
Opinion

Chief Justice
Maura D. Corrigan

Justices
Michael F. Cavanagh
Elizabeth A. Weaver
Marilyn Kelly
Clifford W. Taylor
Robert P. Young, Jr.
Stephen J. Markman

FILED JULY 23, 2004

ANTONIO CRAIG, by his next
friend, KIMBERLY CRAIG,

Plaintiff-Appellee,

v

Nos. 121405
121407-09
121419

OAKWOOD HOSPITAL, HENRY FORD
HOSPITAL, doing business as HENRY FORD
HEALTH SYSTEM, ASSOCIATED
PHYSICIANS, P.C., and ELIAS
G. GENNAOUI, M.D.,

Defendants-Appellants,

and

AJIT KITTUR, M.D.,

Defendant.

YOUNG, J.

Plaintiff, now an adult, suffers from cerebral palsy, mental retardation, and a number of other neurological and physical ailments. He argues, through his mother as next friend, that these conditions are the proximate results of defendants' negligence in treating his mother during her labor leading to his delivery. Specifically, plaintiff

maintains that defendants administered an excessive amount of a contraction-inducing medication to his mother and were unable to detect signs of fetal distress because they failed to make appropriate use of fetal monitoring devices. The trial court denied defendants' request to hold a *Davis-Frye* hearing on expert testimony that purported to draw a causal connection between these breaches of the standard of care and plaintiff's present neurological and physiological condition.

Following a five week trial, the jury returned a verdict in plaintiff's favor. The trial court thereafter determined that defendant Henry Ford Health System was liable as a successor corporation to defendant Associated Physicians, P.C. The trial court denied the defendants' motions for judgment notwithstanding the verdict or for a new trial. The Court of Appeals affirmed the judgment of liability, but ordered remittitur on lost wage earning capacity.¹ We reverse and remand the matter for entry of judgment in defendants' favor.

I. FACTS AND PROCEDURAL HISTORY

This appeal arises out of the events surrounding plaintiff's birth on July 16, 1980. Plaintiff's mother,

¹ 249 Mich App 534; 643 NW2d 580 (2002).

Kimberly Craig, received prenatal care from defendant Associated Physicians, P.C. Associated Physicians employed four obstetricians, including defendants Dr. Elias Gennaoui and Dr. Ajit Kittur.² Ms. Craig met with each obstetrician at some point before plaintiff's birth, but was primarily attended to by Dr. Gennaoui during plaintiff's delivery.

Ms. Craig's amniotic and chorionic membranes ruptured at approximately 5:30 A.M. on July 16, 1980, and she was admitted to defendant Oakwood Hospital within a half hour. The resident doctor on call at the time noted that plaintiff's fetal heart tones were within a normal range. Dr. Kittur, who was the attending physician on staff when Ms. Craig was admitted, requested that Ms. Craig be given an intravenous (IV) "keep open" line to maintain hydration and to establish a channel for the intravenous administration of medication, should the need arise. Nurses applied an external fetal-uterine monitor to Ms. Craig at approximately 9:30 A.M., at which time she still had not experienced contractions. At 10:00, Ms. Craig began to receive 1000 cc of a 5% Ringer's lactate solution through the "keep open" IV line.

Dr. Gennaoui, who had taken over for Dr. Kittur

² Dr. Kittur is not a party to this appeal because the jury determined that he was not negligent.

sometime after Ms. Craig was admitted, met with Ms. Craig at approximately 11:00 A.M. He was concerned that Ms. Craig and her child had been exposed to infection since her membranes burst earlier that morning,³ and concluded that Ms. Craig should be given ten units of Pitocin⁴ in order to induce labor.⁵ From 11:30 A.M. to 6:00 P.M., Ms. Craig was given doses of Pitocin in increasing amounts.

One of the central issues at trial was the precise amount of Pitocin administered to Ms. Craig and whether, as plaintiff argued, she had mistakenly received a double dosage. Plaintiff's standard of care expert, Paul Gatewood, M.D., testified that Ms. Craig's medical records reveal that she was inadvertently given two doses of Pitocin. The first was administered shortly after 11:00 a.m. upon Dr. Gennaoui's order. Nurse Quinlan wrote a check on Dr. Gennaoui's order for Pitocin to indicate, according to Dr. Gatewood, that she had performed Dr. Gennaoui's request and had administered Pitocin through the

³ Dr. Gennaoui testified that amniotic fluid, which was discharged when plaintiff's amniotic and chorionic membranes burst, protected the fetus from infection.

⁴ "Pitocin" is a brand name for synthetic oxytocin.

⁵ Plaintiff contends that records from a fetal uterine monitor show that Ms. Craig was, in fact, experiencing contractions before Dr. Gennaoui's decision to administer Pitocin.

5% Ringer's lactate solution.

Dr. Gatewood noted, however, that another nurse, Tyra, had written in Ms. Craig's records that she had administered Pitocin through D5W,⁶ a solution other than the 5% Ringer's lactate Ms. Craig was already receiving intravenously. Thus, according to Dr. Gatewood's testimony, Dr. Gennaoui had given a single order for Pitocin that had been filled twice—once by Nurse Quinlan through the 5% Ringer's lactate solution, and once by Nurse Tyra through the D5W solution.

Also contested at trial was whether Ms. Craig's labor presented any complications. Medical records compiled after plaintiff's birth show that Ms. Craig began experiencing contractions of "moderate" strength after receiving Pitocin and that "moderate" contractions continued until plaintiff's delivery.

Plaintiff contends, however, that the records from a fetal uterine monitor tell a different story. These records, according to Dr. Gatewood, show that plaintiff experienced recurrent decelerations of his heart rate, or bradycardia, after Ms. Craig began to receive Pitocin. Dr. Gatewood explained at trial that the decelerations occurred

⁶ Dr. Gatewood described this solution as a mix of dextrose and water.

because the Pitocin administered to Ms. Craig caused contractions of excessive intensity and duration. Plaintiff's umbilical cord became compressed because of these contractions, thereby decreasing the amount of blood flowing to plaintiff. The result was the pattern of decelerations in heart rate shown by the fetal uterine monitor and a decrease in the amount of oxygen flowing to plaintiff's brain, or "hypoxia" in medical parlance.

Plaintiff was born shortly before 7:00 P.M. that day. His Apgar scores, 8 and 9 (on a one to ten scale), were well within the typical range,⁷ indicating that plaintiff appeared to be a normal, healthy baby. Plaintiff also contests this Apgar assessment, maintaining that a picture of plaintiff taken shortly after his birth depicts an infant who had recently suffered head trauma. Specifically, plaintiff points to a "large ridge" across his forehead as evidence of "facial or brow molding," and argues that the photograph clearly reveals bruising and

⁷ An Apgar score represents an evaluation of a newborn infant's physical condition immediately after birth. An infant is evaluated at one and five minutes after birth on five criteria: heart rate, respiratory effort, muscle tone, skin color, and response to stimuli. Each criterion is assigned a value between zero and two, with a score of ten indicating the best condition. Attorney's Dictionary of Medicine Illustrated, vol 1, p A-475.

edema,⁸ both sure signs of trauma. In addition, plaintiff contends that the postdelivery picture shows him "gazing" to the right while holding his left hand in a cortical position and that these "are indicative of acute brain injury."

Two days after his birth, plaintiff was examined by pediatrician Dr. Carolyn Johnson, who concluded that plaintiff seemed to be healthy and displayed normal cognitive functions. Plaintiff received a vastly different diagnosis approximately one year later. On June 6, 1981, Ms. Craig had plaintiff examined by Dr. Michael Nigro, a pediatric neurologist, after noticing that plaintiff began to seem developmentally slow after his third month. Dr. Nigro diagnosed plaintiff with nonprogressive encephalopathy⁹ with global developmental delay and mild spasticity. He concluded at the time and maintained throughout this trial that the etiology or cause of plaintiff's condition was unclear.¹⁰

⁸ An "edema" is an "effusion of serious fluid into the interstices of cells in tissue spaces or into body cavities." *Random House Webster's Unabridged Dictionary* (2d ed, 2001).

