

SAFLII Note: Certain personal/private details of parties or witnesses have been redacted from this document in compliance with the law and [SAFLII Policy](#)

**THE SUPREME COURT OF APPEAL OF SOUTH AFRICA
JUDGMENT**

Reportable

Case No: 502/2021

In the matter between:

**THE MEMBER OF THE EXECUTIVE COUNCIL FOR
HEALTH, LIMPOPO PROVINCIAL GOVERNMENT**

APPELLANT

and

L W M[....] obo D M[....]

RESPONDENT

**THE MEMBER OF THE EXECUTIVE COUNCIL FOR
HEALTH, EASTERN CAPE**

AMICUS CURIAE

Neutral Citation: *MEC for Health, Limpopo v L W M obo D M* (502/2021) [2022]
 ZASCA 146 (27 October 2022)

Coram: VAN DER MERWE, MOLEMELA and GORVEN JJA, and
 DAFFUE and SALIE-HLOPHE AJJA

Heard: 18 August 2022

Delivered: 27 October 2022

Summary: Delict – Medical negligence – failure to monitor the appellant and foetus during labour – whether hospital staff was negligent – whether negligence causally connected to the child’s brain damage – negligence and causation established – appeal dismissed.

ORDER

On appeal from: Gauteng Division of the High Court, Pretoria (Swanepoel AJ, sitting as court of first instance):

The appeal is dismissed with costs, including the costs occasioned by the employment of two counsel.

JUDGMENT

Molemela JA (van der Merwe and Gorven JJA and Daffue and Salie-Hlophe AJJA concurring):

Introduction

[1] This appeal concerns a medical negligence claim in terms of which a mother (the respondent), acting on behalf of her minor child (D M), claimed damages in the Gauteng Division of the High Court, Pretoria (the high court) arising from the brain injury which D M suffered during the birth process at Dilokong Hospital (the hospital) in Limpopo Province. The claim was lodged against the Member of the Executive Council for Health, Limpopo Province (the appellant), who would be vicariously liable for damages caused by the negligent conduct of the hospital staff.

Background facts

[2] The facts of the case are substantially undisputed and are fully set out in the judgment of the high court. Briefly, they are as follows. The respondent was admitted at the hospital in the early hours of 17 July 2010. She was in the early stages of labour. On examination in the labour ward at 03h50, she was assessed as being nine months pregnant by date and 38 weeks by palpitation. Everything appeared to be normal. There are two phases of labour: the latent phase progressing to the active phase. The active phase has two stages, with the first stage beginning when the cervix of the woman in labour reaches a dilation of 4cm and the second phase starting when the cervical dilation is 10cm. An examination at 14h00 revealed that she was still in the latent phase of labour with no risk factors having been noted. Her vital signs were noted as normal, as were those of the foetus. The examination that

was done at 18h00 revealed that the dilation of her cervix was 4cm; thus, she had entered the active first stage of labour. Labour progressed normally.

[3] Some concerns relating to the slow progression of labour were noted in the partogram at 00h00. The partogram is a form that must be completed by midwives to record foetal and maternal information and to graphically reflect the progress of labour. The National Guidelines for Maternity Care published in 2007¹ (maternity guidelines) list 'poor progress in the active phase of labour (crossing partogram action line)' and 'thick meconium staining of the liquor' among the list of labour-related problems. The entry made in the partogram at 01h20 on 18 July 2010 showed that the respondent's progress had slowed down. The graphic presentation in the partogram showed that the action line had been crossed. The plan was to notify the doctor about the respondent's condition. The notes reflect that the doctor was summoned at 01h30 and he undertook to attend to the respondent. I pause here to mention that in terms of the maternity guidelines, if the cervix of the woman in labour has reached 10cm dilation, then the delivery must be expedited by using forceps. However, where the cervical dilation has not yet reached 10cm, then preparations for a caesarean section must be made.

[4] The respondent's examination at 01h50 revealed that the amniotic sac membranes had ruptured, and meconium-stained liquor, grade 2, was observed. She was fully dilated and was thus in the second stage of active labour. At 02h00, the attending midwife again summoned the doctor who was on call. The clinical notes recorded that the doctor promised to attend. It further recorded that the plan was to monitor the foetal and maternal condition. The note made at 02h00 was the last entry made in the clinical notes. There is no indication of any monitoring whatsoever having taken place between 02h00 and the delivery of the baby at 03h35. Despite it being common cause that D M was born at 03h35, the partogram inexplicably reflects an entry purporting to show the position of the foetal head (in utero) at 04h00.

¹ Department of Health RSA *Guidelines for Maternity Care in South Africa* 3 ed (2007).

[5] The clinical notes pertaining to D M's birth recorded that her 1-minute Apgar score was 5/10.² Her score for the heart rate was 2, while she scored 0 for respiration and muscle tone. Her score for response to stimulation was 1 and she scored 2 for colour. A second Apgar assessment was done 5 minutes after D M's birth; she scored 7/10, again the score for heart rate was 2. At that stage, her breathing had improved somewhat, and she had a better muscle tone. The neonate assessment form shows that D M had a slow respiration rate, a weak Moro reflex,³ and an absent grasp reflex and 'cry'. She had to be resuscitated. Her blood glucose was high.

[6] Later observations noted that D M had suffered seizures. Her 'cry' was still not audible, and at 13h10 on 20 July 2010 a doctor noted the presence of hypertonia⁴ and the absence of Moro reflex; in addition, D M's muscle tone was described as 'floppy'. A diagnosis of hypoxic-ischaemic encephalopathy (HIE) was recorded. Ischaemia is defined as a 'deficiency of blood in a body part due to functional constriction or actual obstruction of a blood vessel'. Hypoxia results from a sustained reduction in the supply of oxygen to the brain. It is common cause that D M developed severe asymmetrical mixed-type cerebral palsy,⁵ predominantly dystonic.

[7] It was on that basis that the respondent claimed damages from the appellant. In her particulars of claim, the respondent asserted, inter alia, that the appellant had failed to ensure that a suitably qualified medical practitioner attended to the

² APGAR stands for Appearance, Pulse, Grimace, Activity and Respiration. In the Apgar test, five factors are used to check a newborn baby's health. Each is scored on a scale of 0 to 2, with 2 being the best score. For Appearance the skin colour is checked; for Pulse, heart rate; for Grimace, reflexes; for Activity, muscle tone; and for Respiration, breathing rate and effort. The individual scores for the five factors are added up to obtain a score out of ten. The highest score to be achieved is 10 and scores of 7, 8 or 9 out of 10 are normal or good scores. Source: kidshealth.org.

