IN THE COURT OF APPEALS OF IOWA

No. 20-0742
Filed June 16, 2021

DES MOINES PUBLIC SCHOOLS and EMC RISK SERVICES, LLC-TPA,
Plaintiffs-Appellees,

vs.

THOMAS HILDRETH (deceased) by JANE HILDRETH (spouse),
Defendant-Appellant.

Appeal from the Iowa District Court for Polk County, David Porter, Judge.

Jane Hildreth, on behalf of her deceased husband, Thomas Hildreth, appeals the district court's reversal of the workers' compensation commissioner's award of death benefits. **REVERSED.**

Jerry Jackson of Moranville & Jackson, P.C., West Des Moines, for appellant.

Valerie A. Landis of Hopkins & Huebner, P.C., Des Moines, for appellees.

Heard by Schumacher, P.J., Vaitheswaran and Greer, JJ.

SCHUMACHER, Judge.

Jane Hildreth, on behalf of her deceased husband, Thomas Hildreth, appeals from the district court's reversal of the workers' compensation commissioner's award of death benefits. We find the district court erred in reversing the commissioner's award and in determining the commissioner's decision was unsupported by substantial evidence. Accordingly, we reverse the judgment entered by the district court and reinstate the commissioner's decision.

I. Facts & Prior Proceedings

A. On October 11, 2013, Thomas Hildreth was admitted to the hospital after suffering a stroke. Hildreth died on October 16, five days later. He was sixty-six years old.

Approximately two years earlier, Hildreth sustained a traumatic brain injury. On August 26, 2011, Hildreth slipped and fell on a wet floor at Des Moines East High School, where he was a teacher and football coach. As a result of the fall, Hildreth tore his right rotator cuff, herniated a disc in his lumbar spine, and was rendered unconscious. He was taken to the hospital, where treating physicians observed an abrasion on the right frontal region of Hildreth's head and diagnosed him with a concussion. A magnetic resonance imaging (MRI) scan of Hildreth's head was conducted at the time and returned normal results.

The injury was accepted as a workplace injury. After the fall, Hildreth reported experiencing migraines, issues with memory and vision, tinnitus, irritability, and difficulty sleeping. The migraines were so severe he would sometimes vomit. He temporarily lost sight in his left eye. He also experienced pain and stiffness in his neck, shoulder, and lower back. Hildreth sought treatment

for his symptoms. In November 2011, he was prescribed migraine medication for his post-concussion headaches. He saw an otolaryngologist who found it logical that his tinnitus resulted from head trauma and recommended hearing aids. Hildreth also underwent physical therapy to address his pain and stiffness. On April 11, 2012, Hildreth underwent a psychological evaluation, which showed no evidence of cognitive dysfunction. By July 2012, the headaches and migraines were reported to be improving.

On July 13, 2012, Hildreth retired from the Des Moines Public Schools. Hildreth and his wife purchased a home in Arizona. Throughout the remainder of 2012 and into 2013, Hildreth continued to experience negative symptoms, including neck and back pain. He received injections and steroid bursts, and continued with physical therapy. On March 8, 2013, he underwent surgery to address the pain in his lower back. Despite the surgery, Hildreth continued to experience pain in his lower back, and some of his symptoms seemed to be worsening.

On October 11, 2013, slightly over two years past his fall, Hildreth was admitted to the hospital with signs of a stroke. A computerized tomography (CT) scan of the brain was conducted and showed "possible acute right basal ganglia infarct." The scan also showed a previous injury in the right parietal and left cerebellar regions, suggesting a previous stroke. Treatment was provided but Hildreth passed away on October 16. The immediate cause of death as identified by the death certificate was an "acute basilar artery infarction" with "etiology uncertain."

B. Hildreth's surviving spouse[1] filed a petition in arbitration seeking death benefits, medical expenses, and costs arising out of Hildreth's death. Des Moines Public School denied there was a causal link between the injury suffered by Hildreth in 2011 and the stroke which lead to his death.