⁹ "Encephalopathy" is a general term for any disease of the brain. *Random House Webster's Unabridged Dictionary* (2d ed, 2001).

¹⁰ Dr. Nigro gave a slightly different diagnosis later,

Plaintiff initiated the present lawsuit in 1994 through his mother, Kimberly Craig, as next friend. He alleged that Drs. Gennaoui and Kittur committed medical malpractice in failing to monitor plaintiff's heartbeat with an internal uterine catheter until 2:30 P.M. on July 16, 1980. Further, he alleged that Dr. Gennaoui and his colleagues negligently administered Pitocin to Ms. Craig despite the fact that she presented physical symptoms indicating that Pitocin was unnecessary and potentially harmful. As a result, plaintiff alleged, plaintiff sustained brain damage either through hypoxia or through the pounding of plaintiff's head against his mother's "pelvic rim" before birth.

Plaintiff also named Associated Physicians, P.C., the employer of Drs. Kittur and Gennaoui, under a theory of vicarious liability. In addition, plaintiff named Oakwood Hospital, where plaintiff was delivered, and named Henry

on October 30, 1981, when he opined that plaintiff had chronic, nonspecific encephalopathy with retardation or psychomotor delay, cerebral palsy, and epilepsy. When plaintiff was in his early teens, Dr. Nigro diagnosed him with profound encephalopathy, spastic quadriplegia, mental retardation, and aphasia. "Aphasia" is "the loss of a previously held ability to speak or understand spoken or written language, due to injury of the brain." *Random House Webster's Unabridged Dictionary* (2d ed, 2001).

Ford Hospital under a successor liability theory.¹¹

On January 21, 1997, defendant asked the Court to exclude the testimony of Dr. Ronald Gabriel, plaintiff's proposed causation expert, or, in the alternative, to conduct a *Davis-Frye* hearing.¹² This motion was denied.

Henry Ford filed a successful motion to sever. However, the trial court found after conducting a bench trial that Henry Ford was liable to plaintiff as a successor to Associated Physicians, P.C.

After the jury found in plaintiff's favor, the court entered judgment of \$21 million, reflecting the present value of the \$36 million awarded by the jury. The trial court denied defendants' motion for judgment notwithstanding the verdict or a new trial.

On February 1, 2002, the Court of Appeals affirmed the jury verdict in plaintiff's favor, but ordered remittitur because of the jury's overestimation of plaintiff's lost

¹¹ Henry Ford had purchased the administrative portion of Associated Physicians Medical Center, Inc., a business corporation created from the professional corporation that had employed defendants Dr. Gennaoui and Dr. Kittur at the time of the alleged malpractice. The relationships between the corporate entities are discussed in greater detail below.

¹² See *People v Davis*, 343 Mich 348; 72 NW2d 269 (1955); *Frye v United States*, 54 App DC 46; 293 F 1013 (1923).

wage earning capacity.¹³ The panel also affirmed the trial court's conclusion that Henry Ford was liable to plaintiff as a successor corporation.

We granted defendants' applications for leave to appeal on September 12, 2003, limiting the parties to the following issues: "(1) Whether the witnesses' testimony was based on facts not in evidence and whether the trial court erred in permitting the testimony of plaintiff's expert witnesses; (2) Whether the trial court erred in finding defendant Henry Ford Hospital liable on a successor liability theory."¹⁴ We denied plaintiff's application for leave to appeal the decision of the Court of Appeals.

II. STANDARD OF REVIEW

We review a trial court's decision to admit or exclude evidence for an abuse of discretion.¹⁵ A court necessarily abuses its discretion when it "admits evidence that is inadmissible as a matter of law."¹⁶ However, any error in the admission or exclusion of evidence will not warrant appellate relief "unless refusal to take this action

¹³ 249 Mich App 534, 544.

¹⁴ 469 Mich 880 (2003) (citations omitted).

¹⁵ *People v Katt*, 468 Mich 272, 278; 662 NW2d 12 (2003).

¹⁶ *Id.*

appears . . . inconsistent with substantial justice,"¹⁷ or affects "a substantial right of the [opposing] party."¹⁸

We review de novo a trial court's decision to grant or deny a motion for judgment notwithstanding the verdict.¹⁹ In conducting this review de novo, we "'review the evidence and all legitimate inferences in the light most favorable to the nonmoving party.'"²⁰ Only when "the evidence viewed in this light fails to establish a claim as a matter of law" is the moving party entitled to judgment notwithstanding the verdict (JNOV).²¹

The doctrine of successor liability is "'derived from equitable principles.'"²² Its application is therefore subject to review de novo.²³

¹⁷ MCR 2.613(A).

¹⁸ MRE 103(a).

¹⁹ *Sniecinski v Blue Cross & Blue Shield*, 469 Mich 124, 131; 666 NW2d 186 (2003).

²⁰ *Id.*, quoting *Wilkinson v Lee*, 463 Mich 388, 391; 617 NW2d 305 (2000).

²¹ *Id.*

²² *Stevens v McLouth Steel Products Corp*, 433 Mich 365, 376; 446 NW2d 95 (1989), quoting *Musikiwamba v ESSI, Inc*, 760 F2d 740, 750 (CA 7, 1985).

²³ *Stachnik v Winkel*, 394 Mich 375, 383; 230 NW2d 529 (1975).

III. IMPROPER ADMISSION OF EXPERT TESTIMONY

We turn, first, to the trial court's erroneous conclusion that defendant Oakwood Hospital was not entitled to a *Davis-Frye* hearing before the admission of Dr. Ronald Gabriel's expert testimony. Defendant contends that the trial court erred when it denied its motion to exclude the expert opinion testimony of Dr. Gabriel or, in the alternative, to hold a *Davis-Frye* hearing. We agree.

A. MRE 702 AND *DAVIS-FRYE* ANALYSIS

Expert testimony is admitted pursuant to MRE 702, which provided, at the pertinent times:

If the court determines that recognized scientific, technical, or other specialized knowledge will assist the trier of fact to understand the evidence or to determine a fact in issue, a witness qualified as an expert by knowledge, skill, experience, training, or education, may testify thereto in the form of an opinion or otherwise

In construing this rule of evidence, we must apply "the legal principles that govern the construction and application of statutes."²⁴ When the language of an evidentiary rule is unambiguous, we apply the plain meaning of the text "without further judicial construction or

²⁴ *CAM Constr v Lake Edgewood Condo Ass'n*, 465 Mich 549, 554; 640 NW2d 256 (2002), quoting *Grievance Administrator v Underwood*, 462 Mich 188, 193; 612 NW2d 116 (2000).

interpretation.'"²⁵

The plain language of MRE 702 establishes three broad preconditions to the admission of expert testimony.²⁶ First, the proposed expert witness must be "qualified" to render the proposed testimony.²⁷ Generally, the expert may be qualified by virtue of "knowledge, skill, experience, training, or education."²⁸ In a medical malpractice action such as this one, the court's assessment of an expert's "qualifications" are now guided by MCL 600.2169(2):

In determining the qualifications of an expert witness in an action alleging medical malpractice, the court shall, at a minimum, evaluate all of the following:

(a) The educational and professional training of the expert witness.

(b) The area of specialization of the expert witness.

(c) The length of time the expert witness has been engaged in the active clinical practice or instruction of the health profession or the specialty.

(d) The relevancy of the expert witness's testimony.

Second, the proposed testimony must "assist the trier

²⁵ *Id.*

²⁶ *People v Beckley*, 434 Mich 691, 710-711; 456 NW2d 391 (1990) (opinion of BRICKLEY, J.).

²⁷ MRE 702.