³ The Moro reflex is an infantile reflex that, inter alia, entails the infant's spreading of the arms in response to a sudden loss of support. In W B Saunders Co's *Dorland's Illustrated Medical Dictionary* 25 ed (1974), Moro reflex is described as follows: '[O]n placing an infant on a table and then forcibly striking the table on either side of the child, the arms are suddenly thrown out in an embrace attitude; called also *startle r[eflex]*'.

⁴ W B Saunders Co's *Dorland's Illustrated Medical Dictionary* 25 ed (1974) defines 'hypertonia' as 'increased resistance of muscle to passive stretching'.

⁵ The American College of Obstetrics and Gynaecology (ACOG) defines neonatal encephalopathy as a clinically defined syndrome of disturbed neurological function in the earliest days of life of an infant born after 35 weeks of gestation manifested by a subnormal level of consciousness or seizures and often accompanied by difficulty with initiating and maintaining respiration and depression of tone and reflexes.

respondent at all material times of her labour; failed to take required steps to ensure proper, timeous and professional assessment, monitoring and management of patients; and failed to take steps to prevent the occurrence of complications when this could have been done by exercising reasonable care and diligence. Furthermore, it was averred, inter alia, that the hospital staff had failed to perform accurate and proper cardiotocographic⁶ (CTG) tracings of the foetal heart rate; failed to record an accurate partogram; failed to monitor the foetal heart rate with sufficient frequency; and failed to detect that D M was in foetal distress.

[8] The appellant's plea amounted to a bare denial, as the appellant had denied every aspect of negligence which the respondent had alleged in the particulars of claim, without stating material facts upon which she was relying. The pre-trial minutes identified the issues for determination as negligence and causation and indicated that the parties agreed to separate the issues of liability and quantum. The trial commenced in February 2021.

[9] The only evidence adduced before the high court was that of experts. The expert witnesses who testified formulated their opinions based on the respondent's medical records, her antenatal card, the partogram, the neonatal records, as well as the magnetic resonance imaging (MRI) scan performed on 4 February 2015. The MRI features were considered as diagnostic of an acute profound (central) hypoxic ischaemic injury. The diagnosis was later changed to central perirolandic, basal ganglia and thalamic hypoxic ischaemic injury (PBGT).

[10] The respondent adduced the evidence of two experts, namely Dr Murray, an obstetrician and gynaecologist, and Prof Smith, a neonatologist. The appellant adduced the evidence of only one expert, namely Prof Cooper, a neonatologist. The appellant's gynaecologist and obstetrician, Prof Lombaard, signed a joint minute of experts with Dr Murray, but did not testify during the trial.

[11] In its judgment, the high court outlined the issues for determination as follows:

⁶ A cardiotocograph monitors the foetal heartbeat and the contractions of the uterus.

[8] It is not in dispute that [the appellant] had a duty of care to ensure that [the respondent] received proper medical care and that [the appellant] is vicariously liable for the acts or omissions of the hospital staff. It is also not in dispute that [the respondent] received substandard care. There is no evidence that she was monitored at all from 02h00 onwards, at a time when the protocols require constant monitoring of the mother and foetus. [The appellant] accepts that the nursing staff were negligent.

[9] The sole question for determination is whether negligent omission resulted in the hypoxic ischaemic injury and whether, with proper care, the injury could have been prevented.'

[12] Having analysed the evidence of all the witnesses, the high court found that the omission of the hospital staff to properly monitor the respondent's labour, their failure to recognise foetal distress and the consequent failure to take urgent steps to deliver D M caused the brain injury that led to D M's cerebral palsy. It was common cause that D M's brain injury affected the basal ganglia-thalamic (BGT) structures of her brain. This pattern of injury is ordinarily associated with an acute profound insult. However, in determining causation, the high court accepted Prof Smith's evidence that subacute or subthreshold intermittent hypoxic events that built up over an extended period could cause and had caused an acute-profound type injury to the BGT structures of the brain, that is, in the absence of a sentinel event. The high court therefore concluded that the appellant was liable to the respondent for delictual damages. This appeal is with the leave of the high court.

[13] It bears mentioning that some months prior to the appeal hearing, the MEC for Health, Eastern Cape applied to the President of the Supreme Court of Appeal for leave to be admitted as an *amicus curiae* (*amicus*) in the appeal proceedings. On 7 March 2022, the Deputy President of the Supreme Court of Appeal granted an order admitting the MEC for Health, Eastern Cape as *amicus* and simultaneously issued directions pertaining to the filing of the heads of argument and related matters.

[14] Following the granting of that order, the *amicus* brought an application for leave to adduce further evidence on appeal. The respondent opposed the application. The application to adduce new evidence was heard prior to the

commencement of the appeal hearing. Having heard the oral submissions of counsel, the application was dismissed with costs, including the costs occasioned by the employment of two counsel. The court indicated that reasons for that order would be furnished in due course. It would be prudent to furnish those reasons at the end of this judgment, as the considerations which informed our decision to dismiss the application were informed by the analysis of expert evidence and the authorities discussed in the succeeding parts of this judgment. Suffice it to mention that the *amicus* was granted leave to make oral submissions for a maximum of 30 minutes, limited strictly to new submissions not dealt with by the appellant's counsel.

[15] The element of wrongfulness was admitted in the parties' pre-trial minutes. The only elements of delictual liability that remained as issues to be determined at the commencement of the trial were negligence and causation. It is to these two elements of delict that I now focus my attention.

Evaluation of expert evidence

[16] Since reliance was placed exclusively on expert evidence, it is necessary to preface my discussion on the delictual elements of negligence and causation with an outline of the legal principles applicable to the evaluation of expert evidence.

