STATE OF MICHIGAN

COURT OF APPEALS

MICHAEL BAK, through his Representative PATRICIA HOLLAND,[1]

Plaintiff-Appellee/Cross-Appellee,

v

HENRY FORD MACOMB HOSPITAL CORPORATION doing business as HENRY FORD MACOMB HOSPITAL, EASTPOINTE RADIOLOGISTS P.C., GREAT LAKES MEDICINE P.C., PROFESSIONAL EMERGENCY CARE P.C., AYMAN FOUNAS, D.O., JASON C. MUIR, D.O., PRASHANT SHANTI PATEL, M.D., SALVATOR ROJAS, III, M.D., MICHAEL P. TRPKOVSKI, M.D., and ABBY M. WATERFIELD, D.O.,

Defendants/Cross-Appellants,

and

DAVID S. WEINGARDEN & ASSOCIATES, P.C., and ISSAC TURNER, M.D.,

Defendants/Appellants,

and

JONATHAN BEAULAC, D.O., MONICA BESZKA, D.O., NICHOLAS DOMAN, D.O.,

Defendants.[2]

UNPUBLISHED
October 31, 2019

No. 342483
Macomb Circuit Court
LC No. 2015-003094-NH

[1] Holland is Michael Bak's representative under a durable power of attorney.

Before: CAVANAGH, P.J., and BECKERING and GADOLA, JJ.

PER CURIAM.

In this medical malpractice case, defendants David S. Weingarden & Associates, P.C. and Isaac Turner, M.D., which provided neurology services, appeal by leave granted[3] two orders denying their motion for summary disposition alleging that no genuine issue of material fact existed on the element of proximate cause. On cross-appeal, defendants Eastpointe Radiologists, P.C. and Michael P. Trpkovski, M.D., which provided radiology services; defendants Great Lakes Medicine (GLM), P.C., Prashant Shanti Patel, M.D., and Salvador Rojas, III, M.D., which provided internal medicine services; and defendants Henry Ford Macomb Hospital (HFMH) Corporation, Professional Emergency Care (PEC), P.C., Ayman Founas, D.O., Jason Muir, D.O., and Abby Waterfield, D.O., which provided hospital and emergency services, also challenge the orders denying their motions for summary disposition alleging that no genuine issue of material fact existed on the element of proximate cause. We affirm.

I. PERTINENT FACTS AND PROCEDURAL HISTORY

This case arises from medical care that defendants rendered to Michael Bak, a 60-year-old man, from March 6, 2014 through March 8, 2014. Bak arrived at HFMH's emergency room with symptoms of a stroke and alleges that defendants failed to order immediate and appropriate testing, as well as neurology and endovascular interventional consultations, and to transfer Bak to Henry Ford-Main—a primary care stroke center—which resulted in the failure to detect and treat a blockage in his left internal carotid artery and culminated in a massive stroke. Plaintiff alleges that defendants did almost nothing to prevent a mild stroke from escalating into a massive, severely debilitating stroke. Defendants claim that no treatment, including endovascular interventional surgery, was available at the time that would have prevented plaintiff's massive stoke and related injuries, and thus, plaintiff cannot establish proximate cause. A brief summary of the course of Bak's hospitalization and the procedural history follows.

On March 6, 2014, at about 1:30 p.m.,[4] Bak arrived at HFMH's emergency department and was seen by defendants Muir[5] and Waterfield. Bak stated that he believed he suffered a

[2] The claims against Beaulac, a senior internal medicine resident, and Doman, an orthopedic surgery intern, were dismissed by summary disposition but the motion was denied as to Beszka. There is no cross-appeal in which Beszka is a named party.

[3] *Bak v Henry Ford Macomb Hosp Corp*, unpublished order of the Court of Appeals, entered July 25, 2018 (Docket No. 342483). Judge Elizabeth Gleicher would have denied leave to appeal.

[4] The medical records in the lower court file are not clear as to precise times, particularly with regard to physician consultation notes. The dates and times noted in the records are when the note was electronically signed, not when it was made or when Bak was actually seen. Some

stroke at about 11:00 a.m. while he was working out at the gym. He felt right leg and arm numbness and weakness, as well as blurred vision in his left eye. Bak also stated that he had a similar episode the night before which spontaneously resolved. In the emergency room, his right arm and leg felt weak, and the vision in his left eye was "bright." A stat CT head scan was performed and the result was reported as: "1.7 cm area of either cytotoxic edema from ischemia or streak artifact in the left anterior frontal lobe. Consider MRI correlation."