²⁸ *Id.*

of fact to understand the evidence or to determine a fact in issue"²⁹ In other words, the expert opinion testimony "must serve to give the trier of fact a better understanding of the evidence or assist in determining a fact in issue."³⁰

Finally, under MRE 702 as it read when this matter was tried, expert testimony must have been based on a "recognized" form of "scientific, technical, or other specialized knowledge."³¹ The Court of Appeals properly construed this language in *Nelson v American Sterilizer Co (On Remand)*:

The word "recognized" connotes a general acknowledgement of the existence, validity, authority, or genuineness of a fact, claim or concept. The adjective "scientific" connotes a grounding in the principles, procedures, and

²⁹ MRE 702.

³⁰ *Beckley*, supra at 711 (opinion of BRICKLEY, J.).

³¹ MRE 702. This rule was amended effective January 1, 2004, and now provides:

If the court determines that scientific, technical, or other specialized knowledge will assist the trier of fact to understand the evidence or to determine a fact in issue, a witness qualified as an expert by knowledge, skill, experience, training, or education may testify thereto in the form of an opinion or otherwise if (1) the testimony is based on sufficient facts or data, (2) the testimony is the product of reliable principles and methods, and (3) the witness has applied the principles and methods reliably to the facts of the case.

methods of science. Finally, the word "knowledge" connotes more than subjective belief or unsupported speculation. The word applies to any body of known facts or to any body of ideas inferred from such facts or accepted as truths on good grounds.^[32]

Continuing along these lines, the word "technical" signifies grounding in a specialized field of knowledge, or a particular "art, science, or the like."³³ Similarly, "specialized" suggests a foundation in a specific field of study or expertise.³⁴

When this case was tried, the admission of expert testimony was subject not only to the threshold requirements of MRE 702, but also to the standard articulated in *People v Davis*,³⁵ now generally known in Michigan as the *Davis-Frye* test.³⁶ In *Davis*, we held that expert opinion based on novel scientific techniques is admissible only if the underlying methodology is generally

³² 223 Mich App 485, 491; 566 NW2d 671 (1997) (citations and quotation marks omitted).

³³ *Random House Webster's Unabridged Dictionary* (2d ed, 2001).

³⁴ *Id.*

³⁵ 343 Mich 348; 72 NW2d 269 (1955).

³⁶ See *Frye v United States*, 54 App DC 46; 293 F 1013 (1923).

accepted within the scientific community.³⁷ Thus, in determining whether the proposed expert opinion was grounded in a "recognized" field of scientific, technical, or other specialized knowledge as was required by MRE 702, a trial court was obligated to ensure that the expert opinion was based on accurate and generally accepted methodologies.³⁸ The proponent of expert testimony bears the burden of proving general acceptance under this standard.³⁹

B. THE TRIAL COURT'S FAILURE TO PERFORM ITS
GATEKEEPING ROLE UNDER MRE 702

In this case, defendant Oakwood Hospital moved in limine to exclude the testimony of Dr. Ronald Gabriel on the basis that Dr. Gabriel's theory of how plaintiff sustained brain damage was not generally accepted within the medical community, as required by *Davis-Frye*. Dr. Gabriel's etiological theory, as summarized by defendant in arguing its motion, was that "hyperstimulat[ion]" of the uterus caused the head of the fetus (plaintiff) to pound

³⁷ *Davis, supra* at 370.

³⁸ *Id.* at 372. See also *People v Young*, 418 Mich 1, 24; 340 NW2d 805 (1983) ("The *Davis-Frye* standard is the means by which the court can determine that the novel evidence offered for admission here enjoys such recognition.").

³⁹ *People v Young (After Remand)*, 425 Mich 470, 475; 391 NW2d 270 (1986).

against his mother's pelvic anatomy, thereby producing permanent brain damage. This theory, according to defendant, was novel enough to be excluded and, at best, was admissible only once it passed through the crucible of *Davis-Frye* analysis.

In response to this motion, plaintiff's attorney produced several articles and authorities that were meant to demonstrate a link between the use of Pitocin and the type of injury sustained by plaintiff. But while some of these articles described a correlation between the use of Pitocin and generalized brain injury, none of these authorities supported the theory of causation actually put forth by Dr. Gabriel. That is, none supported a causal connection between Pitocin and brain injury incurred through repeated pounding of the fetal head against maternal anatomy.

However, the court did not rely on authorities proffered by plaintiff in denying defendant's motion for a *Davis-Frye* hearing. Instead of consulting plaintiff's proffered scientific and medical literature, the court erroneously assigned the burden of proof under *Davis-Frye* to defendant—the party *opposing* the admission of Dr. Gabriel's testimony—and held that defendant was not entitled to a hearing because it failed to prove that Dr.

Gabriel's theory lacked "general acceptance."⁴⁰

When the MRE 702 principles described above are properly applied, it is evident that the trial court abused its discretion in denying defendant's motion for a *Davis-Frye* hearing. This abuse of discretion was predicated on two fundamental legal errors.

First, the trial court erred in concluding that it had no obligation to review plaintiff's proposed expert testimony unless defendant introduced evidence that the expert testimony was "novel." Under MRE 702, the trial court had an independent obligation to review *all* expert

⁴⁰ Indeed, the trial court was explicit in this regard:

[Allocating the burden of proof to the proponent of novel scientific testimony] would mean that everybody can come in here and allege that whatever everybody's expert is saying is not supported by scientific data, and I would have to hold a *Davis-Frye* hearing in every single case where any expert had to testify. And that's not the standard. You have to submit some evidence to me that I need a *Davis-Frye* hearing, other than you just saying it.

The dissent makes the same error. See *post* at 2-4. But compare *Young (After Remand)*, *supra* at 475 (allocating the burden of proof under *Davis-Frye* to the proponent of novel scientific evidence).

The position advocated by the trial court and the dissent is not only at odds with our *Davis-Frye* jurisprudence, but it also defies logic. The trial court's rule would require the party opposing expert testimony to prove a negative—that the expert's opinion is not generally accepted. This is an unreasonable and thoroughly impractical allocation of the burden of proof.

opinion testimony in order to ensure that the opinion testimony satisfied the three *Beckley* preconditions noted above—that it was rendered by a “qualified expert,” that the testimony would “assist the trier of fact,” and, under the rules of evidence in effect during this trial, that the opinion testimony was rooted in “recognized” scientific or technical principles. These obligations applied irrespective of the type of expert opinion testimony offered by the parties.⁴¹ While a party may waive any claim of error by failing to call this gatekeeping obligation to the court’s attention, the court *must* evaluate expert testimony under MRE 702 once that issue is raised.

Second, the trial court erred in concluding that there was no justification for a *Davis-Frye* hearing. At issue was Dr. Gabriel’s opinion that Pitocin administered to Ms. Craig produced contractions of excessive duration and force, that these contractions caused plaintiff’s head to be repeatedly ground against Ms. Craig’s pelvic anatomy, and that the resulting head trauma caused plaintiff’s cerebral palsy. This causal sequence, defendant argued, has “never been described in medical literature” and was at odds with the testimony of plaintiff’s other expert

⁴¹ See MRE 702.

witnesses.

Plaintiff failed to introduce a single authority that truly supported Dr. Gabriel's theory in response to defendant's motion. Instead, plaintiff repeatedly stressed that medical literature amply supported the proposition that Pitocin could cause brain damage—a proposition defendant did not contest—and supplied the court with literature to that effect. But this literature had little to do with Dr. Gabriel's causal theory and therefore did not counter the proposition that his expert opinion was based on novel science.

Therefore, a *Davis-Frye* hearing was more than justified in light of the information before the trial court when it ruled on defendant's motion in limine. The proponent of expert opinion testimony bears the burden of proving that the contested opinion is based on generally accepted methodology.⁴² Because there was no evidence to indicate that Dr. Gabriel's theory was anything *but* novel, the trial court was required to conduct the *Davis-Frye* inquiry requested by defendant.

Had the trial court conducted the assessment requirement by MRE 702, it might well have determined that

⁴² *Young (After Remand)*, *supra* at 475.