[17] The functions of an expert witness were explained by this Court as follows in *McGregor and another v MEC Health, Western Cape*:⁷

‘. . . The functions of an expert witness are threefold. First, where they have themselves observed relevant facts that evidence will be evidence of fact and [be] admissible as such. Second, they provide the court with abstract or general knowledge concerning their discipline that is necessary to enable the court to understand the issues arising in the litigation. This includes evidence of the current state of knowledge and generally accepted practice in the field in question. Although such evidence can only be given by an expert qualified in the relevant field, it remains, at the end of the day, essentially evidence of fact on which the court will have to make factual findings. It is necessary to enable the court to assess the validity of opinions that they express. Third, they give evidence concerning their own

⁷ *A M and another v MEC for Health, Western Cape* [2020] ZASCA 89; 2021 (3) SA 337 (SCA) para 17.

inferences and opinions on the issues in the case and the grounds for drawing those inferences and expressing those conclusions.'

[18] Endorsing the approach followed by the House of Lords in *Bolitho v City and Hackney Health Authority*,⁸ this Court in *Michael and Another v Linksfeld Park Clinic (Pty) Ltd and Another*⁹ (*Linksfeld*) cautioned that a court is not bound to absolve a defendant from liability for negligent medical treatment or diagnosis simply because expert opinion evidence is that the treatment or diagnosis was in accordance with sound medical practice. It laid down that what is required in that evaluation is to determine whether the opinions advanced by the experts are founded on logical reasoning.¹⁰

Negligence

[19] As is apparent from para 11 above, the appellant conceded in the high court that the hospital staff had been negligent and concentrated on the issue of factual causation. The appellant took the same stance in this Court. For the reasons briefly set out below, the concession that negligence on the part of the hospital staff had been proved was fully justified. The test for establishing negligence is trite;¹¹ it rests on two bases, namely, reasonable foreseeability and the reasonable preventability of damage and failure to act accordingly. What is or is not reasonably foreseeable in a particular case is a fact-bound enquiry.¹²

[20] The standards that were applicable in clinics, community health centres and district hospitals in South Africa at the time of D M's birth were those specified in the maternity guidelines, which emphasise the necessity to monitor a woman in labour. They set out the monitoring that is considered appropriate. It is clear from the maternity guidelines that certain steps need to be taken when labour is prolonged.

⁸ *Bolitho v City and Hackney Health Authority* [1998] AC 232; [1997] UKHL 46; [1997] 4 All ER 771; [1997] 3 WLR 1151 at 241-242. Also see *Daubert et al v Merrell Dow Pharmaceuticals Inc* [1993] USSC 99; 509 US 579 (1993).

⁹ *Michael and Another v Linksfeld Park Clinic (Pty) Ltd and Another* [2001] ZASCA 12; 2001 (3) SA 1188 (SCA); [2002] 1 All SA 384 (SCA) para 36.

¹⁰ *Linksfeld* para 37.

¹¹ *Kruger v Coetzee* 1966 (2) SA 428 (A); [1966] 2 All SA 490 (A).

¹² *Pitzer v Eskom* [2012] ZASCA 44 (SCA) para 24.

These steps include frequent monitoring, especially to enable the hospital staff to identify foetal distress.

[21] Dr Murray opined that the second stage of labour is the most critical time for a foetus, as it is during this time that contractions occur most frequently and are strongest. Although the maternity guidelines stipulate that progress which has crossed the action line and the presence of thick meconium are indications for CTG monitoring, there is no evidence of CTG monitoring having been done during the respondent's labour despite the presence of grade 2 meconium-stained liquor and slow progress of labour. Dr Murray testified that the foetal condition was 'severely inadequately monitored' during the last 95 minutes of the respondent's labour. In the joint minute, Prof Lombaard agreed with this statement.

[22] Inexplicably, the partogram completed by the nurse bore a mark purporting to show the foetal head position in utero at 04h00 despite D M having been delivered at 03h35. Remarking on that glaring error, the appellant's own counsel stated that the 04h00 entry made in the partogram places a question mark on the truthfulness of its contents. Surprisingly, the nurse who attended to the appellant was not called to testify despite counsel having undertaken to do so. There remains no explanation for the wrong entry in the partogram and the failure to make clinical notes at a critical time when the only intervention to avoid harm was, in terms of the maternity guidelines, to deliver the baby as soon as possible.

[23] All things considered, there can be no doubt that reasonable nurses and doctors in the position of the attending hospital staff would have monitored the respondent and the foetus more closely. Notably, it was not the appellant's case that the hospital experienced a shortage of staff on the night in question or that it did not have the necessary equipment to expedite D M's delivery. The concessions regarding negligence, made by counsel during cross-examination,¹³ in the heads of argument and during oral argument, were therefore rightly made.

¹³ While cross-examining Dr Murray, counsel for the appellant prefaced one of the questions as follows: 'The infrequent monitoring during this time must also be accepted, especially bearing in mind that there was a meconium staining thicker and slow progress. Meaning more foetal surveillance was required by way of CTG because of the increased risk of foetal distress'. Counsel went on to say the following: 'Then [Prof Lombaard] said, secondly the foetal heart rate should be monitored every

Causation

[24] It is well-established that causation has two elements, namely: (i) factual causation, determined by applying the 'but for' test; and (ii) legal causation, which answers the question of whether the wrongful act is linked sufficiently closely to the harm suffered; if the harm is too remote, then there is no liability.¹⁴ In *Za v Smith and Another*,¹⁵ Brand JA described the applicable test as follows:

'The criterion applied by the court a quo for determining factual causation was the well-known but-for test as formulated, eg by Corbett CJ in *International Shipping Co (Pty) Ltd v Bentley* 1990 (1) SA 680 (A) at 700E-H. What it essentially lays down is the enquiry – in the case of an omission – as to whether, but for the defendant's wrongful and negligent failure to take reasonable steps, the plaintiff's loss would not have ensued. In this regard this court has said on more than one occasion that the application of the "but-for test" is not based on mathematics, pure science or philosophy. It is a matter of common sense, based on the practical way in which the minds of ordinary people work, against the background of everyday-life experiences. In applying this common sense, practical test, a plaintiff therefore has to establish that *it is more likely than not that, but for the defendant's wrongful and negligent conduct, his or her harm would not have ensued*. The plaintiff is not required to establish this causal link with certainty (see eg *Minister of Safety & Security v Van Duivenboden* 2002 (6) SA 431 (SCA) para 25; *Minister of Finance v Gore* NO [2006] ZASCA 98; 2007 (1) SA 111 (SCA) para 33. See also *Lee v Minister of Correctional Services* [2012] ZASCA 30; 2013 (2) SA 144 (CC) para 41.).' (Own emphasis.)

