This opinion is nonprecedential except as provided by Minn. R. Civ. App. P. 136.01, subd. 1(c).

STATE OF MINNESOTA
IN COURT OF APPEALS
A20-1134

A minor, by and through her mother and natural guardian, Amber Nelson,
Appellant,

vs.

Fairview Health Services d/b/a/ Fairview Lakes Regional Medical Center, et al.,
Respondents,

Allina Health System d/b/a/ Allina Hospitals and Clinics d/b/a/ Allina Health Forest Lake Clinic, et al.,
Respondents.

Filed August 2, 2021
Affirmed
Ross, Judge

Hennepin County District Court
File No. 27-CV-18-8104

Paul D. Brandes, (pro hac vice), Villari, Brandes & Giannone, P.C., Conshohocken, Pennsylvania; and

Shannon C. Carey, Sieben Carey, P.A., Minneapolis, Minnesota (for appellant)

Rebecca Egge Moos, Kelly A. Putney, Mark R. Bradford, Anuradha Chudasama, Bassford Remele, Minneapolis, Minnesota (for respondents Fairview Health Services, et al.)

Carolin J. Nearing, John M. Bjorkman, Ben Mulligan, Larson King, LLP, St. Paul, Minnesota (for respondents Allina Health System, et al.)

Considered and decided by Cochran, Presiding Judge; Ross, Judge; and Frisch, Judge.

NONPRECEDENTIAL OPINION

ROSS, Judge

The circumstances leading to this medical-malpractice case occurred ten years ago after Amber Nelson went to the hospital, pregnant, reporting vaginal discharge. An ultrasound revealed significant cervical dilation, prompting doctors to administer labor-inhibiting and fetal-development medications. Nelson gave birth to a 24-week-old daughter weighing 1.4 pounds 31 hours after she arrived at the hospital. The child now suffers from significant health issues. Nelson sued two hospitals and two physicians for medical malpractice, alleging that they failed to administer the labor-inhibiting medication soon enough to forestall delivery and failed to administer the fetal-development medication sufficiently to prevent the child's health problems. The district court granted summary judgment dismissing Nelson's claims, refusing to consider her expert-witness testimony and concluding that she failed to identify disputed issues of material fact for trial. Our review of the record leads us to conclude that the district court should not have excluded the expert testimony but that the testimony nevertheless falls short of presenting a prima facie case of malpractice. We therefore affirm the summary-judgment decision.

FACTS

The following facts are either undisputed or are based on disputed evidence but construed favoring Amber Nelson's malpractice claims.

At about 5:15 in the evening of May 22, 2011, Nelson arrived at the Fairview Lakes Regional Medical Center reporting "clumpy, blood stained pink, vaginal discharge." She was 23 weeks and five days pregnant. A Fairview nurse put Nelson on a fetal monitor,

which showed no signs of uterine contractions. The nurse notified Dr. Deborah Strand, the on-call physician. Dr. Strand ordered that fluids be administered and authorized a cervical examination. The nurse performed the examination and noted 20% cervical effacement. Dr. Strand sent Nelson home at about 6:45 p.m. with instructions to see her own physician the next day.

The next day at about 9:00 a.m., Nelson telephoned Allina Health Forest Lake Clinic requesting to see Dr. Janine Rose, her primary-care physician. Dr. Rose saw Nelson at about 4:00 p.m. and discovered a "copious amount of tan vaginal discharge" and a "bluish mass" protruding from her cervix. Dr. Rose considered the possibility of preterm labor but had never before seen a bluish-mass abnormality. She referred Nelson back to Fairview for an ultrasound to assess cervical length.

A technician administered the ultrasound at about 7:30 p.m. The ultrasound revealed that Nelson's cervix was dilated three centimeters and that her amniotic sac was protruding. Dr. Rose transferred Nelson to United Hospital at 8:00 p.m. and ordered staff to administer magnesium sulfate, a tocolytic agent used to delay preterm labor, and antenatal steroids (ANS), which accelerate fetal organ maturity. Nelson arrived at United Hospital at about 10:00 p.m. By 11:50 p.m., her cervical dilation had increased to between six and seven centimeters, and doctors moved her to the delivery room. Nelson delivered her baby (whom we will call Daughter for privacy reasons) an hour later, weighing 635 grams, or about 1.4 pounds.