Dr. Gabriel's theory was not "recognized" as required by our rules of evidence. Indeed, the evidence plaintiff offered in support of Dr. Gabriel should have provided sufficient notice to the trial court that his theory lacked general acceptance in the medical community. For one thing, Dr. Gabriel was unable to cite a single study supporting his traumatic injury theory during a voir dire conducted at trial. The only authorities he offered for the proposition that excessive amounts of Pitocin may cause cerebral palsy through the traumatic mechanism he described at trial were studies he cited in which Pitocin caused cerebral palsy in animals when given in excessive amounts. These studies did not involve the "bumping and grinding" mechanism on which Dr. Gabriel's expert testimony relied. In fact, Dr. Gabriel expressly distinguished the mechanism to which he attributed plaintiff's injuries from those at work in the animal studies. It would appear, then, that there was little evidence that Dr. Gabriel's theory was "recognized," much less generally accepted, within pediatric neurology.

Second, had the court conducted the MRE 702 inquiry requested by defendant, it might have discovered that Dr. Gabriel's theory lacked evidentiary support. Dr. Gabriel was unable to identify the specific part of Ms. Craig's

anatomy with which, according to his theory, plaintiff's head repeatedly collided during labor. Indeed, Dr. Gabriel pointedly refused to identify this anatomical structure on a chart, contending that such testimony was beyond his expertise. This failure to root his causal theory in anything but his own hypothetical depiction of female anatomy indicates that Dr. Gabriel's testimony may have been too speculative under MRE 702 to assist the trier of fact.

Finally, a *Davis-Frye*/MRE 702 hearing should have alerted the court to the error described in part IV. At no point did Dr. Gabriel opine that the traumatic and vascular mechanisms he described could cause cerebral palsy, or that those mechanisms might produce the asymmetrical development shown in plaintiff's MRI. Thus, Dr. Gabriel's testimony supported plaintiff's medical malpractice claim only if the jury was permitted to assume, without supporting evidence, that a causal connection existed between these elements. As shown in part IV, this is not a permissible inference. Consequently, the court again had reason to conclude that Dr. Gabriel's testimony could not have "assist[ed] the trier of fact" given the yawning gap between Dr. Gabriel's testimony and the conclusions plaintiff hoped the jury would draw from it.

Although the trial court clearly erred in declining to review Dr. Gabriel's testimony before its admission, we need not determine whether reversal on this basis alone is warranted under the "substantial justice" standard of our court rules.⁴³ For the reasons stated below, remand for a *Davis-Frye* hearing is unnecessary given plaintiff's failure to establish the causation element of his medical malpractice claim.

IV. JUDGMENT NOTWITHSTANDING THE VERDICT

Even if plaintiff were able to show upon remand that Dr. Gabriel's testimony was properly admitted, defendants would nevertheless be entitled to JNOV. The record reveals that the proofs submitted by plaintiff do not support the verdict rendered by the jury because of plaintiff's failure to establish that defendants' breach of the applicable standard of care proximately caused his cerebral palsy. We therefore reverse and remand for entry of judgment notwithstanding the verdict.

A. STATUTORY AND COMMON LAW BACKGROUND

In order to establish a cause of action for medical malpractice, a plaintiff must establish four elements: (1) the appropriate standard of care governing the defendant's

⁴³ MCR 2.613(A).

conduct at the time of the purported negligence, (2) that the defendant breached that standard of care, (3) that the plaintiff was injured, and (4) that the plaintiff's injuries were the proximate result of the defendant's breach of the applicable standard of care.⁴⁴ These common-law elements have been codified in MCL 600.2912a, which requires a plaintiff alleging medical malpractice to show that

[t]he defendant, if a specialist, failed to provide the recognized standard of practice or care within that specialty as reasonably applied in light of the facilities available in the community or other facilities reasonably available under the circumstances, and as a proximate result of defendant failing to provide that standard, the plaintiff suffered an injury.

Furthermore, the plaintiff in a medical malpractice case must establish the proximate causation prong of his prima facie case by a preponderance of the evidence.⁴⁵

"Proximate cause" is a legal term of art that incorporates both cause in fact and legal (or "proximate") cause.⁴⁶ We defined these elements in *Skinner v Square D*

⁴⁴ *Weymers v Khera*, 454 Mich 639, 655; 563 NW2d 647 (1997).

⁴⁵ See MCL 600.2912a(2) (stating that "the plaintiff has the burden of proving that he or she suffered an injury that more probably than not was proximately caused by the negligence of the defendant or defendants").

⁴⁶ *Skinner v Square D Co*, 445 Mich 153, 162-163; 516

Co:

The cause in fact element generally requires showing that "but for" the defendant's actions, the plaintiff's injury would not have occurred. On the other hand, legal cause or "proximate cause" normally involves examining the foreseeability of consequences, and whether a defendant should be held legally responsible for such consequences.^[47]

As a matter of logic, a court must find that the defendant's negligence was a cause in fact of the plaintiff's injuries before it can hold that the defendant's negligence was the proximate or legal cause of those injuries.⁴⁸

Generally, an act or omission is a cause in fact of an injury only if the injury could not have occurred without (or "but for") that act or omission.⁴⁹ While a plaintiff need not prove that an act or omission was the sole catalyst for his injuries, he must introduce evidence permitting the jury to conclude that the act or omission was a cause.⁵⁰

It is important to bear in mind that a plaintiff

NW2d 475 (1994).

⁴⁷ *Id.* at 163 (citations omitted).

⁴⁸ *Id.*

⁴⁹ *Id.* See also Prosser, *Torts* (4th ed, 1971), p 239.

⁵⁰ *Jordan v Whiting Corp*, 396 Mich 145, 151; 240 NW2d 468 (1976).

cannot satisfy this burden by showing only that the defendant may have caused his injuries. Our case law requires more than a mere possibility or a plausible explanation.⁵¹ Rather, a plaintiff establishes that the defendant's conduct was a cause in fact of his injuries only if he "set[s] forth specific facts that would support a reasonable inference of a logical sequence of cause and effect."⁵² A valid theory of causation, therefore, must be based on facts in evidence.⁵³ And while "[t]he evidence need not negate all other possible causes," this Court has consistently required that the evidence "exclude other reasonable hypotheses with a fair amount of certainty."⁵⁴

In *Skinner*, for example, we held that the plaintiff failed to show that the defendant's negligence caused the decedent's electrocution. *Skinner* was a product liability action in which the plaintiff claimed that the decedent was killed because an electrical switch manufactured by the defendant had malfunctioned.⁵⁵ The plaintiff's decedent had

⁵¹ *Skinner, supra* at 172-173.

⁵² *Id.* at 174.

⁵³ *Id.* at 166.

⁵⁴ *Id.* at 166, quoting with approval 57A Am Jur 2d, Negligence, § 461, p 422.

⁵⁵ *Skinner, supra* at 157.

built a tumbling machine that was used to wash metal parts, and had used the defendant's switch to turn the machine on and off.⁵⁶ Wires from the defendant's switch were attached to the tumbling machine with alligator clips.⁵⁷ Immediately before his death, the plaintiff's decedent was found with both alligator clips in his hands while electricity coursed through his body.⁵⁸

In order to find that a flaw in the defendant's product was a cause in fact of that electrocution, the jury would have had to conclude, in effect, that the decedent had disconnected the alligator clips and that the machine had somehow been activated again, despite being disconnected from its power source.⁵⁹ Not only was this scenario implausible, but there was no evidence to rule out the possibility that the decedent had been electrocuted because he had mistakenly touched wires he knew to be live. There was no evidence to support the plaintiff's theory of causation.⁶⁰ Consequently, we concluded that the trial court had properly granted summary disposition to the

⁵⁶ *Id.*

⁵⁷ *Id.*

⁵⁸ *Id.*

⁵⁹ *Id.*

⁶⁰ *Id.*

defendant.