At 3:25 p.m. Muir wrote a note acknowledging the result of the CT scan "which is suspicious for previous stroke." Muir noted that he spoke to defendant Patel[6] who indicated that defendant Turner[7] should evaluate Bak and "possibly get an MRI." An order for a consult with Turner was written and a message was left for him but it was not a "stat" order or message. At 6:49 p.m., Bak was admitted to the hospital to rule out a stroke and had right-sided weakness and numbness, as well as light sensitivity and blurred vision in his left eye. Bak's NIH Stroke Scale[8] score was 2. It appears that no other testing was performed and no other physicians evaluated Bak that evening.

On March 7, 2014, at about 11:00 a.m., defendant Beszka, a neurology resident under the supervision of Turner, evaluated Bak for right-sided arm, hand, and leg weakness, as well as left visual changes, including bright and blurry vision. Her note indicates that: "Per Dr. Turner, CT scan has looked more like streak artifact in the left anterior frontal lobe." Bak was noted to be improving, but had "possible expressive aphasia." A routine—not stat—MRI of the brain was ordered. Aspirin was continued.

It appears from the MRI report that the MRI of the brain was performed at 12:39 p.m. The report states that the indication was a CVA (cerebral vascular accident commonly known as

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notes were signed two days or more after the fact. An attempt is made here to provide the most accurate times possible.

[5] Muir was an emergency department resident physician and employee of HFMH. Waterfield was an attending emergency department physician with PEC.

[6] Patel was an internist with GLM.

[7] Turner was a neurologist with David S. Weingarden & Associates, P.C.

[8] The NIH Stroke Scale (NIHSS) "is a tool used by healthcare providers to objectively quantify the impairment caused by a stroke. The NIHSS is composed of 11 items, each of which scores a specific ability between 0 and 4. For each item, a score of 0 typically indicates normal function in that specific ability, while a higher score is indicative of some level of impairment. The individual scores from each item are summed in order to calculate a patient's total NIHSS score. The maximum possible score is 42, with the minimum score being a 0." https://en.wikipedia.org/wiki/National_Institutes_of_Health_Stroke_Scale (accessed August 6, 2019).

a stroke). But the MRI was not interpreted and the report was not authored by defendant Trpkovski[9] until several hours later at 7:22 p.m. as noted below.

At about 1:30 p.m. defendant Rojas, an internist with GLM, authored a note which indicated that Bak was evaluated. Rojas stated that Bak continued to have some right lower extremity weakness and his assessment was that Bak may have had a stroke or a possible transient ischemic attack. Rojas referenced the CT scan of the head as "negative," and noted the pending MRI. He indicated that a swallow evaluation was not necessary because Bak could swallow.

A nursing progress note written at 3:36 p.m. indicated that a nurse called the rapid response team because Bak was experiencing neurological changes. The nursing note stated that Bak became aphasic, had worsened right-sided weakness, and an NIH Stroke Scale score of 9.

A progress note written at 3:41 p.m. by defendant Doman indicates that he and defendants Beaulac and Founas[10] were on the rapid response team who responded at 3:20 p.m. to see Bak. The note indicated that Bak's right-sided strength had returned and he was awake, alert, and answering questions. He had mild aphasia and an NIH Stroke Scale score of 2. Bak was sent for a stat CT scan. Doman's progress note indicated that the CT scan[11] was read "as no acute intracranial process" and that Doman called Turner who agreed with the stat CT scan and "potentially further workup with MRI."

At 7:22 p.m., the MRI was interpreted and a report was signed by defendant Trpkovski. The MRI report states as the Impression:

> 1. A small rounded focus of restricted diffusion is present within the left caudate nucleus, consistent with acute ischemic event. There are additional tiny punctate areas of restricted diffusion involving the left basal ganglia and left frontal lobe, also consistent with acute ischemic events.
>
> 2. Loss of flow-voids involving the distal cervical segment of the left internal carotid artery extending into the cavernous segment of the left internal carotid artery, concerning for occlusion. Consider MRA or CTA for further evaluation, if clinically indicated.

There is no indication that the MRI results were provided to Bak's treating physicians on an immediate basis or that any physician was directly notified about the results, but the report was

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[9] Trpkovski was a radiologist with Eastpointe Radiologists, P.C.

[10] Founas was a first-year internal medicine resident.

[11] The head CT scan report was signed at 3:49 p.m. and states: "No acute intracranial hemorrhage or clear evidence of brain edema."

uploaded to Bak's electronic medical record. There is no indication in the record that any physician evaluated Bak that evening.