Daughter spent four-and-a-half months in the newborn-intensive-care unit. Now ten years old, Daughter suffers from serious developmental delays and medical conditions

including prematurity, various brain bleeds, cerebellar hemispheric atrophy, cerebral palsy, and seizures.

On Daughter's behalf, Nelson sued respondents Dr. Rose, Allina, Dr. Strand, and Fairview in 2018 for negligent treatment and medical malpractice. Nelson alleged that her cervical examinations revealed preterm labor, requiring immediate administration of magnesium sulfate and ANS. A complete course of ANS, Nelson alleged, would have reduced Daughter's risk of being born with morbidities. She also later asserted a so-called loss-of-chance claim that she did not plead in her complaint.

Nelson retained experts Dr. Noah Hillman, a neonatology specialist, and Dr. Chukwuma Onyeije, an obstetrics and maternal-fetal specialist. Dr. Hillman opined that a full course of ANS tends to significantly reduce neonatal morbidity rates and that receiving a complete course of ANS would have done so for Daughter. Dr. Hillman also considered but ruled out alternative causes of Daughter's medical conditions, including autism, hypoxic ischemic brain injury, infection, and genetic disorder. But he could not rule out Daughter's periviability, which is the condition in which a neonate is at a gestational age approaching viability, even though he acknowledged that Daughter's biggest risk factor was periviability regardless of ANS. In other words, Dr. Hillman could not say that Daughter would not have suffered the same conditions as a result of her prematurity even with earlier interventions.

Dr. Onyeije opined that the nurse's original cervical examination revealed possible preterm labor and that Dr. Strand should have immediately examined Nelson, admitted her to a hospital, and administered ANS and magnesium sulfate. He said that Dr. Rose also

should have known that Nelson was likely in preterm labor and that she should have immediately administered ANS and magnesium sulfate and transferred her to a hospital equipped for childbirth. Nelson's receiving ANS and magnesium sulfate earlier, according to Dr. Onyeije, would have reduced Daughter's risk of harm and prevented her health problems because magnesium sulfate could have delayed preterm delivery for 48 hours, allowing for the administration of a full course of ANS. Dr. Onyeije considered Daughter's underlying conditions and believed them unable to interfere with tocolysis.

Respondents procured opinion testimony from Dr. Jay Goldsmith, a neonatologist, and Dr. Jeffrey Boyle, a maternal-fetal specialist, who opined favorably about the care respondents provided. Respondents moved for summary judgment and moved the district court to exclude Dr. Hillman's and Dr. Onyeije's testimony.

The district court excluded Dr. Hillman's testimony and granted summary judgment to the respondents. It determined that Dr. Hillman's opinion lacked foundational reliability because his differential diagnosis failed to rule out periviability, and the studies he relied on were too attenuated from the circumstances of this case. The district court overruled the respondents' objection to Dr. Onyeije's opinion. But it determined that, without Dr. Hillman's testimony or other evidence to provide proof of causation, Nelson failed to offer evidence to create a genuine issue of material fact. The district court did not analyze Nelson's loss-of-chance argument because neither Dr. Hillman nor Dr. Onyeije specified the percentage of lost chance.

Nelson appeals.

DECISION

We first assess whether the district court correctly excluded Dr. Hillman's testimony for a lack of foundational reliability. We then consider whether summary judgment is appropriate in light of our conclusion about the admissibility of Dr. Hillman's testimony.

I

Nelson argues that the district court improperly excluded Dr. Hillman's testimony for lack of foundation. A district court should admit expert opinion testimony as evidence only if it is foundationally reliable. Minn. R. Evid. 702. "Foundational reliability is a concept that looks to the theories and methodologies used by an expert." *Kedrowski v. Lycoming Engines*, 933 N.W.2d 45, 56 (Minn. 2019). A proponent of expert testimony must establish the "underlying reliability, consistency, and accuracy" of scientific subject matter and that the evidence is reliable as applied to the case. *Doe v. Archdiocese of St. Paul*, 817 N.W.2d 150, 168 (Minn. 2012). We review for an abuse of discretion the district court's decision that an expert witness's testimony lacks foundational reliability. *McDonough v. Allina Health Sys.*, 685 N.W.2d 688, 694–95 (Minn. App. 2004). This includes its determination of underlying reliability, consistency, and accuracy. *Doe*, 817 N.W.2d at 164, 168.