[25] Applying the test set out above to the facts of this case, the crisp question is: is it more likely than not that, but for the wrongful and negligent conduct of the appellant's employees, D M would not have suffered a brain injury during the birth

second contraction and that further foetal heart rate was only monitored every 30 minutes. Well, we know according to the guidelines that it is not an appropriate monitoring that deviates from the standard. . . . I do not think that we have difficulty to say, well that . . . in itself is method to conduct, not necessarily [causally] connected to the outcome of the baby but that in itself was negligent'.

¹⁴ *International Shipping Company (Pty) Ltd v Bentley* [1990] 1 All SA 498 (A); 1990 (1) SA 680 (A) at 700E-I.

¹⁵ *Za v Smith and Another* [2015] ZASCA 75; 2015 (4) SA 574 (SCA); [2015] 3 All SA 288 (SCA) para 30.

process, as a result of hypoxic ischemia?¹⁶ The high court found in the affirmative. The high court relied on the evidence of Prof Smith and an article that he co-authored, which was based on a case-study.¹⁷ The study was in respect of 10 cerebral palsy survivors who sustained intrapartum hypoxic ischaemic basal ganglia-thalamic (BGT) pattern injury in the absence of an obstetric sentinel event. In respect of all 10 patients there was evidence of foetal distress consisting of pathological or suspicious CTG prior to delivery, and the median time interval between the first pathological CTG and delivery of the infant was 179 minutes. Prof Smith's article concluded that in the absence of a perinatal sentinel event, subacute or subthreshold prolonged or intermittent intrapartum hypoxic ischaemia may cause a BGT pattern brain injury but that warning signs in the form of non-reassuring foetal status, would be detectable by means of cardiotocograph or auscultation monitoring up to a few hours before delivery.

[26] The primary thrust of the appellant's attack on the judgment of the high court was its acceptance of Prof Smith's evidence pertaining to the mechanism of the brain injury suffered by D M. The appellant contended that the high court erroneously accepted the validity of Prof Smith's theory, published in a 2020 medical journal even though his theory was in its developmental stage and thus unsupported, was not compelling and ran contrary to the 'traditional view' that a BGT pattern (grey matter injury) is associated with an acute profound hypoxic ischaemic event. The theory posited in that article had already been rejected by this Court in *A N (obo E N) v MEC for Health, Eastern Cape*¹⁸ (*A N v MEC*), so it was argued. The appellant laid great emphasis on the fact that the generally accepted view supported by literature was that acute profound insults happen because of sentinel events and occur suddenly and without warning, and therefore could not be averted.

¹⁶ Ischaemia is a restriction in blood supply. Blood supplies oxygen to the brain. A continued restriction in blood supply leads to a lack of oxygen supply. Where this takes place, bradycardia occurs. This is a slowing of the foetal heart rate. Hypoxia results from a sustained reduction in the supply of oxygen to the brain. The resulting injury to the newborn baby is described as hypoxic-ischaemic encephalopathy. This is a form of neurological dysfunction that leads to the development of cerebral palsy.

¹⁷ J Smith et al 'Intrapartum Basal Ganglia-Thalamic Pattern Injury and Radiologically Termed "Acute Profound Hypoxic-Ischemic Brain Injury" Are Not Synonymous' (2020) *American Journal of Perinatology*.

¹⁸ *A N (obo E N) v MEC for Health, Eastern Cape* [2019] ZASCA 102; [2019] 4 All SA 1 (SCA).

[27] The appellant contended that the respondent's experts had applied reverse reasoning and had ventured beyond the proven facts in order to apply the theory propounded by Prof Smith. Furthermore, it was contended that even if Prof Smith's article were to be regarded as authoritative, there was no evidence showing that the foetus was in a compromised state for a prolonged time prior to delivery, which is a fact that is necessary for the application of Prof Smith's theory.

[28] The central question in this appeal is whether on the facts set out in the preceding paragraphs, Prof Smith's opinion was founded on logical reasoning. This includes an assessment of whether the reasoning or methodology underlying his testimony is scientifically valid and whether that reasoning or methodology can be applied to the facts in issue.¹⁹ It is about the cogency of the underlying reasoning which lead the experts to their conflicting opinions.²⁰ If the expert's opinion is logical and can reasonably be held on those facts and his chain of reasoning, then the threshold will be satisfied even though his is not the only opinion that can be expressed on those facts.²¹

[29] The appellant levelled considerable criticism at Prof Smith's testimony and contended that his evidence and the article that he relied on ought to be rejected. I disagree. There is nothing illogical about Prof Smith's opinion. It was not and could not be disputed that Prof Smith and his colleagues had identified 10 cases of patients with BGT pattern injuries (with no sentinel events and no fixed terminal bradycardia²²), where proper monitoring demonstrated that the babies had commenced displaying foetal distress at a median of about three hours before delivery. Thus, it was uncontroverted that such cases are possible and the only real remaining question on the merits is whether this probably was such a case. I nevertheless deal with the criticisms levelled against the article and Prof Smith's evidence in respect thereof.

¹⁹ *Daubert et al v Merrell Dow Pharmaceuticals Inc* [1993] USSC 99; 509 US 579 (1993) at 592.

²⁰ *S v Rohde* [2021] ZASCA 134; 2021 (2) SACR 565 (SCA) para 70.

²¹ *Imperial Marine Company v Motor Vessel Pasquale della Gatta and Another; Imperial Marine Company v Motor Vessel Filippo Lembo and Another* [2011] ZASCA 131; 2012 (1) SA 58 (SCA); [2012] 1 All SA 491 (SCA) para 26.

²² The normal foetal heart rate ranges between 120 and 160 beats per minute. In her medico-legal report, Dr Murray said: 'For infants, bradycardia is defined as a heart rate of less than 110 beats per minute'.

[30] The appellant described Prof Smith's opinion as 'shaky' and 'unreliable'. Notably, the appellant did not call an expert to challenge the reliability of Prof Smith's opinion during the trial. In his testimony, Prof Smith expressed the same opinion he expressed in the article he co-authored, which was peer-reviewed prior to its publication. Prof Cooper did not challenge the validity of Prof Smith's hypothesis based on animal studies and merely opined in the joint minute that it had been published online and not in print. According to him, it is only when the article was in print that peer review would take place. In his testimony, Prof Smith denied that his article had not been peer-reviewed and explained that Prof Cooper had confused post-publication with peer review. Thereafter, no further cross-examination was pursued on this aspect.