On March 8, 2014, a nursing progress note at about 1:30 a.m. indicated that defendant Founas was at Bak's bedside to assess for possible neurological changes per the nurse's request, but Founas did not notice any changes from a previous assessment. At 8:15 a.m., a nursing progress note indicated that Bak provided one-word answers to questions, was unable to answer questions fully, and had difficulty responding to commands. At 8:30 a.m., defendant Rojas evaluated Bak after a nurse indicated that Bak had difficulty speaking. Rojas wrote this information in a progress note that was apparently authored following a later visit during the same day although it was signed on March 10. The progress note from some time later in the day stated that Bak's right-sided weakness was essentially unchanged. His diagnosis was an acute CVA. But his note also states: "Doppler just came back, right internal carotid 0% to 19% stenosis." There is no reference to the left internal carotid. The note also indicated that a swallow evaluation was needed at that time.

At about 11:00 a.m. a nursing progress note stated that Bak was more alert, but that he was incontinent and unable to sit upright on his own. At 11:58 a.m. a progress note signed by Candida Ferguson, D.O., stated that Bak was nonverbal and had expressive aphasia. The note indicated that Bak had a CVA with right-sided weakness and "MRI head: suggestive of decreased from left ICA [internal carotid artery]."

At about 3:45 p.m. according to the nursing progress note, Bak was seen by Manaf Seid-Arabi, M.D., a neurologist, and a stat MRA was ordered.[12] Seid-Arabi noted that Bak had flaccid paralysis of the right upper and lower extremities. There was no movement at all. And Bak had complete expressive aphasia. Seid-Arabi also noted: "Patient did have carotid Doppler studies with suspected possible distal occlusion with drop in velocity." Further, he stated that arrangements were made for Bak "to be transferred right away to Henry Ford Hospital neuro section in main campus for hoping some help if possible as far as normal duplex of carotid in the opposite side. Reason for current one would be blood clot/emboli in the carotid artery causing his current stroke." In another progress note, Seid-Arabi wrote that Bak was seen by Turner and Seid-Arabi asked him to make arrangements to transfer Bak to the main hospital "for hoping for the further treatment and hoping for retrieve [sic] of the clot, which showed no flow toward the end of the left internal carotid artery and then also CT reported the same."

At 4:00 p.m. a head CT scan was performed and the findings included: "Increasing hypodensity is seen within the left basal ganglia as well as the left frontal lobe, consistent with areas of known recent infarction." Trpkovski signed the report at 4:25 p.m.

At 4:34 p.m., an MRA was performed which was read by Trpkovski who stated:

[12] An MRA is "a type of MRI that looks specifically at the body's blood vessels." https://www.hopkinsmedicine.org/health/treatment-tests-and-therapies/magnetic-resonance-angiography-mra (accessed August 6, 2019).

> Complete occlusion of the visualized portions of the left internal carotid artery with reconstitution of the distal cavernous segment of the left ICA [internal carotid artery]. The left middle cerebral and interior cerebral arteries are patent and demonstrate an asymmetric decreased signal intensity compared to the right, which may relate to sluggish flow.

At 5:16 p.m., a nursing progress note indicated that defendant Rojas spoke with a Dr. Naoum and they agreed that Bak should be transferred to the main campus of Henry Ford Hospital (Henry Ford-Main). Subsequently, Bak was taken by ambulance to Henry Ford-Main. He was assessed by a resident and admitted to the stroke unit, but received no endovascular interventional consult and no significant treatment. By the next day, March 9, 2014, it was determined that Bak suffered severe brain damage caused by a stroke. Because of the extent of the brain damage Bak has right-sided paralysis, significant physical disabilities, as well as aphasia, and now lives in an assisted-living facility requiring 24-hour care for the rest of his life.

On August 30, 2016, Patricia Holland, Bak's sister, filed this medical malpractice action on Bak's behalf under a durable power of attorney. Plaintiff's first amended complaint filed on September 2, 2016 alleges that all defendants in some manner failed to take timely and appropriate action, including by ordering a stat MRI, MRA, and neurological consultation in light of Bak's stroke symptoms. They also failed to promptly obtain, review, and act on the MRI and MRA findings, which resulted in a delay in detecting and treating the blood vessel blockage in his brain caused by a clot and culminated in a massive stroke. Because of physician inaction, the time window closed within which interventional therapy, including clot removal, could be successfully performed and resulted in significant loss of brain function.