On June 21, 2017, the case was submitted before the deputy workers' compensation commissioner. Both parties offered reports from medical experts concerning the relationship between traumatic brain injury and stroke. Hildreth presented opinion letters from three experts: Dr. Marc Hines,[2] Dr. Jamey Joe Hawk,[3] and Dr. Francis Miller.

Of the experts offered by Hildreth, the deputy commissioner found the opinion of Dr. Miller the most compelling. Dr. Miller is a professor of internal medicine with the division of cardiology at Duke University and at the Durham Veterans Administration Hospital. Dr. Miller offered an initial medical report and a follow-up report responding to the opposing expert.

In his report, Dr. Miller analyzed the medical records of Hildreth and considered the medical research regarding the relationship between concussions and strokes. First, Dr. Miller noted that Hildreth did not have the traditional risk factors for stroke, pointing out that Hildreth's documented blood pressure was

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[1] Also referred to as "Hildreth."

[2] Dr. Hines is a neurologist who provided a medical literature review in which he summarized numerous studies and academic articles, explaining their relative strengths and weaknesses. Dr. Hines concluded that based on Hildreth's medical history and the literature available, Hildreth was at risk of stroke as a result of his mild traumatic brain injury.

[3] Dr. Hawk is a Director of Urgent Care at the Iowa Clinic. In his report, Dr. Hawk reviewed Hildreth's medical records and the articles cited by the other experts and concluded that Hildreth's traumatic brain injury likely would have played a significant part in contributing to his stroke.

within the normal range, he had no history of tobacco use, no hypercholesterolemia, no clinical evidence of coronary or peripheral vascular disease, and at the time of the stroke, displayed no evidence of atrial fibrillation or other conditions associated with cardio embolic events.

Dr. Miller then addressed the relationship between traumatic brain injury and stroke. He explained that traumatic brain injury "can result in functional and structural damage to the vasculature" and that based on his experience and medical research, this may increase one's risk of stroke. Accordingly, because Hildreth did not show the typical risk factors for stroke and because a prior traumatic brain injury may increase the risk of stroke, it was Dr. Miller's opinion that Hildreth's injury in 2011 was a significant contributing factor to his stroke and death.

Dr. Miller's report cited several articles and studies, which show an increased risk of stroke following a traumatic brain injury. Specifically, Dr. Miller cited "a nationwide, population-based, case cohort study published in the highly respected peer-review journal *Stroke*," which showed "that after adjusting for sociodemographic characteristics and comorbidities, a diagnosis of traumatic brain injury was independently associated with a 10.2, 4.6, and 2.3-fold increased risk of subsequent stroke during 3 months, 1 year, and 5 years of follow-up, respectfully."[4] Dr. Miller also cited to a "subsequent study involving over 25,000 subjects" which "found an increased risk of stroke in individuals with a more mild

[4] Chen YH, et al., *Patients with traumatic brain injury: population-based study suggests increased risk of stroke*, 42 Stroke 2733 (2011).

form of traumatic brain injury than that suffered by Mr. Hildreth."[5] Finally, Dr. Miller noted, "[r]eview of high-quality studies published in peer-reviewed journals provide growing evidence that a prior history of traumatic brain injury increases the subsequent risk of stroke."[6]

Des Moines Public Schools offered it's own expert, Dr. Michael Jacoby, to rebut the assertions of Hildreth's experts. Dr. Jacoby is a Director of Medical Education at the Mercy Neuroscience Department and an Adjunct professor of neurology at the Des Moines University Medical School. He offered an initial medical report and also testified at the hearing before the deputy commissioner. Dr. Jacoby concluded that Hildreth's death was not due to a remote traumatic event.