Mulholland v DEC Int'l,⁶¹ provides a useful factual counterpoint to *Skinner*. In *Mulholland*, the plaintiffs' herd of milking cows contracted mastitis, a bacterial infection of the udder, after the plaintiffs began to use a milking system built by the defendants.⁶² Key expert testimony was provided by Sidney Beale, an expert in agriculture and dairy science. Mr. Beale had observed a milking at the plaintiffs' farm and deduced that the mastitis was related to the improper configuration of the milking system.⁶³ He suggested that the plaintiffs implement certain changes, and, indeed, once these were put into practice, the plaintiffs noticed "a decrease in mastitis and an increase in milk production in the herd."⁶⁴

We held, on the basis of this expert testimony, that the trial court improperly granted a directed verdict to the defendant.⁶⁵ Because Mr. Beale's testimony was based on his direct observation of the milking machinery, its use on the plaintiffs' herd, and teat inflammation in the

⁶¹ 432 Mich 395; 443 NW2d 340 (1989).

⁶² *Id.* at 399.

⁶³ *Id.* at 400.

⁶⁴ *Id.*

⁶⁵ *Id.* at 398.

plaintiff's herd following milking, a jury could have reasonably concluded, on the basis of this testimony, that the milking machinery caused mastitis.⁶⁶ While Mr. Beale's testimony did not rule out every other potential cause of mastitis, this fact merely related to the credibility of his testimony; his opinion was nevertheless admissible and sufficient to support a finding of causation.⁶⁷

B. PLAINTIFF'S FAILURE TO ESTABLISH CAUSATION

The statutory and common-law background provided above makes it clear that a plaintiff's prima facie case of medical malpractice must draw a causal connection between the defendant's breach of the applicable standard of care and the plaintiff's injuries. In this case, the evidence adduced at trial cannot support the jury's verdict because plaintiff has failed to make the necessary causal links. Even if plaintiff had shown that defendants breached the standard of care, the jury had no basis in the record to connect this breach to the cerebral palsy, mental retardation, and other injuries now presented by plaintiff.

At trial, plaintiff attempted to connect defendants' purported violations of the applicable standard of care to

⁶⁶ *Id.* at 413.

⁶⁷ *Id.*

plaintiff's injuries through the expert testimony of Drs. Paul Gatewood and Ronald Gabriel. Dr. Gatewood testified principally as a standard of care witness, interpreting the medical records of plaintiff and Ms. Craig, and opining that defendants breached the applicable standard of care by administering excessive amounts of Pitocin and by failing to use an internal uterine pressure catheter. Dr. Gatewood also testified that records from fetal and uterine monitors indicated that Ms. Craig experienced excessive and severe contractions, and that these reduced the flow of oxygenated blood to plaintiff both by compressing the umbilical cord and by reducing the periods of oxygenation between contractions. Dr. Gatewood testified that, as a result, plaintiff suffered from hypoxia and correlated decelerations in his heart rate.

While Dr. Gatewood's testimony connected defendants' alleged breach of the standard of care to physiological symptoms displayed by plaintiff before his birth, he specifically declined to connect these prebirth conditions to the particular injuries for which plaintiff sought compensation. Indeed, Dr. Gatewood denied he had the requisite expertise to make the causal linkage and expressly refused to testify to a causal relationship between plaintiff's neurological diseases and his prenatal

care. He insisted instead that "what happened to the baby's brain" was "[within] the purview of a neurologist."⁶⁸

Plaintiff contended that the link between defendants' negligence and plaintiff's injuries was to be supplied instead by the expert testimony of Dr. Ronald Gabriel. Dr. Gabriel opined that plaintiff's injuries were attributable to two mechanisms that affected plaintiff's brain before delivery; he referred to these mechanisms as "traumatic" and "vascular." According to Dr. Gabriel's testimony, plaintiff sustained "traumatic" injuries when excessive uterine contractions induced by Pitocin caused plaintiff's head to be "pounded or grinded [sic] into [his mother's] pelvic rim" during her labor. Because of this pounding,

⁶⁸ This is a critical fact; the dissent's analysis suffers for paying insufficient heed to Dr. Gatewood's disclaimer of expertise regarding the etiology of cerebral palsy. See *post* at 11-12.

Indeed, the dissent seems to conflate the testimony of plaintiff's two principal experts by concluding that Dr. Gabriel's "bumping and grinding" theory of causation was somehow supported by Dr. Gatewood's testimony about the dangers of excessive doses of Pitocin. In reality, there was a fundamental gap between the theories proffered by these experts. Dr. Gabriel testified that excessive doses of Pitocin caused plaintiff's head to be ground against his mother's pelvic anatomy and that this grinding, in turn, led to hypoxia. Dr. Gabriel did not testify that an excessive dosage of Pitocin *alone*—that is, without head compression injuries sustained from repeated contact with maternal anatomy—could have caused plaintiff's cerebral palsy.

plaintiff's brain sustained compression injuries, which resulted in elevated venous "pressures" and impeded "arter[ial] blood flow." Dr. Gabriel analogized this "venous component" to the distribution of water through a lawn sprinkler system, explaining that increased pressure in certain areas of the brain reduced the flow of oxygenated blood to outlying, "watershed" regions of the brain just as "the last sprinkler who [sic] gets the pressure is the least able to provide water for that area of the lawn." The crux of Dr. Gabriel's theory, then, was that plaintiff suffered traumatic head injury during labor and was detrimentally affected by that trauma and the accompanying vascular effects.

Even if we accept Dr. Gabriel's testimony in full, a fatal flaw remains in plaintiff's prima facie case: Dr. Gabriel never testified that the injuries stemming from this pounding and its accompanying vascular effects could cause cerebral palsy, mental retardation, or any of the other conditions now presented by plaintiff.

Dr. Gabriel began his testimony by explaining that an MRI image showed that plaintiff's brain tissue had developed asymmetrically. He failed, however, to trace this asymmetric development either back to the traumatic and vascular mechanisms he described or forward to the specific

neurological conditions presently displayed by plaintiff. Thus, how exactly the mechanisms he described led to cerebral palsy (as opposed to any other neurological impairment) and how they were connected to the asymmetric brain development depicted in plaintiff's MRI was never explained.⁶⁹

It is axiomatic in logic and in science that correlation is not causation.⁷⁰ This adage counsels that it is error to infer that A causes B from the mere fact that A and B occur together. Given the absence of testimony on causation supplied by Dr. Gabriel, the jury could have found for plaintiff only if it indulged in this logical error—concluding, in effect, that evidence that plaintiff may have sustained a head injury, combined with evidence that plaintiff now has cerebral palsy, leads to the conclusion that the conduct that caused plaintiff's head

⁶⁹ Compare *1st of America Bank, Mid-Michigan v United States*, 752 F Supp 764, 765 (ED Mich, 1990) (finding that the negligence of Air Force physicians proximately caused a child's cerebral palsy where the plaintiff and the defendant presented extensive testimony on the etiology of cerebral palsy); *Bradford v McGee*, 534 So 2d 1076 (Ala, 1988) (holding that the plaintiffs presented evidence sufficient for the jury to determine that the defendant's negligence proximately caused their son's cerebral palsy); *Dick v Lewis*, 506 F Supp 799 (D ND, 1980).

⁷⁰ *United States v O'Hagan*, 521 US 642, 691 n 7; 117 S Ct 2199; 138 L Ed 2d 724 (1997) (Thomas, J., concurring in part and dissenting in part).

injury also caused his cerebral palsy.

Such indulgence is prohibited by our jurisprudence on causation. We have long required the plaintiff to show "that 'but for' the defendant's actions, the plaintiff's injury would not have occurred."⁷¹ Where the connection between the defendant's negligent conduct and the plaintiff's injuries is entirely speculative, the plaintiff cannot establish a prima facie case of negligence.⁷²

Here, any causal connection between plaintiff's cerebral palsy and the events described by Dr. Gabriel had to be supplied *ex nihilo* by the jury. Therefore, the trial court erred as a matter of law in denying defendants' motion for JNOV. We reverse the judgment of the Court of Appeals and remand for proceedings consistent with this opinion.

V. SUCCESSOR LIABILITY

Although we have established that plaintiff has failed to state a valid claim of medical malpractice, we must also correct an erroneous legal conclusion in the published opinion of the Court of Appeals.