In particular, with respect to Muir, Waterfield, and Patel, plaintiff's complaint alleges that they failed to call for a stat neurological consult and stat MRI. With respect to Turner, the complaint alleges that he failed to order a stat MRI and MRA, and also failed to transfer Bak to a facility capable of performing neurointerventional therapy, such as Henry Ford-Main, as soon as the test results became available. With respect to Founas, the complaint alleges that he failed to timely obtain the results of the MRI, failed to timely advise a neurologist or supervising physician of those results, failed to appreciate Bak's worsening condition upon physical examination on March 8, and failed to obtain a stat neurological consult in light of the MRI results and his examination of Bak. With respect to Trpkovski, the complaint alleges that he failed to timely review the MRI that had been completed several hours earlier and failed to immediately notify Bak's physicians of the abnormal MRI findings, as well as suggest further testing. With respect to Rojas, the complaint alleges that he failed to order a stat MRI and neurological consult, failed to timely obtain the results of the MRI, and failed to appreciate Bak's symptoms as indicative of low or lack of brain blood flow and reversible ischemia.

Eventually, all defendants filed motions for summary disposition under MCR 2.116(C)(10), arguing that plaintiff could not establish the element of proximate cause. Even if necessary testing and results would have been timely, in March 2014 Henry Ford-Main was not performing endovascular interventional procedures on patients like Bak with a completely occluded carotid artery because they were controversial and considered potentially dangerous at that time. Thus, regardless, Bak would have still received only supportive care. No randomized

control studies showed that patients like Bak would more likely than not benefit from such procedures and there was only "some correlation" with a good outcome. Accordingly, defendants argued, plaintiff's complaint against them must be dismissed.

Plaintiff responded to defendants' motions for summary disposition, arguing that if proper imaging studies had been timely performed, the clot would have been identified and it is likely Bak would have been immediately transferred to Henry Ford-Main where early clot interventional therapy could have been performed. On March 8 when Bak was finally seen by another neurologist at HFMH, Seid-Arabi, an immediate MRA was ordered and he immediately made arrangements to transfer Bak to Henry Ford-Main. Seid-Arabi noted that the immediate transfer was necessary in hopes that the clot would be retrieved. Further, plaintiff presented the expert testimony of two neurologists, including an endovascular interventionalist, in support of his claims that, with timely and proper intervention, Bak would have had a good outcome and would not be suffering the consequences of a massive stroke. Accordingly, plaintiff argued, defendants' motions should be denied.

On November 20, 2017, the trial court heard oral arguments on defendants' motions for summary disposition and the parties argued consistent with their briefs. In particular, Trpkovski, the radiologist, argued that plaintiff could not establish that his failure to personally notify plaintiff's physician about the abnormal MRI was a proximate cause of his injuries because, when plaintiff's physician found out the result, he did nothing anyway. Plaintiff disagreed, noting that once the MRI result was seen by Rojas the next morning he ordered consults with vascular surgery and neurology, including Seid-Arabi who then ordered a stat MRA and Bak's immediate transfer to Henry Ford-Main. In other words, if plaintiff's doctors had been aware of the MRI findings, which explained plaintiff's symptoms, they would have acted differently in light of the clinical presentation. The trial court agreed that if the MRI results had been known sooner, plaintiff may have been transferred sooner and intervention may have taken place. Thus, the court concluded, a question of fact existed sufficient for the jury to determine the claim against Trpkovski.

Next, the other defendants made a "more global proximate cause argument." Defendants argued that the testimony from plaintiff's proximate cause expert, Nirav Vora, M.D., was insufficient to establish proximate cause because there were no random controlled studies showing that there was efficacy with regard to potential interventional therapies he proposed. Plaintiff disagreed, arguing that Vora discussed a 2005 article where they did emergent carotid stenting and 23 out of 25 times blood flow was able to be reestablished. Defendants' own expert, Chris Kazmierczak, M.D., testified that flow can be reestablished by stenting. Further, plaintiff argued, Vora testified about other articles concerning the reestablishment of blood flow to blocked areas of the brain. Vora testified that "more likely than not had the artery been opened back up before the brain tissue" died, plaintiff would have had a good result. Defendants' counsel argued that, in 2014, artery dissection to relieve an occlusion was not the state of the art. Plaintiff responded that even Kazmierczak testified that he would have considered such an intervention and would have discussed the option with the patient. Ultimately, the trial court held that, in light of plaintiff's expert's testimony, defendants were not entitled to summary disposition. Thereafter, orders were entered denying defendants' motions for summary disposition regarding proximate causation.