In his report, Dr. Jacoby explained that strokes attributable to head trauma occur near the time of the traumatic event and are due to "cervicocephalic dissection of blood vessels"—i.e., rupture of an artery. The type of stroke suffered by Hildreth was due to "thrombus resulting in occlusion of a critical intracranial blood vessel"—i.e., a blood clot blocking an artery. It was, therefore, Dr. Jacoby's opinion that it would be incorrect to conclude that the traumatic brain injury suffered by Hildreth two years prior was a substantial contributing factor to his stroke.

Additionally, Dr. Jacoby pushed back on the notion that Hildreth did not exhibit risk factors for stroke. Primarily he noted that Hildreth "was in his 60s at

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[5] Liu SW, et al., *Increased Risk of Stroke in Patients of Concussion: A Nationwide Cohort Study*, 14 Int'l. J. Env't Rsch. Pub. Health 230 (2017).

[6] Dr. Miller cites a study from the American Academy of Neurology's journal "Neurology." The study is discussed and relied on by the other experts, the deputy commissioner, and the district court. Burke JF, et al., *Traumatic brain injury may be independent risk factor for stroke*, 81 Neurology 33 (2013).

the time of his death, a time of great stroke risk." Dr. Jacoby also noted that the medical records available to him largely related to Hildreth's musculoskeletal issues and were rather limited in regard to his general health over time and suggested that Hildreth may have exhibited other risk factors that were not documented in the records.

Dr. Jacoby ended his report by stating, "No reasonable evidence exists to support a relationship between trauma of any sort and stoke years later" and noting that there is "significant medical literature to support the increased risk of stroke through a natural process of aging." Dr. Jacoby concluded that he is "unable to identify a direct correlation between any injury and the stroke."

Dr. Jacoby also offered in-person testimony at the hearing and commented on the methodology used in some of the studies cited by Dr. Miller, noting the limitations of retrospective analysis and the potential for selection bias. Dr. Jacoby testified that while the studies showed an interesting connection, more research was necessary to establish a relationship and pointed out that the authors of the studies acknowledged as much.

Dr. Miller responded to Dr. Jacoby's opinion in a follow-up report. Dr. Miller agreed that strokes occurring at the time of head trauma are often associated with arterial dissection; however, he disagreed with the contention that because Hildreth's stroke was not due to dissection, his prior head trauma could not have contributed to his stroke. He stated, "Dr. Jacoby agrees that the treating physicians diagnosed Mr. Hildreth with concussion but fails to acknowledge in his report the association between concussion and risk of subsequent stroke." Dr.

Miller maintained that "a prior diagnosis of concussion substantially increases the risk of subsequent stroke."

C. In its decision, the deputy commissioner considered the experts' opinions and noted that research into the connection between traumatic brain injury and stroke is in its early stages and that further study is necessary to establish a medical consensus. The deputy wrote, "This is a very difficult decision. Dr. Jacoby's in-person testimony was convincing. The medical literature does not draw a definitive conclusion."

The deputy reasoned,

> The studies, while new, are based on a large population. The [study published in the International Journal of Research and Public Health[7]] was nationwide, population-based. The [study published in Neurology[8]] study involved over a million subjects.
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> Dr. Jacoby [sic] points out [sic] that these studies are not prospective and therefore lack some direct correlation to the decedent's circumstances, the studies did take into account demographics, vascular risk factors, comorbidities, trauma severity, and trauma mechanism.

Ultimately, the deputy commissioner concluded, "The decedent's medical condition at the time of his death, combined with the concussive incident on August 26, 2011, most closely aligns with the opinions of Dr. Miller and the subsequent medical literature." The deputy commissioner further noted, "However, the standard in these cases is by a preponderance of the evidence or rather, more likely than not."

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[7] Liu SW, et al., *Increased Risk of Stroke in Patients of Concussion: A Nationwide Cohort Study*, 14 In't J. Env't Rsch. Pub. Health 230 (2017).

[8] Burke JF, et al., *Traumatic brain injury may be independent risk factor for stroke*, 81 Neurology 33 (2013).