The panel held that Henry Ford Health Care Corporation

⁷¹ *Skinner, supra* at 163 (emphasis added).

⁷² See *id.* at 174.

(Henry Ford)⁷³ was liable as a corporate successor to Associated Physicians, P.C. To the contrary, we conclude that the trial court erroneously imposed successor liability on Henry Ford.

At the time of the alleged malpractice in 1980, defendant Drs. Kittur and Gennaoui were employees of Associated Physicians, P.C., which was a medical professional corporation organized under the Professional Service Corporation Act.⁷⁴

Six years after plaintiff's birth, Associated Physicians, P.C., began to consider the possibility that Henry Ford might take over its administrative and bookkeeping services. While Henry Ford was interested in pursuing this arrangement with Associated Physicians, the latter's corporate form posed an obstacle. As a professional corporation, Associated Physicians, P.C., could neither legally merge with nor sell its shares to Henry Ford, given that Henry Ford's shareholders were not physicians.⁷⁵

⁷³ Henry Ford Health Care Corporation became Henry Ford Health System in 1989. For the sake of clarity, we refer to both as "Henry Ford."

⁷⁴ MCL 450.221 et seq.

⁷⁵ See generally Professional Services Corporation Act, MCL 450.221 et seq. The shares of a professional

Consequently, Associated Physicians, P.C., split into two entities. Its administrative portion was incorporated Associated Physicians Medical Center, Inc., a business corporation in which nonphysicians could legally share ownership and control. Its medical practice, however, became APMC, P.C., a new professional corporation.

Henry Ford purchased all the shares of Associated Physicians Medical Center, Inc., in accordance with the Business Corporation Act.⁷⁶ Henry Ford thereby became the parent corporation of Associated Physicians Medical Center, Inc. As the parties intended before the sale, APMC, P.C., entered into an agreement with Associated Physicians Medical Center, Inc., in which the latter controlled

corporation may not be

sold or transferred except to an individual who is eligible to be a shareholder of the corporation or to the personal representative or estate of a deceased or legally incompetent shareholder or to a trust or split interest trust, in which the trustee and the current income beneficiary are both licensed persons in a professional corporation. [MCL 450.230.]

An individual may not become a shareholder in a professional services corporation unless he or she is a "licensed person." MCL 450.224. A "licensed person" is "an individual who is duly licensed or otherwise legally authorized to practice a professional service by a court, department, board, commission, an agency of this state or another jurisdiction, or any corporation all of whose shareholders are licensed persons." MCL 450.222(a).

⁷⁶ MCL 450.1101 et seq.

billing, record keeping, and other administrative aspects of the medical practice. This arrangement ended in 1993, when APMC, P.C., dissolved before the initiation of the present lawsuit.

Henry Ford argued that, because it assumed the ownership of only the administrative portion of Associated Physicians, P.C. (which was vicariously liable to plaintiff), the equitable concerns that justify the imposition of successor liability are not present in this case. The trial court severed the issue of Henry Ford's successor liability. After a one-hour bench trial, the trial court held that Henry Ford was liable as a successor corporation to Associated Physicians, Inc. The Court of Appeals agreed. Both courts relied in part on the factors listed in *Turner v Bituminous Cas Co*⁷⁷ as supporting the imposition of successor liability.⁷⁸

⁷⁷ 397 Mich 406, 430; 244 NW2d 873 (1976).

⁷⁸ See *Turner*, 397 Mich 430:

(1) There was basic continuity of the enterprise of the seller corporation, including, apparently, a retention of key personnel, assets, general business operations, and even the [corporate] name.

(2) The seller corporation ceased ordinary business operations, liquidated, and dissolved soon after distribution of consideration received from the buying corporation.

We recently described the scope of successor liability in *Foster v Cone-Blanchard Machine Co.*⁷⁹ There, we observed the "traditional rule" that successor liability requires an examination of "the nature of the transaction between predecessor and successor corporations."⁸⁰ In a merger in which stock is exchanged as consideration, the successor corporation "generally assumes all its predecessor's liabilities."⁸¹ When the successor purchases assets for cash, however, the successor corporation assumes its predecessor's liabilities only

(1) where there is an express or implied assumption of liability; (2) where the transaction amounts to a consolidation or merger;^[82] (3) where the transaction was fraudulent; (4) where some of the elements of a purchase in good faith were lacking, or where the transfer was without consideration and the

(3) The purchasing corporation assumed those liabilities and obligations of the seller ordinarily necessary for the continuation of the normal business operations of the seller corporation.

(4) The purchasing corporation held itself out to the world as the effective continuation of the seller corporation.

⁷⁹ 460 Mich 696; 597 NW2d 506 (1999).

⁸⁰ *Id.* at 702.

⁸¹ *Id.*

⁸² See *Turner, supra* at 419-420 ("It is the law in Michigan that if two corporations merge, the obligations of each become the obligations of the resulting corporation.").

creditors of the transferor were not provided for; or (5) where the transferee corporation was a mere continuation or reincarnation of the old corporation.^[83]

Plaintiff has not alleged that the sale of Associated Physicians Medical Center, Inc., was fraudulent, in bad faith, or lacking in consideration. Likewise, plaintiff has adduced no evidence that Henry Ford expressly or impliedly assumed the liabilities of Associated Physicians Medical Center, Inc. Our inquiry therefore must focus on whether (1) the transaction was a consolidation or merger (either de jure or de facto), and (2) whether Henry Ford is a "mere continuation"⁸⁴ of Associated Physicians.

Plaintiff's claim fails on both accounts. First, plaintiff does not allege that a de jure merger took place, and he has not demonstrated that a de facto merger occurred. A de facto merger exists when each of the following requirements is met:

(1) There is a continuation of the enterprise of the seller corporation, so that there is a continuity of management, personnel, physical location, assets, and general business operations.

(2) There is a continuity of shareholders which results from the purchasing corporation paying for the acquired assets with shares of its own stock, this stock ultimately coming to be

⁸³ *Id.* at 702 (citations omitted).

⁸⁴ *Id.*

held by the shareholders of the seller corporation so that they become a constituent part of the purchasing corporation.

(3) The seller corporation ceases its ordinary business operations, liquidates, and dissolves as soon as legally and practically possible.

(4) The purchasing corporation assumes those liabilities and obligations of the seller ordinarily necessary for the uninterrupted continuation of normal business operations of the seller corporation. ^[85]

This transaction is not a de facto merger simply because Henry Ford, the purchasing corporation, paid in cash rather than stock. Thus, there is no "continuity of shareholders which results from the purchasing corporation paying for the acquired assets with shares of its own stock. . . ." ⁸⁶

We also conclude that Henry Ford is not a "mere continuation" of Associated Physicians Medical Center, Inc. As the history recited above shows, Associated Physicians split into two entities immediately before Henry Ford's purchase of Associated Physicians Medical Center, Inc. The professional corporation—Associated Physicians' medical practice—became APMC, Inc. Henry Ford was therefore able to purchase only the administrative aspects of the former

⁸⁵ *Turner, supra* at 420 (citations, quotation marks, and emphasis deleted), quoting *Shannon v Samuel Langston Co*, 379 F Supp 797, 801 (WD Mich, 1974).

⁸⁶ *Id.*

professional corporation. The core functions of the entity that originally became vicariously liable to plaintiff were carried on exclusively by APMC, Inc., a professional corporation, rather than the business corporation purchased by Henry Ford. Having analyzed the "nature of the transaction,"⁸⁷ we can only conclude that the only company even arguably liable as a successor to Associated Physicians, P.C., is that which continued its medical practice—namely, APMC, Inc.

Moreover, we have never applied successor liability in the medical malpractice context. Plaintiff has adduced no reason why we should do so in this case. Not only are the *Turner/Foster* requirements not met here but, more important, the policies that justify the imposition of successor liability are noticeably inapplicable here. We stated in *Foster* that

[t]he thrust of the decision in *Turner* was to provide a remedy to an injured plaintiff in those cases in which the first corporation "legally and/or practically becomes defunct." . . . The underlying rationale for the *Turner* Court's decision to disregard traditional corporate law principles was to provide a source of recovery for injured plaintiffs.^[88]

⁸⁷ *Foster, supra* at 702.