On December 4, 2017, plaintiff deposed Panayiotis Mitsias, M.D., a vascular neurologist and the director of the stroke and neurovascular center at Henry Ford-Main from 2000 to 2017. Mitsias repeatedly testified that an endovascular interventionalist would be consulted to determine whether any intervention was available to treat someone with Bak's condition—an extracranial internal carotid artery occlusion. He also deferred to "the endovascular people" as to what the statistical risk would be of intervention, particularly of breaking the blood vessel. But in his opinion, a complete occlusion could not be revascularized. According to Mitsias, from the initial presentation evidence one could see that Bak had an ischemic infarct. To his knowledge, there was no endovascular treatment option for an occluded carotid. He further testified: "I would consult with my endovascular people, and bring them to see and discuss with the patient and tell them what they could or could not do." That is, he would have consulted an endovascular colleague to get an opinion as to the best course of action. He and the interventionalist would have together decided whether revascularization was an option. Mitsias could not determine if Bak had a large area of dead brain tissue on March 6 or 7 because those imaging studies were not performed. He admitted that the initial MRI showed that a "not very big" stroke had occurred.

Following Mitsias' deposition, all defendants moved for reconsideration of the orders denying summary disposition with respect to proximate cause, arguing that additional information in support of their motions was obtained. Plaintiff had argued that if Bak would have been transferred to Henry Ford-Main sooner, additional treatment modalities—including endovascular therapy like revascularization through thrombus retrieval—would have been available as treatment and he would have had a better outcome. However, Mitsias testified that Henry Ford-Main was not utilizing endovascular therapy stroke treatments in March 2014; therefore, no genuine issue of material fact existed on the issue of proximate causation and summary disposition was proper.

In response, plaintiff argued that Mitsias testified that if Bak had been transferred sooner, he would have consulted an endovascular interventionalist to determine whether to perform revascularization. Plaintiff further argued that Mitsias did not consult an endovascular interventionalist because, by the time that he treated Bak on March 9, Bak's brain tissue was incapable of revascularization.

The trial court granted defendants' motion for reconsideration and a hearing was held on January 16, 2018. Defendants argued that Mitsias testified that even if Bak had gone directly to the emergency room at Henry Ford-Main on March 6, because of the location of the occlusion Bak had, no interventional treatment was available. Plaintiff argued that Mitsias is not an endovascular interventionalist so he was not the one to make the decision whether interventional treatment was an option and he even testified that he would have consulted an interventionalist if he had seen Bak sooner. The court ultimately determined that there existed a question of fact because it was unknown what the interventionalists would have recommended if they had actually been consulted. The court again denied the motions for summary disposition regarding proximate causation and, on January 30, 2018, an order was entered consistent with the court's decision. Subsequently, leave to appeal to this Court was sought and granted.

On appeal, defendants argue that they were entitled to summary disposition for lack of proximate cause because endovascular procedures were controversial and Henry Ford-Main was

not performing them on patients like Bak in March 2014 so he was not a candidate for intervention even when he arrived at HFMH on March 6, 2014. We disagree.

II. ANALYSIS

We review de novo a trial court's decision on a motion for summary disposition. *Lakeview Commons v Empower Yourself, LLC*, 290 Mich App 503, 506; 802 NW2d 712 (2010). A motion brought under MCR 2.116(C)(10) tests the factual support of a plaintiff's claim and should be granted if, after consideration of the evidence submitted by the parties in the light most favorable to the nonmoving party, no genuine issue regarding any material fact exists. *Id*. "There is a genuine issue of material fact when reasonable minds could differ on an issue after viewing the record in the light most favorable to the nonmoving party." *Allison v AEW Capital Mgt, LLP*, 481 Mich 419, 425; 751 NW2d 8 (2008).