The deputy commissioner ordered Des Moines Public Schools to pay death benefits to Jane according to Iowa Code section 85.31 (2017) and reimbursement for medical bills. Des Moines Public Schools appealed the deputy commissioner's decision. On April 10, 2019, the workers' compensation commissioner affirmed the deputy commissioner's findings. On May 9, Des Moines Public Schools petitioned the district court for judicial review of the agency's findings.

On April 21, 2020, the district court granted judicial review and reversed the decision of the workers' compensation commissioner.[9] Jane Hildreth, on behalf of her husband, Thomas, appeals.

II. Standard of Review

A final judgment rendered by a district court under chapter 17A is reviewed for errors of law. Iowa Code § 17A.20; Iowa R. App. P. 6.907. The Iowa Administrative Procedure Act confers to the district court the power of judicial review over final agency action. Iowa Code § 17A.19(1); *Foods, Inc. v. Iowa C.R. Comm'n*, 318 N.W.2d 162, 164 (Iowa 1982).

Acting in this capacity, the district court may only interfere with the commissioner's decision if it is erroneous under one of the grounds enumerated in section 17A.19(10). In our review of the district court, we apply "the standards of section 17A.19(10) to the agency action to determine whether this court's conclusions are the same as those of the district court." *Foods, Inc*., 318 N.W.2d at 165 (quotation omitted).

[9] The transcript from the hearing on the petition for judicial review is not contained in this record.

III. Analysis

A. In the present case, the district court reversed the commissioner's decision affirming the deputy commissioner's finding that the concussion incident suffered by Hildreth was a substantial contributing factor in his stroke and ultimate death. In reversing the commissioner's decision, the district court rejected the opinion of Hildreth's expert witness, Dr. Miller, and found that without this evidence, substantial evidence did not exist in the record to support the deputy commissioner's findings.

Medical causation presents a question of fact that is "vested in the discretion of the workers' compensation commission." *Cedar Rapids Cmty. Sch. Dist. v. Pease*, 807 N.W.2d 839, 844–45 (Iowa 2011). A court may only disturb the commissioner's finding of fact if it is not supported by substantial evidence. *Id.*; Iowa Code § 17A.19(10)(f).

Under section 17A, substantial evidence is defined as "the quantity and quality of evidence that would be deemed sufficient by a neutral, detached, and reasonable person, to establish the fact at issue when the consequences resulting from the establishment of that fact are understood to be serious and of great importance." Iowa Code § 17A.19(10)(f)(1). In properly applying the substantial-evidence standard to an agency's factual determination, our supreme court has explained,

> Evidence is not insubstantial merely because different conclusions may be drawn from the evidence. To that end, evidence may be substantial even though we may have drawn a different conclusion as fact finder. Our task, therefore, is not to determine whether the evidence supports a different finding; rather, our task is to determine whether substantial evidence, viewing the record as a whole, supports the findings actually made.

Pease, 807 N.W.2d at 845 (internal citations omitted).

B. The district court's reasoning was based on its contention that the studies and theories Dr. Miller relied upon in forming his opinion were "not to a reasonable degree of medical certainty." In particular, the district court took issue with two of the studies cited by Dr. Miller in his opinion letter. In rejecting the first study,[10] the district court found that the study was "based on research that used objectionable methodology not appropriate for this type of scientific study, including retrospective analysis, selection bias, and a lack of definition of concussion or traumatic brain injury and of stroke as referred to in these studies." The district court rejected the second study[11] because the authors of the article "injected uncertainty in their own conclusions by acknowledging the need for additional studies concerning the connection between traumatic brain injuries and strokes."

The district court found the opinion offered by Dr. Miller was "based on evidence that, at this stage, is merely conjectural," as the studies "simply opened a discussion in the medical community," which is "not the same as drawing a conclusion to a reasonable degree of scientific certainty." The district court found it "immaterial" whether the deputy commissioner found the offered studies compelling and stated that "[w]hat is material is whether the scientific and medical communities have accepted the studies as scientifically or medically valid."