[31] It bears noting that it was not disputed that the online journal in which the article was published is reputable. The article was based on information from textbooks and articles, as well as the personal experiences of, and investigations conducted by Prof Smith and of the other experts who co-authored the article. It was also based on experiments on animal models and data obtained from a case-study relating to human fetuses by others, or information from textbooks. As correctly pointed out by the high court, Prof Cooper is one of Prof Smith's peers. If he had any qualms about the study, its methodology, the data, or its interpretation, he should have raised those concerns. He failed to engage with the validity of Prof Smith's methodology. In my view, the opinion propounded by Prof Smith is founded on logical reasoning, survives scrutiny and is foursquare in accordance with the *Linksfield* principle.

[32] Although the appellant criticised Prof Smith's expert opinion regarding the mechanism of the insult and his reliance on the case-study involving 10 cases, the appellant could not point to any contrary literature. None of the articles submitted by the appellant ruled out the theory that intermittent episodes of hypoxia can culminate in an injury of an acute profound type as propounded by Prof Smith.

[33] In an attempt to discredit Prof Smith's case-study and its findings, the respondent relied, inter alia, on a study conducted by Okumura et al,²³ which determined that, in some cases, the origin of the foetal bradycardia could not be determined despite the labour being monitored. But this article obviously did not contradict that the research of Prof Smith et al had uncovered the aforesaid 10 cases. And it bears emphasising that the Rennie and Rosenbloom article²⁴ relied upon by the appellant was based on brain injuries consequent on the occurrence of sentinel events; in this matter, the joint minute of experts acknowledged that there was no evidence that a sentinel event had occurred.

[34] Insofar as the size of Prof Smith's case-study was criticised as too small on account of having analysed 10 cases, this criticism is unjustifiable. It is worth noting that the Pasternak study²⁵ relied upon by the appellant was based on 11 patients. To my mind, Prof Smith's explanation for relying on only 10 cases is plausible. He pointed out that the antepartum and maternal and neonatal characteristics of the 10 cases were retrospectively analysed. The 10 cases were not hand-picked, as alleged by the appellant; rather, the study was based on actual cases where the injury sustained was of the acute profound type, where there was no sentinel event and where the foetal heart rate had been properly monitored.

[35] The fact of the matter is that the appellant did not submit scientific data or evidence ruling out the reliability of Prof Smith's expert opinion. Moreover, the trial court was not provided with any article which served to refute the observations made in his case-study. The insurmountable difficulty for the appellant is that it failed to call an expert who could engage with and challenge the reliability of Prof Smith's theory.²⁶ That being the case, counsel's submission that Prof Smith's approach was

²³ A Okumura, F Hayakawa, T Kato, K Kuno & K Watanabe 'Bilateral basal ganglia-thalamic lesions subsequent to prolonged fetal bradycardia' (2000) 58 *Early Human Development* 111.

²⁴ J Rennie & L Rosenbloom 'How long have we got to get the baby out? A review of the effects of acute and profound intrapartum hypoxia and ischaemia' (2011) *The Obstetrician & Gynaecologist* 13(03): 169-174.

²⁵ J F Pasternak & M T Gorey 'The Syndrome of Acute Near-Total Intrauterine Asphyxia in the Term Infant' (1998) *Pediatric Neurology* 18(05): 391-398.

²⁶ *Oppelt v Head: Health, Department of Health Provincial Administration: Western Cape* [2015] ZACC 33; 2016 (1) SA 325 (CC); 2015 (12) BCLR 1471 (CC) paras 39-40.

not the medical norm does not serve to refute Prof Smith's uncontested evidence, at the level of factual probability.²⁷

[36] Furthermore, a lack of general acceptance of his theory cannot, without more, warrant a rejection of his theory,²⁸ as it is backed up by a case-study. Clearly, there is no basis in law for rejecting Prof Smith's theory. The 10 cases on their own demonstrate that a series of partial intermittent, subacute/subthreshold hypoxic insults can cause an injury to the BGT deep nuclear structures including the perirolandic area with a pattern like that revealed by D M's MRI scan. Moreover, Prof Smith's conclusions were not based exclusively on animal experiments. It was also based on his experience and that of his co-authors over many years, involving human cases. His views find material support in Volpe's textbook,²⁹ where the following is stated in relation to the injuries arising from an insult to the deep nuclear-brain stem, in which the insult is severe and abrupt:

'In the more prolonged and less severe insults, the diversion of blood to deep nuclear structures occurs at least to a degree, and thus the cerebral regions are more likely to be affected. Studies in the near-term fetal lamb indicate that the severe terminal insult that results in injury to deep nuclear structures especially may be likely to occur after brief, repeated hypoxic-ischaemic insults *first* cause a cumulative deleterious effect on cardiovascular function that presumably *then* can result in a severe late insult.'

[37] The appellant must accept her counsel's choices regarding the expert evidence that was adduced on her behalf and the failure to call an expert that could challenge Prof Smith's theory. In this regard, I align myself with the following remarks made by the high court in its judgment:

'[67] There is no substantive evidence from [the appellant] to refute Prof. Smith's version. I would have expected [the appellant] to put up some evidence as to the cause of the injury. I say so in the full understanding that [the appellant] does not bear an onus of proof. However, when [the respondent] presents a well-reasoned opinion, one would expect [the appellant] to put up some version of its own. [The

²⁷ Ibid.

²⁸ *Linksfeld* para 37.

²⁹ J J Volpe 'Hypoxic-Ischemic Injury in the Term Infant: Pathophysiology' Chapter 9 in J J Volpe *Neurology of the Newborn* 6 ed (2018) at 502.

appellant] did not even put up a version during cross-examination. I therefore accept Prof. Smith's evidence, that a series of partial intermittent, subacute/subthreshold hypoxic insults may result in this type of injury to the BGT deep nuclear structures including the perirolandic area.'

From my point of view, this finding of the high court is unassailable.