In a medical malpractice case, the plaintiff must show: "(1) the applicable standard of care, (2) breach of that standard by defendant, (3) injury, and (4) proximate causation between the alleged breach and the injury." *Wiley v Henry Ford Cottage Hosp*, 257 Mich App 488, 492; 668 NW2d 402 (2003) (citation omitted). "Expert testimony is required to establish the standard of care and a breach of that standard, as well as causation." *Kalaj v Khan*, 295 Mich App 420, 429; 820 NW2d 223 (2012) (citations omitted). There are two elements to proximate causation: (1) cause-in-fact, i.e., "but for" causation, and (2) legal causation. *Craig v Oakwood Hosp*, 471 Mich 67, 86-87; 684 NW2d 296 (2004), quoting *Skinner v Square D Co*, 445 Mich 153, 163; 516 NW2d 475 (1994). At issue here is but-for causation. To establish but-for causation, a plaintiff must present substantial evidence from which a jury could conclude that more likely than not, the plaintiff's injuries would not have occurred but for the defendant's conduct. *Weymers v Khera*, 454 Mich 639, 647-648; 563 NW2d 647 (1997), quoting *Skinner*, 445 Mich at 164-165. There must be specific facts set forth "that would support a reasonable inference of a logical sequence of cause and effect." *Skinner*, 445 Mich at 174. A causation theory premised on mere speculation or possibilities is insufficient. *Id*.; *Wiley*, 257 Mich App at 496. "Proximate cause is a question for the jury to decide unless reasonable minds could not differ regarding the issue." *Lockridge v Oakwood Hosp*, 285 Mich App 678, 684; 777 NW2d 511 (2009).

Plaintiff alleged in his complaint that defendants breached the standard of care in several instances, including: (1) that the emergency room physicians failed to order an immediate MRI and neurological consultation despite Bak's stroke symptoms; (2) that the attending internists under whose care Bak was admitted, Patel and Rojas, failed to order an immediate MRI, MRA, and neurological consultation, failed to appreciate Bak's symptoms as indicative of low or lack of blood flow and reversible ischemia, and failed to promptly obtain results of pertinent testing; (3) that the first neurologist, Turner, failed to order an immediate MRI and MRA or other pertinent imaging studies, then failed to obtain the results of that testing as soon as possible so that the nature, size, and location of Bak's lesion could be promptly determined and he could have been immediately transferred to Henry Ford-Main—a stroke center, for further evaluation and treatment; (4) that the resident, Founas, who saw Bak on March 8, failed to appreciate Bak's worsening condition and promptly notify the proper physicians; and (5) that the radiologist, Trpkovski, failed to timely review the March 7, 2014 MRI (which had been completed at 12:39 p.m. but not reviewed until 7:22 p.m.) despite the indication being "a CVA," and then failed to

immediately and directly notify Bak's physicians of the abnormal MRI findings as well as suggest further testing.

Here, defendants argue that Henry Ford-Main was not performing endovascular procedures in March 2014 on patients like Bak because they were controversial; thus, plaintiff cannot establish proximate cause and the entire case must be dismissed. In other words, according to defendants, even if they breached the standard of care in all of the ways that plaintiff alleged—it is irrelevant because nothing would have been done for Bak anyway. He was essentially untreatable—even at a major stroke center like Henry Ford-Main—in March 2014. We conclude that reasonable minds could differ on that matter; therefore, we agree with the trial court that proximate cause is a question of fact for the jury to decide. See *Lockridge*, 285 Mich App at 684.

Defendants primarily rely on the deposition testimony of Mitsias in support of their argument that Bak's condition was essentially untreatable.[13] Mitsias testified that Bak would not have received an endovascular procedure even if he had been transferred to Henry Ford-Main before the evening of March 8, 2014. First, we note that Mitsias is not an interventionalist, he does not do interventional procedures, and he did not consult an interventionalist about Bak's potential treatment when Bak arrived at Henry Ford-Main. In fact, Mitsias did not even examine Bak when he arrived at Henry Ford-Main but instead deferred Bak's care to a resident despite the fact that Bak's NIH Stroke Scale score was 16—which Mitsias admitted is considered severe. By the time Mitsias finally examined Bak on the morning of March 9, Bak was no longer a candidate for any endovascular procedure because he would not have benefited; the damage was done. Accordingly, Mitsias' opinion testimony as to whether an interventionalist at Henry Ford-Main would have considered performing an endovascular procedure on Bak when he arrived is entirely speculative and based on conjecture.[14] There is no way for Mitsias to know what an interventionalist actually would have done on March 6, 7, or 8 under the precise circumstances presented—after proper imaging studies were performed—and plaintiff was deprived of the opportunity to have such a consultation before he suffered irreversible brain damage.

Further, plaintiff's expert, Vora, is an endovascular interventionalist, and defendant's expert, Chris Kazmierczak, M.D., is an interventional neuroradiologist. And both Vora and Kazmierczak definitively testified that Bak's condition was treatable through an endovascular procedure. Moreover, the HFMH neurologist who saw Bak on March 8 at about 3:45 p.m., Seid-

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[13] We note that Turner's application for leave to appeal to this Court repeatedly referred to Mitsias as the "chief of interventional neurology" but that is blatantly untrue and extremely misleading. Mitsias is not an interventionalist and it is undisputed that an interventionalist was never consulted about Bak's potential treatment.