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[10] Chen YH, et al., *Patients with traumatic brain injury: population-based study suggests increased risk of stroke*, 42 Stroke 2733 (2011).
[11] Burke JF, et al., *Traumatic brain injury may be independent risk factor for stroke*, 81 Neurology 33 (2013).

Therefore, the district court excluded the expert opinion of Dr. Miller from its substantial evidence analysis and concluded, Without that evidence, there is insufficient evidence in the record to support the commission's conclusion that the stroke that claimed Mr. Hildreth's life in October 2013, was causally related to the concussion he sustained in August 2011."

C. We find it was error for the district court to exclude from its analysis the expert testimony of Dr. Miller. The question of medical causation presents a question of probability and, in this case, "substantial contributing factors." The question is, therefore, often answered through the opinions of experts. *Pease*, 807 N.W.2d at 845 ("Medical causation is essentially within the domain of expert testimony." (quotation omitted)); *Schutjer v. Algona Manor Care Ctr.*, 780 N.W.2d 549, 560 (Iowa 2010) ("Ordinarily, expert testimony is necessary to establish the causal connection between the injury and the disability for which benefits are claimed.").

In establishing medical causation, absolute certainty may never be achieved and is not required. *Hansen v. Cent. Iowa Hosp. Corp.*, 686 N.W.2d 476, 485 (Iowa 1984) (finding it was error for the district court to exclude doctor's expert testimony on medical causation where the district court had concluded the evidence was not "expressed to a medical degree of certainty" and "insufficient to be admissible"). "Buzzwords like 'reasonable degree of medical certainty' are [sic] not necessary to generate a jury question on causation." *Id*. "A lack of absolute certainty [in an expert's opinion] goes to the weight of the expert's testimony, not to its admissibility." *Johnson v. Knoxville Cmty. Sch. Dist.*, 570 N.W.2d 633, 637 (Iowa 1997).

"[T]he determination of whether to accept or reject an expert opinion is within the 'peculiar province' of the commissioner." *Pease*, 807 N.W.2d at 845. The admissibility of expert testimony is favored, and the rules of evidence are not strictly applied in hearings before the commissioner. *See* Iowa Code § 17A.14(1) ("A finding shall be based upon the kind of evidence on which reasonably prudent persons are accustomed to rely for the conduct of their serious affairs, and may be based upon such evidence even if it would be inadmissible in a jury trial."); *Ranes v. Adams Lab'ys, Inc.*, 778 N.W.2d 677, 693 (Iowa 2010) ("[T]he factual basis of an expert opinion goes to the credibility of the testimony, not the admissibility."); *Leaf v. Goodyear Tire & Rubber Co.*, 590 N.W.2d 525, 530–31 (Iowa 1999) ("[W]e are committed to a liberal view on the admissibility of expert testimony."); *Morrison v. Century Eng'g*, 434 N.W.2d 874, 877 (Iowa 1989) ("Strict rules of evidence are not to be applied in proceedings before the industrial commissioner.").

The commissioner is to consider the expert testimony in light of the "accuracy of the facts relied upon by the expert and other surrounding circumstances." *Schutjer*, 780 N.W.2d at 560. The commissioner, as the fact finder, determines the weight to be given to expert testimony. *Id.*; *Sanchez v. Blue Bird Midwest*, 554 N.W.2d 283, 285 (Iowa Ct. App. 1996) ("Expert opinion testimony, even if uncontroverted, may be accepted or rejected in whole or in part by the trier of fact.").

Hildreth presented three experts who offered their opinion regarding the relationship between traumatic brain injury and stroke. Medical studies published in peer-reviewed academic journals indicating an increased risk of stroke following

traumatic brain injury were introduced. The experts considered these studies and explained their relative strengths and weaknesses.