Nelson argues that Dr. Hillman based his opinion on valid medical studies concluding that ANS decrease the occurrence of ongoing morbidities in neonates born at 24 weeks and that the district court therefore abused its discretion by excluding the testimony. Dr. Hillman justified his opinion based in part on a differential diagnosis

involving his review of Nelson's and Daughter's medical presentation, his consideration of possible alternative causes, and his ruling out plausible causes until the most likely one remained. In simple terms, a differential diagnosis employs a scientifically based process of elimination of causes, narrowed to a sole cause. *See McDonough*, 685 N.W.2d at 695 n.3. Although Nelson contends that Dr. Hillman rebutted every plausible alternate cause, including periviability, Dr. Hillman acknowledged that Daughter's "biggest risk factors . . . are her periviability, which includes her extremely low birth weight, regardless of ANS exposure." If an expert does not explain why a plausible alternative cause is not the sole cause, the expert's differential diagnosis is necessarily unreliable. *See id.* at 695 (observing that expert witnesses provided only conclusory denial of potential alternative causes). Dr. Hillman did not rule out periviability as the cause of Daughter's morbidities, and his differential diagnosis is therefore unavailing and cannot by itself qualify his opinion as foundationally reliable.

After the district court recognized the flaw in Dr. Hillman's differential diagnosis, it also concluded that the medical studies he relied on could not support his opinion about the cause of Daughter's morbidities. An expert may provide more than one basis for his testimony, and wholesale exclusion of expert testimony is an abuse of discretion if any part of the testimony is reliable. *Kedrowski*, 933 N.W.2d at 58. Dr. Hillman also based his opinion on medical studies examining the impact of ANS on neonates, and on his personal experience including clinical observation and research. We therefore examine each.

We first consider whether Dr. Hillman's personal experience provided a sufficient basis for his opinion. Dr. Hillman based his opinion in part on his experience, including

clinical observation through his practice and research conducted on 26-week-old neonate sheep, whose lungs reacted favorably to ANS. But the district court did not abuse its discretion by treating as unreliable Dr. Hillman's studies on older gestational-age sheep in the context of developing an opinion about the curative effect of ANS on 24-week-old unborn children. Similarly within the district court's discretion was its decision not to credit Dr. Hillman's clinical experience. This is because his opinion relies on the underlying theory that ANS decreases or eliminates the risk of morbidities—a theory in need of scientific testing supported by studies. When an expert's opinion involves a scientific test, the judge must confirm "that the test itself is reliable and that its administration in the particular instance conformed to the procedure necessary to ensure reliability." *Goeb v. Tharaldson*, 615 N.W.2d 800, 814 (Minn. 2000). Dr. Hillman's opinion requires us to consider the medical studies on which he bases it.

We consider whether these studies would compel the district court to deem them reliable as applied to Daughter, or in other words whether they support Dr. Hillman's proffered conclusion that a full as opposed to partial course of ANS would have either eliminated or reduced Daughter's ongoing morbidities. Dr. Hillman based his opinion on 12 peer-reviewed medical studies and articles. But eight of them share the same methodological flaw. They put neonates who received a partial course of ANS and those who received a full course within the same category when drawing conclusions about the impact of ANS on birth morbidities. Failure to segregate these classes prevents the consequent conclusions from providing a jury any basis to rely on Dr. Hillman's opinion. A ninth study considered only neonates who received a full course of ANS with no

comparison to those receiving a partial course, preventing the study from providing a sufficient basis for Dr. Hillman's testimony. And a tenth study did not expressly examine the impact of ANS on birth complications. Ten of the 12 authorities that Dr. Hillman relied on therefore afford no basis on which we can say that the district court abused its discretion by deeming his testimony unsupported.

But we reach a different conclusion from two of the studies. Those studies did distinguish between full and partial courses of ANS and concluded that 24-week-old neonates who received a full course of ANS had a reduced likelihood of developing morbidities. For example, the first study concluded that 69.4% of 22- to 27-week-old neonates who received a full course of ANS had no cerebral palsy, deafness, or blindness, and they had a good cognitive score at age 18 to 22 months. The survival rate for neonates who received only partial ANS decreased from 69.4% to 65.3%. The second study concluded that the children of mothers who received ANS less than 24 hours before delivery had an 11.4% chance of severe neonatal brain injury while the children of mothers who received ANS between one and seven days before birth had a 7.1% risk of severe neonatal brain injury. Because these two studies support Dr. Hillman's conclusion that a full course of ANS would have reduced Daughter's current morbidities, some of Dr. Hillman's evidence is reliable as applied here. The district court therefore abused its discretion by excluding the expert testimony on foundational reliability grounds.