⁸⁸ *Foster, supra* at 705-706.

Here, plaintiff has already sought and obtained a judgment from Drs. Gennaoui and Kittur, from Associated Physicians, P.C., and from Oakwood Hospital. Because plaintiff obtained a judgment against other sources, there was no need to impose successor liability on Henry Ford, even if the *Turner/Foster* factors had justified such liability. The trial court erred in imposing successor liability on Henry Ford and the Court of Appeals erroneously affirmed this ruling.

V. CONCLUSION

We conclude that the trial court erred when it refused to grant defendants' motion for judgment notwithstanding the verdict. Plaintiff failed to present any evidence from which the fact-finder could reasonably conclude that any breach of the applicable standard of care by defendants proximately caused his cerebral palsy, mental retardation, and other neurological conditions. In addition, the trial court improperly denied defendant Oakwood Hospital's motion to compel an evidentiary hearing regarding the qualifications and theories propounded by one of the plaintiff's expert witnesses. Finally, the trial court erred in concluding that Henry Ford Health Care Corporation was a corporate successor to the professional medical

corporation that employed Dr. Gennaoui. For those reasons,
we reverse the judgment of the Court of Appeals and remand
the matter for entry of judgment in defendants' favor.

Robert P. Young, Jr.
Maura D. Corrigan
Elizabeth A. Weaver
Clifford W. Taylor
Stephen J. Markman

S T A T E O F M I C H I G A N

SUPREME COURT

ANTONIO CRAIG, by his next
friend, KIMBERLY CRAIG,

Plaintiff-Appellee,

v

Nos. 121405
121407-121409
121419

OAKWOOD HOSPITAL, HENRY FORD
HOSPITAL, doing business as
HENRY FORD HEALTH SYSTEM,
ASSOCIATED PHYSICIANS, P.C.,
and ELIAS G. GENNAOUI, M.D.,

Defendants-Appellants,

and

AJIT KITTUR, M.D.,

Defendant.

CAVANAGH, J. (*concurring*).

I concur with the majority in this case. I write separately, however, because I do not agree with some of the rationale regarding successor liability articulated by the majority in part V. Therefore, as it pertains to successor liability, I concur in the result only.

Michael F. Cavanagh

S T A T E O F M I C H I G A N

SUPREME COURT

ANTONIO CRAIG by his next
friend, Kimberly Craig,

Plaintiff-Appellee,

v

Nos. 121405
121407-121409
121419

OAKWOOD HOSPITAL, HENRY FORD
HOSPITAL, doing business as
HENRY FORD HEALTH SYSTEM,
ASSOCIATED PHYSICIANS, P.C.,
and ELIAS G. GENNAOUI, M.D.,

Defendants-Appellants,

and

AJIT KITTUR, M.D.,

Defendant.

KELLY, J. (*concurring in part and dissenting in part*).

I dissent from the majority's decision that the trial court abused its discretion in denying a *Davis-Frye*¹ hearing. I also disagree that there was insufficient evidence of causation. I agree with the conclusion that Henry Ford Hospital is not liable under the theory of successor liability. Therefore, with respect to the

¹ *People v Davis*, 343 Mich 348; 72 NW2d 269 (1955), and *Frye v United States*, 54 App DC 46; 293 F 1013 (1923).

defendants other than Henry Ford Hospital, I would affirm the rulings of both lower courts for plaintiff.

The *Davis-Frye* Hearing

Defendant Oakwood Hospital failed to present any substantiation for its motion asserting that the testimony of plaintiff's causation expert, Dr. Ronald Gabriel, was inadmissible because it was not recognized in the scientific community. Rule 2.119(A)(1)(b) of the Michigan Court Rules requires that a motion state with particularity the grounds and authority on which it is based. All that defendant stated was a conclusory and overbroad statement that

[t]he testimony and opinions regarding plaintiff's condition and the causes for it that were offered by Dr. Ronald Gabriel in deposition are groundless in the extreme and, by his own admission, without support or even mention in modern medical literature.

To this statement, defendant attached several pages of Dr. Gabriel's deposition testimony. After reviewing them, I find that Dr. Gabriel's only relevant admission is that few recent studies regarding fetal head compression exist because it occurs rarely. The reason it occurs rarely is that fetal heart monitors and other medical technology help detect the conditions associated with it so that head compression is averted.

A lack of recent studies does not necessarily indicate that a scientific theory has been abandoned or has fallen into disrepute. It may indicate that the theory has become generally accepted. For instance, although there are no recent scientific studies showing the shape of the earth, the statement, "The earth is round," would be accepted in the scientific community.

In its response to defendant's motion, plaintiff cited the Physician's Desk Reference and quoted a textbook describing the effects of labor on a fetus. Defendant offered nothing in response. Had it set forth specific grounds and authority to support the motion, a *Davis-Frye* hearing would have been appropriate.

Under the majority's relaxed standard articulated today, whenever in the future a party claims that a theory is "groundless in the extreme," it appears that party will be entitled to a *Davis-Frye* hearing. This effectively removes from the trial court the discretion to decide whether a hearing is needed, making it automatic. Criminal defendants questioning proffered testimony regarding the psychological effect their actions had on a child victim could receive a *Davis-Frye* hearing on the bald assertion that the testimony is unacceptable in the scientific community.

Defendant's written motion was vague. Attached to it was some of Dr. Gabriel's deposition testimony in which he stated that a compression injury occurred and that it resulted from the administration of excessive Pitocin. The court heard oral argument on the motion. In focusing on the expert testimony that it believed was inadmissible, defendant referred to Dr. Gabriel's testimony that plaintiff had experienced a traumatic head injury during childbirth. It asked for a hearing at which it might present an expert to testify that there is no scientific support for this theory. Defendant did not have an expert nor did it provide an affidavit signed by an expert indicating that Dr. Gabriel's theory is not recognized in the scientific community.

In denying the motion, the judge noted:

The problem with your [defendant's] motion is you don't have any Affidavits. You don't have any evidence in there that -- I mean, that there should be a Davis Frye Hearing. I mean, it's just you as an attorney saying that[granting a hearing without any support for defendant's argument] would mean that everybody can come in here and allege that whatever everybody's expert is saying is not supported by scientific data, and I would have to hold a Davis Frye Hearing in every single case where any expert had to testify. And that's not the standard. You have to submit some evidence to me that I need a Davis Frye Hearing, other than you just saying it.^[2]

² As did the judge in this case, others have noted the

The judge indicated a willingness to revisit the motion should defendant provide support for its contention: "[Y]ou can submit anything additional. I will take a look at it. But that's my ruling today." Defendant never renewed the motion.

difference between the burden of persuasion, which is on the proponent of the evidence, and the initial burden of production. "Because of judicial economy and the 'liberal thrust' of the rules pertaining to experts, it seems reasonable to place the initial burden of production on the opponent for purposes of [a] hearing." *Gentry v Magnum*, 195 W Va 512, 522; 466 SE2d 171 (1995). Appellate decisions in the area offer "little guidance on how trial courts should procedurally accomplish their gatekeeping responsibilities without frustrating" the policy of liberal admissibility of expert evidence. *Alberts v Wickes Lumber Co*, 1995 US Dist LEXIS 5893 (ND Ill, 1995).

Commentators have also addressed the problem. They have noted that allocating the initial burden of production to the opponent of the evidence "further[s] the [] gatekeeping objective without hampering the 'liberal thrust' of the [rules of evidence]." Accordingly, the opponent's burden is merely to go forward with evidence showing that the plaintiff's expert proof is inadmissible. "Plaintiff bears the burden of showing by a preponderance of the evidence that the expert's opinion is admissible." Berger, *Procedural paradigms for applying the Daubert test*, 78 Minn L Rev 1345, 1365-1366 (1994). See, also, Brown, *Procedural issues under Daubert*, 36 Hous L Rev 1133, 1140-1141 (1999). While these decisions and articles deal with the newer *Daubert* test, the inquiry about who bears the burden of production is not affected. See *Daubert v Merrell Dow Pharmaceuticals, Inc*, 509 US 579; 113 S Ct 2786; 125 L Ed 2d 469 (1993). The change occasioned by the adoption of the *Daubert* test relates only to what the proponent must show to prove admissibility once the determination is made that a hearing is warranted.