The deputy commissioner considered the opinions of the experts and evaluated the facts and sources they relied on. The deputy commissioner also considered the medical records of Hildreth, which showed a lack of documented stroke risk factors absent his age. The deputy commission noted that this was "a very close case" but concluded the evidence "most closely aligns with the opinions of Dr. Miller and the subsequent medical literature."

The district court's inquiry on judicial review is "closely and strictly circumscribed." *Morrison*, 434 N.W.2d at 876. An opposing expert's testimony explaining the limitations of certain types of methodology and an author's acknowledgment of the need for additional research into a particular medical field does not warrant the exclusion of an expert's testimony by the district court on judicial review. In doing so, the district court engaged in a re-weighing of the credibility of the experts and supplemented its judgment for that of the commissioner. "[T]he court's review is not de novo. The court must not reassess the weight of the evidence because the weight of the evidence remains within the agency's exclusive domain." *Robbennolt v. Snap-On Tools Corp.*, 555 N.W.2d 229, 234 (Iowa 1996).

On judicial review it is not the district court's role to weigh the credibility of the experts before the commissioner; the legislature has vested this responsibility with the commissioner. "Public interest demands that judicial hands must be kept off administrative judgment calls." *Morrison*, 434 N.W.2d at 876; *Sellers v. Emp. Appeals Bd.*, 531 N.W.2d 645, 646 (Iowa Ct. App. 1995) ("The administrative

process presupposes judgment calls are to be left to agency. Nearly all disputes are won or lost there.").

The substantial-evidence standard directs the court to determine whether "substantial evidence in the record, viewed as a whole, supports the finding *actually made*." *Pease*, 807 N.W.2d at 845 (emphasis added). "Evidence is not insubstantial merely because different conclusions may be drawn from the evidence." *Id.* We find the district court incorrectly reassessed the weight of the evidence.

C. Upon our review, we find substantial evidence exists in the record when viewed as a whole to support the commissioner's decision and the deputy commissioner's findings. The deputy commissioner considered the testimony of the experts, weighed the evidence presented, and rationally explained its conclusion.

There is no requirement for the commissioner to find causation established through a "reasonable degree of scientific certainty." *Hansen*, 686 N.W.2d at 485 ("The rule is that expert testimony indicating *probability* or *likelihood* of a causal connection is sufficient to generate a question on causation."). The nature of medical causation will depend on probability and is often answered through the opinions of experts. *Pease*, 807 N.W.2d at 845. The credibility of the experts and the reliability of the sources they rely on are to be weighed in light of all the relevant facts by the commissioner, who may accept or reject in whole or in part the evidence. *Id*.

It was within the preview of the deputy commissioner to accept the opinion of Dr. Miller over the opposing expert. The record establishes that the deputy

commissioner sufficiently considered the qualifications of Dr. Miller, the strengths and weaknesses of the sources he cited, and the opposing expert's criticism of Dr. Miller's opinion. *See* Iowa Code § 17A.16(1)**;** *Broadlawns Med. Ctr. v. Sanders*, 792 N.W.2d 302, 306 (Iowa 2010).

When the standard is properly applied, we find substantial evidence exists to support the agency's decision. "Because the commissioner is charged with weighing the evidence, we liberally and broadly construe the findings to uphold his decision." *Schutjer*, 780 N.W.2d at 558; *Second Injury Fund v. Bergeson*, 536 N.W.2d 543, 546 (Iowa 1995) ("We broadly and liberally construe the commissioner's findings to uphold, rather than defeat the commissioner's decision.").

IV. Conclusion

We find substantial evidence supports the workers' compensation commissioner's decision. We find the district court erred in reversing the commissioner's award and in determining the commissioner's decision was unsupported by substantial evidence. Accordingly, the judgment entered by the district court is reversed and the commissioner's decision is reinstated.

REVERSED.