brain will cause a pattern of brain injury completely different to the one which occurs at birth. The reptilian brain no longer enjoys preference.

[61] It is the opinion of Professor Lotz that the scan of A.'s brain provides a more perfect example of the pattern of injury discussed by him than the one used in the set of slides he produced for the purpose of conveying his opinion in evidence.

[62] Cross-examination of Professor Lotz achieved nothing but more clarity about the certainty of his opinion. Counsel for the defendant did not have the benefit of any witness they proposed to call to contradict what Professor Lotz had to say. It was suggested to Professor Lotz that perhaps his evidence or opinion is of lesser value because the scan was taken of A.'s brain when she was already five years old. His answer to that was that the brain injury caused at birth, once it has settled, never changes; if a similar scan is taken of

A.'s brain when she is 70 years of age the picture will be exactly the same as it was at 5 years of age.

[63] Both Professor Buchmann and Dr Naidoo, when they gave evidence, were asked to comment on what Professor Lotz had to say. (Of course, that was done appreciating that radiology was not their speciality.) Neither of them could offer any response which devalued the contribution of the un-contradicted evidence of Professor Lotz to the consideration of the question as to whether, as a matter of probability, the damage to A.'s brain, and her cerebral palsy, was caused by the negligent defaults of the defendant's staff at the hospital in the provision of proper care and treatment during the plaintiff's labour and A.'s birth.

[64] I found Professor Lotz's evidence compelling and logical. Professor Buchmann conceded that the available evidence of the management of A.'s birth is at least consistent with the proposition that the distress which occurred reflected the injury to her brain. I accept Dr Kara's view that a fair evaluation of the medical records and the evidence of the plaintiff herself concerning A.'s condition at and after birth, seen in isolation, may not establish, but does not discount, the existence of neonatal encephalopathy. To the extent that Dr Naidoo at the end of her evidence may have continued to advance the case that her hospital records, and the customary quality of treatment she believed must have been provided for A., discount the possibility of neonatal encephalopathy, I find her views unconvincing.

[65] I have accordingly reached the conclusion that the defendant's staff at the hospital who were charged with the duty of caring for the plaintiff and A.'s birth failed to deliver the standard of care promised by the admitted contract, that their conduct was negligent, and that it is established on a balance of probabilities that those defaults caused the injury to A.'s brain and her most unfortunate current condition.

[66] Counsel for the plaintiff provided a draft order which they submitted should be made in the event of me reaching this conclusion. Two aspects of

the draft order (the scale of costs and the question of costs incurred in respect of a witness not called) were canvassed in the course of argument, but otherwise counsel for the defendant had no objection to the manner in which the order was formulated. I will accordingly follow it.

I make the following order.

1. It is declared that the defendant is liable to compensate the plaintiff in her capacity as parent and natural guardian of her minor child, A. H, a girl born on […] April 2010 for all damages it is proved that the plaintiff in her said capacity and the minor child suffered or in the future will suffer in consequence of the brain injury sustained by the child at the time of her birth at Prince Mshiyeni Memorial Hospital.

2. The defendant is ordered to pay the plaintiff's costs to date, such costs to include:

   (a) the costs of two counsel, including the costs of their preparation for the trial and their preparation for the resumption of the part-heard trial and for their consultations with the expert witnesses named below and with the plaintiff;

   (b) the costs of plaintiff's attorney attending upon consultations with the expert witnesses who are named below;

   (c) the costs of obtaining an MRI scan and report in respect of the minor child including the costs of the anaesthetist and hospital fees that were necessary to obtain the said MRI scan;

   (d) all reserved costs including the cost of junior counsel in having the matter certified ready for trial;

   (e) the qualifying fees of the expert witnesses who are listed below, including the costs of the preparation of their medico-legal reports, the costs of qualifying themselves to testify as expert witnesses at

the trial, in respect of the expert witnesses who testified, and the cost of their attendances at consultations with the plaintiff's attorney and counsel and as determined by the taxing master as well as attendance fees for the days on which they attended the trial, and, in relation to Prof Lotz the reasonable airfare and travelling costs for him to travel from Cape Town to Pietermaritzburg to testify at the trial on 23 May 2017; the said experts being:

(i) Dr Y Kara;
(ii) Dr DM McLynn;
(iii) Prof JW Lotz

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OLSEN J

Date of Hearing:	WEDNESDAY, 20 APRIL 2016 to FRIDAY, 22 APRIL 2016 and from MONDAY, 22 MAY 2017 to MONDAY, 29 MAY 2017
Date of Judgment:	THURSDAY, 24 AUGUST 2017
For the Plaintiff :	MR M PILLEMER SC with MR B BEDDERSON
Instructed by:	FRIEDMAN & ASSOCIATES 44 ST ANDREWS DRIVE DURBAN NORTH…DURBAN (REF.: Ms B Balwanth/AS/03/S828/00 (TEL : 031 – 564 8043) **c/o AUSTEN SMITH** Pietermaritzburg (REF.: CC Smythe/rb/Q2/F0296/14) (TEL : 033 – 392 0500
For the Defendant :	MR V NAIDOO SC with MR M CHETTY
Instructed by:	STATE ATTORNEY (KWAZULU-NATAL) 6TH FLOOR, METROPOLITAN LIFE BUILDING 391 SMITH STREET….DURBAN (REF.: 24/004466/14/S/P18 – Mr Ngubane/spm) (TEL.: 031 – 365 2530) **c/o CAJEE SETSUBI CHETTY INC.** PIETERMARITZBURG (REF.: Mr Essa) (TEL.: 033 – 345 6719)