Allina and Fairview's argument for a different holding is not convincing. They argue that none of Dr. Hillman's studies are reliable because ANS cannot improve a premature infant's lung function if the infant's lungs are not sufficiently developed. But

Dr. Hillman based his opinion on a dozen medical studies and articles that collectively examined tens of thousands of neonates and all similarly concluded that ANS reduces birth morbidities in neonates of the same gestational age as Daughter. And as to whether the studies examine the impact of ANS on pneumothorax or cardiopulmonary arrest, two lung conditions that ANS had shortly after birth, the record shows that at least one of them does. That study concluded that ANS reduced *all* birth morbidities, and it also concluded that the rate of bronchopulmonary dysplasia, or chronic lung disease, was lower with ANS. Dr. Hillman testified that pneumothorax is related to lung underdevelopment and that ANS accelerates lung maturity. Pneumothorax may provoke cardiopulmonary arrest, and a patient suffering from cardiopulmonary arrest would therefore benefit from ANS-assisted increased lung maturity. In any event, pneumothorax and cardiopulmonary arrest are conditions that affected Daughter only shortly after her birth, but Nelson's claim involves ten-year-old Daughter's current morbidities.

II

Although we agree with Nelson that Dr. Hillman's testimony rested on sufficient foundation, we agree with respondents that summary judgment is nonetheless appropriate. The ultimate issue here is whether the district court properly dismissed the suit through summary judgment, a question we consider de novo. *Montemayor v. Sebright Prods., Inc.*, 898 N.W.2d 623, 628 (Minn. 2017). We may affirm summary judgment for any valid reason. *Myers Through Myers v. Price*, 463 N.W.2d 773, 775 (Minn. App. 1990), *review denied* (Minn. Feb. 4, 1991). We will do so only if there is no genuine issue of material

fact and the respondents, as the moving parties, are entitled to judgment as a matter of law. Minn. R. Civ. P. 56.01.

Respondents are entitled to judgment as a matter of law if Nelson cannot establish a prima facie case of medical malpractice. *See Dickhoff ex rel. Dickhoff v. Green*, 836 N.W.2d 321, 337 (Minn. 2013). In actions against health-care providers, a plaintiff establishes a prima facie case of malpractice by "introduc[ing] expert testimony demonstrating: (1) the standard of care in the medical community applicable to the particular defendant's conduct; (2) that the defendant departed from the standard of care; and (3) that the departure from the standard of care directly caused the plaintiff's injury." *Becker v. Mayo Found.*, 737 N.W.2d 200, 216 (Minn. 2007). Appellate courts have consistently held that "a plaintiff must prove, among other things, that it is more probable than not that his or her injury was a result of the defendant health care provider's negligence." *Dickhoff*, 836 N.W.2d at 337 (quotation omitted). Although causation is generally a question for the fact finder, when reasonable minds can arrive at only one conclusion, causation is a question of law. *Lubbers v. Anderson*, 539 N.W.2d 398, 402 (Minn. 1995). That is so here.

Dr. Hillman opined that "[Daughter's] injuries are due to prematurity and had [] Nelson been timely and sufficiently administered antenatal steroids and magnesium sulfate . . . she would not have suffered significant, if any, neurologic damage . . . respiratory complications . . . coagulopathy . . . [or] damage to her brain." Dr. Hillman's conclusion makes separate points, implicating two separate medical-malpractice theories: a traditional causation theory and a loss-of-chance theory. Alleging that negligent

treatment prevented Daughter from being born morbidity-free is akin to alleging that negligent treatment *caused* her injury, an allegation that aligns with a traditional medical-malpractice claim. *See Fabio v. Bellomo*, 504 N.W.2d 758, 762 (Minn. 1993). But arguing that negligent treatment would have *reduced* her morbidities is equivalent to arguing that negligent treatment "diminished the likelihood of achieving some more favorable outcome," and therefore comports with a loss-of-chance claim. *Dickhoff*, 836 N.W.2d at 335 (quotation omitted). Nelson asserted her claims separately before the district court, but the district court did not assess her loss-of-chance claim because neither expert testified about actual percentage of chance lost. On appeal, Nelson conflates these two claims without expressly arguing loss of chance. We separate them and address each theory in turn.