[38] Having considered the conspectus of the evidence, I am satisfied that the high court's acceptance of Prof Smith's evidence, that a series of partial intermittent, subacute/subthreshold hypoxic insults can result in this type of injury to the BGT deep nuclear structures including the perirolandic area was justified.

[39] It follows that in determining the causation element in this matter, the starting point is that the BGT brain injury pattern revealed by the MRI, ie the injury to the central or deep grey matter of the brain, (the basal ganglia and/or thalami and/or sensorimotor cortex), could in principle have been caused by either by an acute profound total or near-total hypoxic ischaemic insult or intermittent or prolonged episodes of subacute and subthreshold interruption of the supply of blood to the brain. As I have said, the crucial question is which of these probably occurred in this case. Of cardinal importance in this regard is that in their joint minute Dr Murray and Prof Lombaard agreed that there was no evidence of a sentinel event, whereas the *A N v MEC* judgment recorded that the experts were agreed that there had been a sentinel event. This is one crucial aspect that distinguishes the case *A N v MEC* on the facts. It is somewhat odd that even though the appellant is content with the order granted in *A N v MEC* and supports the evaluation of the evidence in that matter, the appellant's counsel argued that this Court's assertion (in paragraph 17) of that judgment that the experts were agreed that there was a sentinel event is wrong.

[40] It bears emphasising that the present appeal is not a debate about whether *A N v MEC* was correctly decided or not. Besides, it is a trite principle of our law that every case must be decided on its own facts and on the evidence adduced in that specific matter. Factual findings made in one case cannot be transferred to produce the same factual findings in another case with similar facts. *A N v MEC* was a judgment reached on the basis of expert evidence presented in that case and its conclusion was based on the facts of that case. In the face of this important

distinguishing fact, the appellant's expectation that the outcome of this case ought to be the same as that of *A N v MEC* is misplaced. The appellant's apparent anxiety that this Court's confirmation of the decision of the high court would open the floodgates of medical negligence claims against the government is an irrelevant consideration. After all, nothing bars a party from adducing all the evidence that it considers necessary to persuade a court to reach an outcome favourable to it. Advocacy tools such as cross-examination, presentation of contrary evidence will always be available for counsel to use in similar cases in the future.

[41] Reverting to the facts of this case, it is of significance that Dr Murray noted an entry in the respondent's medical records categorising her pregnancy as 'low risk'. It was also noted that she had an adequate pelvis. In the joint minutes of Dr Murray and Prof Lombaard, there was consensus that there was no recorded sentinel or catastrophic event (uterine rupture, uterine tear, placenta praevia, abruption placenta, umbilical cord prolapses, foeto-maternal haemorrhage) which occurred during labour which could theoretically explain the outcome of D M developing an encephalopathy which developed into cerebral palsy. The expert evidence demonstrated that these are all rare, traumatic and easily diagnosable events. Importantly, whilst both Dr Murray and Prof Smith conceded that a cord compression (not to be confused with a cord prolapse) would not leave a 'footprint', they convincingly explained that it was improbable that a cord compression would cause an abrupt total hypoxic-ischaemic event, 'usually it comes and goes'.

[42] The paediatric experts, Prof Smith and Prof Cooper, agreed that there was no clear evidence suggesting that infection, genetic or anatomical abnormalities of the brain played a causative role. The joint minute of the paediatric neurologists, too, expressed consensus on this aspect. Crucially, Prof Smith asserted that in the event of a cord compression having the same effect as a sentinel event, that would have meant that there was a cord compression which occurred in the 20 minutes before delivery, resulting in a bradycardia (the heart rate falling to 60 to 80 beats per minute). He opined that if that were so, the bradycardia could not have resolved itself so quickly that at 1 minute of life (when D M's first Apgar test was performed) the heart rate was normal (the Apgar score for the heart rate was 2). It bears noting that this evidence was not disputed.

[43] On this aspect, Dr Murray, the only obstetrician and gynaecologist who testified, stated that typically a cord compression that is equal to a sentinel event occurs when a cord prolapses. According to her, such an event would not go unnoticed when there is proper monitoring, as it can be detected by decelerations of the foetal heart rate. Based on these two experts' uncontested evidence on this aspect, it is improbable that there could have been a cord compression that had the same effect as a sentinel event. In the absence of a sentinel event, the aetiology of D M's brain injury as one arising from intermittent hypoxia, as described by Prof Smith, is the more probable explanation.

[44] Regarding the late placental insufficiency that was observed when the respondent's placenta was examined following D M's birth, Prof Smith opined that it, too, would have caused foetal compromise, which would have impacted on the foetus's ability to tolerate a normal labour. If this aspect had been noted during labour, it would have required intervention to avert the eventuation of harm. However, this was an aspect that was obviously missed due to inadequate monitoring.

[45] In an attempt to refute the occurrence of foetal distress, the appellant referred to the relatively high Apgar score allocated to D M at birth, which, it was submitted, was incompatible with foetal distress. However, this stance fails to take into consideration that the paediatricians accepted the accuracy of the following information, which was recorded by a reviewing doctor following D M's birth: 'Prolonged 2nd stage; [Meconium-stained liquor] MSL II; baby resuscitated, no meconium plug or laryngoscopy . . . glucose 11.2'. In respect of the Apgar score, the following was recorded: 'pink . . . regular breathing; floppy; the baby was admitted and supplemental oxygen via head box was administered'. Both paediatricians agreed that the Apgar scores recorded in D M's medical records were probably assisted by resuscitation. What was more significant in this regard, however, was the evidence of Prof Smith that a sentinel event would necessarily have resulted in a fixed terminal bradycardia, which on the probabilities was incompatible with the baby's Apgar scores of 2 for heart rate at 1 minute and 5 minutes after delivery.

[46] Dr Murray's uncontested evidence was that the hypoxic ischaemic episode would have manifested itself in decelerations of the foetal heart rate, which would have been noted, had there been adequate monitoring. Her uncontested evidence was that in the face of foetal distress, the desired preventive action indicated in the maternity guidelines would have been to expedite D M's delivery. Her uncontested opinion was that there would have been sufficient time to expedite D M's delivery within twenty to twenty-five minutes using forceps, which would have prevented the onset of D M's brain injury. Prof Lombaard did not dispute the estimated delivery time.