The Michigan Rules of Evidence grant considerable deference to a trial judge in ruling on motions. With regard to preliminary questions, MRE 104(a) provides that questions regarding the qualification of a person to be a witness and the admissibility of evidence "shall be determined by the court In making its determination, it is not bound by the Rules of Evidence except those with respect to privileges." Contrary to the majority's assertions and in accordance with this rule, the trial court was not bound by MRE 702, which governs the testimony of expert witnesses, when it ruled on defendant's motion.

It is without question that, once a defendant shows that a genuine issue exists with regard to a theory's acceptance, the theory's proponent must prove its acceptance in the medical community. But before that, the party raising the issue must present more than a conclusory allegation that an issue exists.

Defendant failed to make the necessary showing in this case. It never provided support for counsel's proposition that Dr. Gabriel's traumatic injury theory lacked recognition in the scientific community. Even given the opportunity to provide support to the court, defendant was either unwilling or unable to do so. Hence, the trial

court did not abuse its discretion when it refused to hold a *Davis-Frye* hearing.

The Evidence of Causation

Defendants assert that plaintiff failed to present sufficient evidence that his damages were caused by defendants' medical malpractice to allow the case to go to the jury. In presenting its evidence of a prima facie case, a plaintiff must show causation but need not use any particular formulation of words.

In this case, plaintiff's expert did not say "Antonio Craig's cerebral palsy was caused by hypoxia resulting from defendants' breaches of the standard of care." Although desirable, such precision is simply not mandated. "[T]he plaintiff's evidence is sufficient if it 'establishes a logical sequence of cause and effect, notwithstanding the existence of other plausible theories" *Skinner v Square D Co*, 445 Mich 153, 159-160; 516 NW2d 475 (1994), quoting *Mulholland v DEC Int'l Corp*, 432 Mich 395, 415; 443 NW2d 340 (1989).

The trial court ruled found that plaintiff presented sufficient evidence. After the jury found for plaintiff, defendants moved for judgment notwithstanding the verdict. The motion was denied, and on appeal defendants challenge that ruling. They question the sufficiency of the evidence

only with respect to the element of causation.

The standard for reviewing a decision on a motion for judgment notwithstanding the verdict is deferential to the nonmoving party:

If reasonable jurors could disagree, neither the trial court nor this Court has the authority to substitute its judgment for that of the jury. [Matras v Amoco Oil Co, 424 Mich 675, 682; 385 NW2d 586 (1986).]

The trial court found:

Dr. Donn testified that Pitocin can cause both trauma and hypoxia. Dr. Gatewood testified that Pitocin can cause compression, and compression can cause head injury. Dr. Dombrowski testified that Pitocin can cause trauma and hypoxia. Dr. Gabriel testified that Antonio suffered a brain injury during labor and delivery, based on the character of the labor and delivery, based on the fetal monitoring, based on the positioning of the head, based on the MRI findings, it was caused by the use of Pitocin. He testified that there was compression of the head in the pelvic ridge. There was elevation of the venous pressure and loss of blood flow and the loss of oxygen and fusing the brain.

Testimony was also presented that an excessive dose of Pitocin causes cerebral palsy in animals. The majority notes that animal experiments are the only authority that plaintiff offered showing a correlation between excessive amounts of Pitocin and cerebral palsy. The implication is that animal studies are insufficient evidence upon which to base medical expert testimony. That is incorrect.

Dr. Gabriel's authority was sufficient for a jury

reasonably to infer that the same effects occur in humans. Dr. Gabriel also testified that the animal studies were the types "upon which the American Medical Establishment formulated their warnings on the use of oxytocic drugs." These warnings appear in medical reference materials discussing the effects of Pitocin. Defendants did not refute these statements.

Dr. Gabriel testified that he believed that excessive Pitocin caused plaintiff's condition. He testified that the drug affected plaintiff in two ways. It produced both a vascular effect and a traumatic effect. At trial, Dr. Gabriel used the terms "pounding and grinding" to explain the traumatic component of the injury. He testified:

In part, what happened to Antonio I think is more complicated because I think there is a traumatic component as well as a vascular component. Those studies showed the vascular component, that is to say the reduced blood flow.

Antonio also suffered from the trauma of the head being pounded or grinded [sic] into the pelvic rim with successive uterine contractions which were of a high pressure and which resulted in marked decelerations. So I think it's a combination of vascular and trauma.

Dr. Gabriel testified that what happened to Antonio Craig would not have happened without the administration of Pitocin.

The majority focused attention on Dr. Gabriel's

"pounding and grinding" theory as if it were the only theory that plaintiff presented. It was not. Dr. Gabriel testified that there were two different contributors to plaintiff's injuries. He claimed that plaintiff suffered from both a decreased blood flow and from a traumatic compression injury.³

In addition to Dr. Gabriel, Dr. Paul Gatewood testified for plaintiff regarding the standard of care. He stated that an excessive dosage of Pitocin was given to plaintiff's mother. In his expert opinion, this was a deviation from the standard of care. Dr. Gatewood also explained that the administration of excessive Pitocin was

³ The majority maintains that "Dr. Gabriel did not testify that an excessive dosage of Pitocin *alone* . . . could have caused plaintiff's cerebral palsy." Ante at 31 n 68 (emphasis in original). Yet, the majority begins its causation discussion by noting that "[e]ven if plaintiff were able to show upon remand that Dr. Gabriel's testimony was properly admitted, defendants would nevertheless be entitled to JNOV." Ante at 23. Thus, for purposes of its causation discussion, the majority assumes both theories were admissible. Were this not the case, the proper outcome should be a remand for a *Davis-Frye* hearing, not an appellate ruling that the defendants were entitled to JNOV. The testimony of Dr. Gabriel indicates that excessive Pitocin causes reduced blood flow ("the vascular component"). The studies showed a link between this vascular component and cerebral palsy. There was sufficient evidence of causation, regardless of the majority's reading of the record.

the proximate cause of Antonio's injuries.⁴

After Dr. Gatewood established a breach of duty, Dr. Gabriel testified that excessive Pitocin causes fetal brain damage and cerebral palsy in animals. In Dr. Gabriel's opinion, the excessive Pitocin caused the fetal brain damage that led to Antonio's cerebral palsy.⁵ In all, there was sufficient evidence to establish the element of causation. The jury was entitled to decide the case on the evidence presented.

Conclusion

The failure to hold a *Davis-Frye* hearing was not an abuse of discretion under the facts of this case. Defendant Oakwood had an obligation to provide support for the claim that Dr. Gabriel's traumatic injury theory was not accepted within the scientific community.

Moreover, plaintiff presented sufficient evidence to establish the element of causation. Both Dr. Gabriel and

⁴ When plaintiff's counsel asked whether these deviations "were the proximate causes of the reduced oxygen, reduced blood flow to the fet[us] here Antonio Craig," the doctor answered "[T]hese deviations are a result in the hypoxic episodes . . . all of these factors contributed to the development and prolongation of the interim hypoxia that this baby's brain suffered."

⁵ When asked whether Antonio's cerebral palsy was related to the administering of Pitocin, the doctor testified that "without Pitocin this would not have happened."

Dr. Gatewood testified effectively that an excessive dosage of Pitocin gave rise to the conditions that caused the baby's injuries.

Therefore, I would affirm the decision of the Court of Appeals on all issues except that Henry Ford Hospital is liable under a theory of successor liability. In that regard, I agree with the majority's conclusion that the Court of Appeals was incorrect. With that exception, the decision of the Court of Appeals should be affirmed.

Marilyn Kelly