A. Nelson did not present a prima facie traditional malpractice claim.

Nelson failed to provide sufficient evidence to establish a prima facie case for her theory that an allegedly negligent incomplete ANS course *caused* Daughter's morbidities. As we have observed, Dr. Hillman's differential diagnosis and personal experience are insufficient to support the claim. The studies he relied on for his opinion therefore must support the conclusion that giving a 24-week-old neonate only a partial ANS dose more likely than not caused her current morbidities. Although the parties dispute the level of risk that must be supported to make out a claim (respondents arguing for a "more likely than not" causation standard and Nelson arguing that the evidence need prove only that ANS would have reduced the risk of complications), we do not need to specify the required risk

reduction. This is because the two relevant medical studies on which Dr. Hillman relies offer a risk-reduction conclusion that, as a matter of law, cannot establish causation.

The two studies concluded that a full course of ANS provided only a marginal risk reduction over partial ANS, between 4.1% and 4.3%. They also both concluded that, under either ANS-treatment approach, a neonate had a less-than-probable chance of an unfavorable outcome—30.6% with full ANS treatment and 34.7% with partial ANS treatment, and 7.1% with full ANS treatment and 11.4% with partial ANS treatment, respectively. An incomplete course of ANS cannot have more than likely caused an unfavorable outcome if both an incomplete and a full course of ANS result in less-than-likely-to-occur injuries. Indeed, we have concluded that a medical-malpractice claim should be dismissed on evidence-insufficiency grounds even when the evidence established that allegedly negligent treatment increased the chance of an unfavorable outcome from 15-25% to 30% while the likelihood of a favorable outcome exceeded 50% regardless of the course of treatment. *Fabio v. Bellomo*, 489 N.W.2d 241, 245–46 (Minn. App. 1992), *aff'd*, 504 N.W.2d 758 (Minn. 1993). This reasoning compels the same result here. Both relevant studies that Dr. Hillman relied on establish only a marginal risk decrease in the context of an overall less-than-likely-to-occur injury. Although Dr. Hillman opined that a full course of ANS would more likely have eliminated Daughter's morbidities, he based this opinion on medical studies that fail to support the conclusion, on a flawed differential diagnosis, and on personal experience that in turn relies on the unsupportive studies. Nelson therefore fails to establish a traditional prima facie negligence case and summary judgment is appropriate.

B. Nelson did not present a prima facie loss-of-chance malpractice claim.

We consider last whether Nelson provided sufficient evidence to establish a prima facie case for her claim that the allegedly incomplete ANS course *exacerbated* Daughter's morbidities. *See Schore v. Mueller*, 186 N.W.2d 699, 701 (Minn. 1971) (allowing recovery for "the additional injury over and above the consequences which normally would have followed from the preexisting condition absent defendant's negligence," provided that plaintiff establishes that a defendant's negligence caused the aggravation of the condition). In a loss-of-chance claim, a plaintiff must establish that a "physician's negligence substantially reduced [her] chance of recovery." *Dickhoff*, 836 N.W.2d at 337. Nelson's loss-of-chance theory fails. "The first step in a loss of chance case is to measure the chance lost." *Id.* at 335. We measure damages "as the percentage probability by which the defendant's tortious conduct diminished the likelihood of achieving some more favorable outcome." *Id.* (quotation omitted). Neither Dr. Hillman nor Dr. Onyeije specified any percent by which Nelson's doctors' allegedly negligent treatment decreased Daughter's chances of being born "with no or just mild disability." The claim therefore fails as a matter of law for lack of evidence.

We add that, even if expert opinion had so specified the chances, "the lessened degree of recovery resulting from the medical malpractice [must] be more than a token or de minimis amount." *Id.* at 334 n.13 (noting that a reduction in chance from 60% to 40% is, as a matter of law, sufficient) (quotation omitted). The medical opinions on which Dr. Hillman based his general, unspecified opinion suggest a percentage loss, 4.1% and 4.3%, which would constitute an insufficient, token amount.

Because we conclude that the district court appropriately granted respondents' motion for summary judgment, we need not consider Fairview's cross-appeal contending that the district court abused its discretion by not also excluding Dr. Onyeije's testimony.

Affirmed.