[14] We also note and reject defendant Turner's claim that plaintiff was required to present testimony from an interventionalist who practiced at Henry Ford-Main in March 2014—who was *not* consulted at the time—to testify definitively that a specific and successful endovascular procedure would have been performed on Bak had he arrived at the hospital sooner. Clearly that is impossible.

Arabi, immediately arranged for Bak to be transferred to Henry Ford-Main in hopes of a clot retrieval procedure being performed—meaning that they were, in fact, being performed at that time. It is presumed that Seid-Arabi would know what stroke treatments were available at the hospital in which he was a practicing neurologist who treated stroke patients.

Second, Mitsias testified that Bak would not have received an endovascular procedure because he had a complete internal carotid artery occlusion and complete occlusions, in his opinion, could not be revascularized. Again, Mitsias is not an interventionalist. Further, because Bak did not receive the necessary imaging studies (like an MRA or CTA) on March 6 shortly after he arrived at the HFMH emergency room—which was a breach of the standard of care according to plaintiff's expert neurologist, Jeffrey Gelblum, M.D.—it is unknown whether Bak had a complete occlusion at that time. In fact, Vora testified that he believed Bak had a high grade stenosis or a partial occlusion when he presented to the emergency room. Gelblum also testified that Bak was not completely occluded when he presented to the emergency room on March 6, or even on March 7, because his symptoms were waxing and waning, he did not have significant clinical deficits, and it would have been evident on the first head CT scan. Further, Gelblum testified that Bak's clinical picture was consistent with a waxing and waning obstruction because thrombi or clots are dynamic tissues; they are malleable and changing, they open and close, and have pores inside of them through which blood can flow.

Vora also testified that even if Bak had a complete occlusion of the left internal carotid artery an endovascular procedure was possible because there are pores within the thrombus through which endovascular tools can be passed and it was also true if Bak had a dissection. Vora further testified that Bak should have been transferred to Henry Ford-Main and revascularization should have been considered on March 7 when Bak's NIH Stroke Scale score was fluctuating from 0, to 9, and then back to 0, but he was still a candidate for endovascular intervention on March 8, as well as early on March 9. The chance of revascularization was not any lower on March 6, 7, 8, or 9, but the benefit of recovery was highest on March 6 and 7 and then began to decline through March 8 at 9:00 p.m. when his head CT scan showed that he was relatively stable. Vora further testified: "But prior to that, I think more likely than not, an endovascular intervention for someone who was of his health and his age and of his clinical presentation would have resulted in a good outcome."

Third, Mitsias testified that even if Bak had presented to Henry Ford-Main sooner, there was nothing that the doctors could have done for him. Mitsias testified that, in 2014, the "vascular neurology world became much less enthusiastic in considering endovascular treatments in general" because of the failure rate demonstrated in a single study—the "IMS3 study." Contrary to defendants' argument, Mitsias did not make the incredible statement that a single study caused the entire stroke center hospital to absolutely refuse to treat stroke patients with any endovascular procedures—even though these same procedures were being readily performed at the nearby William Beaumont Hospital where defendant's expert, Kazmierczak, practiced. But Mitsias did testify that if he had treated Bak earlier in his care—before the morning of March 9 when he finally saw him and there was too much brain damage—he would have consulted an endovascular interventionalist to determine whether any intervention, including revascularization, was an option in Bak's case. Mitsias testified that, at Henry Ford, "when we face these sort of issues, we discuss with - - we consult other colleagues and take their

opinion." In this situation, he would have consulted an endovascular colleague. He also deferred to "the endovascular people" as to what the statistical risk would be of intervention.

And while the "vascular neurology world" may have been "less enthusiastic" about performing endovascular procedures they clearly were still being performed. Contrary to defendants' claim that the treatment options proposed by Vora were "not generally recognized in the community for this type of patient in 2014,"[15] defendants' own expert who practiced at a nearby hospital, Kazmierczak, testified that the treatment available to Bak in 2014 was the same potential treatment that is still available—angioplasty or stenting of the carotid artery by an endovascular specialist. Kazmierczak admitted that there is not a lot of data from studies on this treatment of an acute stroke, but noted that there will likely *never* be a scientific study because large vessel occlusions are rare and it would take 10 to 15 years to get enough patients with this disease process to even get any meaningful data. Further, Kazmierczak testified, medicine and technology are actually advancing faster than the data can be generated. And in this case, Kazmierczak testified, although there were risks involved in performing the treatment with no treatment it was clear that Bak was going to be very disabled.