[47] Both obstetric experts agreed that the exact time at which foetal distress occurred was impossible to determine due to the absence of clinical notes detailing the last 95 minutes of the respondent's labour. Despite it having been the hospital staff's obligation to monitor the foetal heart rate and to make the necessary clinical notes, which it failed to do, the appellant tried to capitalise on the fact that the exact times at which the foetal heart rate was indicative of foetal distress could not be established. In my opinion, it is fallacious to posit that where a woman in labour has not been monitored by hospital personnel at all during the most critical stage of her labour, the MEC responsible for the relevant hospital should escape liability arising from the negligence of its employees purely on the basis that the exact timing of the hypoxic injury of an acute profound nature cannot be ascertained. To do so would be to ignore uncontested evidence that, on probabilities, shows a link between the negligence and the harm that ensued.

***Amicus* application to adduce further evidence on appeal**

[48] Against the background of the facts of this case and applicable authorities, it is now convenient to give reasons for this Court's dismissal of the *amicus* application to adduce further evidence in the appeal. As mentioned before, the application to admit further evidence was premised on the contention that the medical and scientific articles sought to be introduced as further evidence would reveal the unreliability of Prof Smith's theory. It is well-established that new evidence introduced on appeal is only admitted in exceptional circumstances. The following

passages of the seminal judgment of the Constitutional Court in *Rail Commuters Action Group and Others v Transnet Ltd t/a Metrorail and Others*³⁰ are apposite:

‘The SCA has similarly held that new evidence should be admitted on appeal under this section only in exceptional circumstances. This is because on appeal, a court is ordinarily determining the correctness or otherwise of an order made by another court, and the record from the lower court should determine the answer to that question. It is accepted however that exceptional circumstances may warrant the variation of the rule. Important criteria relevant to determining whether evidence on appeal should be admitted were identified in *Colman v Dunbar*. Relevant criteria include the need for finality, the undesirability of permitting a litigant who has been remiss in bringing forth evidence to produce it late in the day, and the need to avoid prejudice. One of the most important criteria was the following:

“The evidence tendered must be weighty and material and presumably to be believed, and must be such that if adduced it would be practically conclusive, for if not, it would still leave the issue in doubt and the matter would still lack finality.”.’

[49] The argument presented in support of this application strayed far from the criteria mentioned above. The thrust of the *amicus*’s argument was that allowing the introduction of the articles would ensure that the erroneous findings of the high court regarding the brain injury and how it is caused would have precedential value, as this would expose the Department of Health to billions of rands in damages claims. It was argued that whereas what could be distilled from previous judgments of this Court was that acute profound insults happen as a result of sentinel events which occur suddenly and without warning, the high court had departed from that conventional view because of its erroneous acceptance of a controversial theory propounded by Prof Smith. In fortification of his argument, counsel for the *amicus* referred us to the discrepancies in factual findings in *A N v MEC for Health and MEC for Health and Social Development, Gauteng v M M (obo O M)*³¹ despite the pattern of the infants’ brain injuries being the same. In my view, the different conclusions arrived at by various courts on this aspect perfectly illustrate the long-established principle that every case will be decided on its own merits.

³⁰ *Rail Commuters Action Group and Others v Transnet Ltd t/a Metrorail and Others* [2004] ZACC 20; 2005 (2) SA 359 (CC); 2005 (4) BCLR 301 (CC) at paras 41-43.

³¹ *MEC for Health and Social Development, Gauteng v M M (obo O M)* [2021] ZASCA 128 (SCA).

[50] The *amicus*, being the MEC for Health for the Eastern Cape Province, confirmed having been a litigant in several medical negligence cases of a similar nature to the one under consideration. It is worth mentioning that in *A N v MEC*, this Court bemoaned the prevalence of medical negligence cases arising from hospitals falling under the *amicus*.³² Of significance is that the appellant, being part of government, has the means to engage counsel with the requisite proficiency to ensure that evidence is presented on her behalf in the best way possible. As properly observed in *MEC for Health, Eastern Cape and Another v Kirland Investments (Pty) Ltd*,³³ '[g]overnment is not an indigent or bewildered litigant, adrift on a sea of litigious uncertainty'. The *amicus* must accept that the appellant presented the case to the best of her ability. None of these matters were relevant to the question that had to be answered. There was no legal basis for allowing the *amicus* to attempt to supplement the appellant's case on appeal.

[51] The *amicus's* contentions about the erroneous precedential value arising from reliance on Prof Smith's evidence have no merit. It is trite that each case is decided on its own merits. Each case's factual findings are based on the evidence adduced in that specific case. The *amicus's* contentions also fail to take into account that scientific conclusions are subject to revision.³⁴ The periodic revision of ACOG recommendations attests to this. Trial courts should not fall into the trap of demanding an unduly high measure of proof from a litigant.³⁵ As mentioned in *Linksfeld*, the scientific measure of proof is the ascertainment of scientific certainty, whereas the judicial measure of proof is the assessment of probability.³⁶ The following remarks by Holmes JA in *Ocean Accident and Guarantee Corporation Ltd v Koch*³⁷ are apposite:

'The fact that, scientifically speaking, the aetiology of the disease is uncertain, does not hamper the Court in deciding, on the facts and on the expert evidence adduced in a given case, whether a likely cause was proved in such case. Judicial decisions

³² *A N v MEC* para 28.

³³ *MEC for Health, Eastern Cape and Another v Kirland Investments (Pty) Ltd* [2014] ZACC 6; 2014 (5) BCLR 547 (CC); 2014 (3) SA 481 (CC) para 82.

³⁴ *Daubert et al v Merrell Dow Pharmaceuticals Inc* [1993] USSC 99; 509 US 579 (1993) at 597.

³⁵ *Maqubela v S* [2017] ZASCA 137; 2017 (2) SACR 690 (SCA) para 5.

³⁶ *Linksfeld* para 40.

³⁷ *Ocean Accident and Guarantee Corporation Ltd v Koch* 1963 (4) SA 147 (A).

reflect the particular facts and testimony of each case, and are not intended and cannot be regarded as scientific treatises. Accordingly, the possibility of future scientific disproof of the opinion of one or other of the expert medical witnesses is, judicially, a matter of no moment - the Court must do the best it can on the material presently before it in each case.'

Decades later, similar sentiments were expressed as follows by the United States Supreme Court in *Daubert et al v Merrell Dow Pharmaceuticals Inc*:³⁸

'It is true that open debate is an essential part of both legal and scientific analyses. Yet there are important differences between the quest for truth in the courtroom and the quest for truth in the laboratory. Scientific conclusions are subject to perpetual revision. Law, on the other hand, must resolve disputes finally and quickly. The scientific project is advanced by broad and wide-ranging consideration of a multitude of hypotheses, for those that are incorrect will eventually be shown to be so, and that in itself is an advance.'

I express unqualified agreement with these remarks.

[52] It is common cause that the new evidence sought to be introduced comprised published articles which were already available at the time of the trial. It was therefore open to the appellant to have used the articles in the trial as part of her evidence, had she deemed it necessary to do so. A party's election to present its case in a particular manner is one of the factors that a court will consider within its discretion to allow an *amicus* to adduce evidence. As a general rule, therefore, an *amicus* should not be permitted to introduce evidence, on appeal, that had been available to the parties at the time of the trial but which they elected not to place before the court. Moreover, it was even open to the appellant to apply to introduce the evidence on appeal. The appellant, being a litigant in the matter, did not consider it necessary to do so. The *amicus* was unable to proffer a valid explanation as to why the articles in question should nevertheless be received as evidence on appeal.

[53] A scientific or medical publication that is merely handed up during the proceedings without comment by a witness has no evidential value; such an article has to be properly made part of the evidence by mutual admission or confirmation in

³⁸ *Daubert et al v Merrell Dow Pharmaceuticals Inc* [1993] USSC 99; 509 US 579 (1993) at 596-597.

evidence. In my view, it was not open to the *amicus* to merely hand up the articles it sought to have admitted as new evidence on appeal (with the aim of discrediting Prof Smith's evidence), when Prof Smith did not express any views on the articles during the trial. Moreover, the contents of the articles were not put to him for comment during cross-examination. The articles in question could therefore not serve to discredit Prof Smith's evidence.³⁹

[54] As the *amicus* did not meet the requirements for the admission of new evidence on appeal, the application was doomed to fail. Those are the reasons why the *amicus* was not allowed to adduce new evidence on appeal. I must also add that the *amicus*'s written and oral submissions were not helpful, as they did not add anything new to the debate.

Conclusion

[55] To sum up in respect of the respondent's delictual claim, it is clear from the conspectus of all the medical evidence that there was a lack of adequate monitoring at the most critical stage of the respondent's labour. This conduct fell far short of the very guidelines intended for public hospitals and clinics in South Africa. In the face of slow progress in labour and the presence of thick meconium, there was no intervention on the part of the hospital staff to expedite the delivery of D M to avoid the eventuation of harm. However, it must be borne in mind that the doctor was summoned for the first time at 01h30. Based on the evidence, it is more probable than not that had the doctor who had been summoned arrived, he would, upon noting the unfavourable maternal and foetal conditions and the fact that the respondent was fully dilated, have delivered D M by forceps within 20-25 minutes of that doctor's arrival.⁴⁰ This means that D M would probably have been delivered by 02h15. It follows that D M's brain injury would not have eventuated if her delivery had been expedited, which is the intervention spelt out in the maternity guidelines and confirmed by Dr Murray.

³⁹ *President of the Republic of South Africa v South African Rugby Football Union and Others* [1999] ZACC 11; 2000 (1) SA 1 (CC); 1999 (10) BCLR 1059 (CC) paras 61-65.

⁴⁰ *Life Healthcare Group (Pty) Ltd v Suliman* [2018] ZASCA 118; 2019 (2) SA 185 (SCA) para 16.

[56] For all the reasons set out above, it is clear that but for the appellant's failure to monitor and to take appropriate steps, D M would have been delivered much earlier and the harm would probably not have eventuated. The appellant's argument that there is no evidence that the foetus was compromised for a prolonged time, amounts to refusing to admit the undisputed fact that a period of more than two hours lapsed between the noting of the poor progress of labour at 01h20 and D M's delivery at 03h35. This contention is plainly misconceived and has no merit.

[57] In my view, the findings of Prof Smith's article find a clear correlation between the poor management of D M's labour and the brain injury suffered by D M. It is noteworthy that both Dr Murray and Prof Lombaard agreed that insufficient monitoring of labour could have resulted in foetal distress being missed. It is uncontested that no steps were taken to exclude foetal distress despite poor progress of labour having been noted. Prof Smith's opinion that, in the absence of a sentinel event, it is more probable than not that this substandard intrapartum obstetric management was the cause underlying the sequence of events that culminated in D M being subjected to a hypoxic ischaemic insult that led to her brain injury, is persuasive. Expressed differently, the most probable cause of D M being asphyxiated during labour and consequently suffering cerebral palsy was the failure of the hospital staff to monitor the maternal condition during the most critical time of labour, the failure to monitor the foetal heart rate and the consequent failure to intervene by expediting D M's delivery. The high court's reliance on Prof Smith's evidence cannot be faulted.

[58] Further and in any event, the conspectus of the evidence has shown on a balance of probabilities that the harm suffered by D M is closely connected to the omissions of the hospital staff in relation to their inadequate monitoring of the respondent's critical stage of labour. Consequently, the causal link between the negligence and the harm that ensued is undeniable. It follows that the appeal must fail.

Costs

[59] As regards costs, I can see no reason why this Court should deviate from the general rule that costs should follow the result. The appellant engaged a senior and

junior counsel to represent her in the appeal. Furthermore, during the exchange with the bench, counsel for the appellant indicated that he accepted that in the event of the appeal being dismissed, the costs order would include the payment of costs occasioned by the employment of two counsel. Given all the circumstances of this case, it was prudent for the respondent to employ more than one counsel to represent her in the appeal.

Order

[60] In the result, the following order is made:

The appeal is dismissed with costs, including the costs occasioned by the employment of two counsel.

M B Molemela
Judge of Appeal

Appearances

For appellant: A B Rossouw SC (with L A Pretorius)

Instructed by: State Attorney, Pretoria
State Attorney, Bloemfontein

For respondent: J F Mullins SC (with M Coetzer)

Instructed by: Wim Krynauw Attorneys, Krugersdorp
Martins Attorneys, Bloemfontein

For *amicus curiae*: P J de Bruyn SC (with M Rili and T Rossi)

State Attorney, East London
State Attorney, Bloemfontein