Plaintiff's expert, Gelblum, agreed that if Bak had an earlier MRA it would have shown that he had a thrombus that was amenable to thrombectomy or other methodology of thrombolysis by an interventionalist and his condition would have been much improved.[16] While there was a stroke protocol at Gelblum's hospital in 2014 that required intervention within 12 hours of the onset of stroke symptoms, Bak was a candidate for mechanical thrombus retrieval recanalization throughout his hospitalization at HFMH because he did not have a fixed neurologic deficit that was 12 hours in duration. And, like Kazmierczak, Gelblum explained that there are many instances in medicine where there will never be placebo-controlled or randomized studies because it would be dangerous to participants of the study who would have to actually be deprived of potentially beneficial treatment. Further, Gelblum explained, there is always controversy in literature and differences of opinion with regard to stroke care and treatment.

Plaintiff's expert, Vora, also acknowledged that studies existed in March 2014 stating that the efficacy for endovascular therapy of cerebral arteries was not established and it was viewed as controversial. But those studies were quickly outdated because of advances of technology. In other words, as Kazmierczak testified, technology advanced faster than the data generated. Further, Vora testified, there were numerous other studies showing favorable data establishing that endovascular treatment of acute stroke improved the outcome for patients. There were enough studies and enough clinical experience with patients successfully treated in a similar manner to demonstrate that it was beneficial to treat acute stroke patients like Bak or risk severe disability.

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[15] See appeal brief of cross-appellants HFMH, PEC, Founas, Muir, and Waterfield at page 21.

[16] This testimony is consistent with the action HFMH neurologist Seid-Arabi took to have Bak immediately transferred to Henry Ford-Main for possible retrieval of the clot.

Moreover, contrary to defendants' claims, plaintiff's expert, Vora, repeatedly testified that endovascular surgery more likely than not would have provided a better outcome for Bak. Defendants argue that data from randomized controlled studies do not support Vora's testimony but, again, such studies do not exist in the literature and even defendants' own expert, Kazmierczak, testified that there likely will never be a reliable study. Kazmierczak also testified that he read Vora's deposition testimony and the major difference of opinion he had was the timing of the potentially available treatment. Vora would have intervened earlier than Kazmierczak who would have considered intervention when Bak arrived at Henry Ford-Main on March 8 with severe symptoms. Thus, defendants' claim that the "window" was closed for interventional therapy when Bak first walked into HFMH on March 6 is without merit. We likewise reject defendants' argument that Vora's testimony is unreliable because he did not know the exact location of the clot or whether it was an occlusion or a dissection; thus, he did not know what specific interventional therapy would be recommended. In other words, defendants claim that the failure of certain defendants to promptly order, interpret, review, and report the necessary imaging studies, like an MRA—which plaintiff claims is a breach of the standard of care—should insulate defendants from liability because this information was not available to Vora. This position is clearly untenable. Further, Vora testified that the interventional treatment would be determined during the surgical procedure depending on what was found, such as angioplasty alone or with stenting or merely aspiration of the thrombus.

We also note and reject Trpkovski's argument that plaintiff could not establish that his failure to promptly interpret and directly notify Bak's treating physicians about the abnormal MRI was a proximate cause of Bak's injuries because there was still time for interventional therapy when the results became known to his physicians. If the abnormal MRI results had been known by Bak's treating physicians sooner, consults with specialists and orders for imaging studies that would have demonstrated the precise problem would have been made sooner and, as the trial court noted, Bak likely would have been transferred to Henry Ford-Main sooner where he would have been seen by an interventionalist before he suffered too much brain damage for intervention to be beneficial. As Mitsias testified, time is of the essence with respect to stroke because seven million brain cells a minute are lost during a stroke.

In summary, considering the record evidence in the light most favorable to plaintiff as the nonmoving party, we conclude that the trial court properly denied defendants' motions for summary disposition because a genuine issue of material fact exists for trial regarding the element of proximate causation. See *Allison*, 481 Mich at 425. Plaintiff presented substantial evidence from which a jury could conclude that more likely than not, but for defendants' conduct, Bak's injuries would not have occurred. See *Weymers*, 454 Mich at 647-648.

Affirmed. Plaintiff is entitled to costs under MCR 7.219(A) as the prevailing party.

/s/ Mark J. Cavanagh
/s/ Jane M. Beckering
/s/ Michael F. Gadola