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| ELIZABETH H. LAGEMAN, BY AND | : | IN THE SUPERIOR COURT OF |
| THROUGH HER POWER OF | : | PENNSYLVANIA |
| ATTORNEY AND DAUGHTER, | : | |
| ADRIENNE LAGEMAN | : | |

Appellant

v.

No. 756 MDA 2018

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| JOHN ZEPP, IV, D.O.; ANESTHESIA | : |
| ASSOCIATES OF YORK, PA, INC.; | : |
| YORK HOSPITAL; AND WELLSPAN | : |
| HEALTH, T/D/B/A YORK HOSPITAL | : |

Appeal from the Judgment Entered May 10, 2018
 In the Court of Common Pleas of York County Civil Division at No(s):
 2014-SU-000846-82

BEFORE: BOWES, J., OLSON, J., and STABILE, J.

OPINION BY BOWES, J.:

FILED JULY 20, 2020

Elizabeth H. Lageman (“Mrs. Lageman”), by and through her daughter and attorney-in-fact, Adrienne Lageman, appeals from the May 10, 2018 judgment in favor of John Zepp, IV, D.O. (“Defendant Zepp”), Anesthesia Associates of York, Pa., Inc. (“Anesthesia Associates”), and York Hospital in this medical malpractice case.¹ After careful review, we vacate the judgment and remand for a new trial.

¹ The parties stipulated to the dismissal of all claims against WellSpan Health without prejudice on October 21, 2014.

The pertinent facts are as follows. Mrs. Lageman was hospitalized at York Hospital on May 17, 2012, for a bowel obstruction. Two days later, she underwent an emergency exploratory laparotomy and lysis of adhesions. Defendant Zepp, a physician associated with defendant Anesthesia Associates, was the anesthesiologist for the surgery. Defendant Zepp's responsibilities included the placement of a central line into Mrs. Lageman's jugular vein to facilitate the administration of intravenous fluids during the surgery.

Under the guidance of ultrasound, Defendant Zepp inserted a needle into what he believed was the jugular vein. He then slipped a small catheter over the needle. According to Defendant Zepp, he then used manometry to confirm that the catheter was in the vein. In performing manometry, the physician attaches a short piece of IV tubing to the small catheter and draws blood into the tubing. Then the physician lifts up the tubing so that he can observe the level to which the blood falls. When the catheter is properly located in the vein, the blood is expected to fall to about three and one-half inches above the site, matching the level of the pressure in the central venous system. Defendant Zepp maintained that he used manometry to confirm proper placement of the small catheter in the vein, and that the result was consistent with pressure in the venous system. He then inserted the guide wire, followed by the dilator, and a large bore catheter seven inches into the vessel, and stitched it securely in place.

Prior to administering any fluids, Defendant Zepp passed the ultrasound transducer over the catheter. It revealed that the catheter was located in the carotid artery rather than in the jugular vein, a complication known as arterial cannulation. Defendant Zepp abandoned the jugular vein as a central line site and called in a vascular surgeon for assistance. Although the bowel surgery was successful, Mrs. Lageman sustained a stroke that left her paralyzed on her left side, which is one of the recognized risks of arterial cannulation. N.T. Jury Trial, 1/2-8/18, at 185-86; 313.

Adrienne Lageman ("Plaintiff") filed a complaint in medical negligence on her mother's behalf in the Court of Common Pleas of York County against the above-named defendants. Plaintiff alleged that Defendant Zepp deviated from the standard of care in his performance of the central line procedure, and that his negligent cannulation of Mrs. Lageman's carotid artery caused irreversible and permanent stroke injuries. Plaintiff asserted claims sounding in vicarious liability and corporate negligence against York Hospital and the Anesthesiology Associates. However, when trial commenced on January 2, 2018, only vicarious liability claims based on the negligence of Defendant Zepp remained against the Hospital and Anesthesia Associates.

At trial, the following facts were undisputed. While Mrs. Lageman was sedated, Defendant Zepp inserted the central line into Mrs. Lageman's carotid artery instead of her jugular vein. Mrs. Lageman's carotid artery lay below the jugular vein. This anatomical orientation was obvious on ultrasound, and

while it made central line placement more difficult, “over fifty percent of patients over age sixty have the same orientation” as Mrs. Lageman, and Defendant Zepp was familiar with it. N.T. Jury Trial, 1/2-8/18, at 313. Dynamic ultrasound, if used properly, permitted the anesthesiologist to see the tip of the needle and increased the likelihood that it was in the vein rather than the artery. It was agreed by the medical experts and Defendant Zepp, that manometry, the technique whereby the pressure of the blood is measured prior to threading the wire, dilating, and inserting the large-bore catheter, is the “gold standard” for confirming that the small catheter is located in the vein rather than the artery.

The experts agreed that it is rare that placement of a central line in the jugular vein results in cannulation of the carotid artery, a statistic supported by Defendant Zepp’s testimony that it had never occurred in the more than 500 procedures he had performed. Additionally, Defendant Zepp and his expert, Dr. Hudson, as well as Plaintiff’s expert Dr. James M. Pepple, agreed that inadvertent arterial cannulation increases the risk of stroke. Although the defense did not concede that Mrs. Lageman’s stroke was caused by the arterial cannulation, it did not introduce evidence of any other responsible cause. According to Dr. Pepple, the neurologist’s notes ruled out other medical explanations for Mrs. Lageman’s stroke.

In making out a *prima facie* case of negligence, Plaintiff pursued two avenues. She offered the expert testimony of Dr. Pepple, rendered to a

reasonable degree of medical certainty, that Defendant Zepp was negligent in the manner in which he used short-axis view ultrasound as he could not properly visualize the tip of the needle. Consequently, the expert opined, Defendant Zepp was unaware that the needle had passed through the vein, punctured and entered the underlying artery. Dr. Pepple also disputed that Defendant Zepp employed manometry, pointing out that its use was not noted on the anesthesia record. Dr. Pepple opined that cannulation of the artery increased the risk of stroke “exponentially,” which was the very harm that resulted. Thus, Plaintiff established a *prima facie* case of negligence: a duty to use reasonable care, breach of that duty, and evidence that breach increased the risk of harm actually suffered by Mrs. Lageman.

In addition to offering proof of specific negligence on the part of Defendant Zepp, Plaintiff sought to avail herself of the inference afforded by the evidentiary doctrine of *res ipsa loquitur*, meaning literally, “the thing speaks for itself.” She introduced evidence calculated to establish the three elements necessary to invoke the inference. First, she offered the expert testimony of Dr. Pepple to the effect that, accepting Defendant Zepp’s version of how he performed the procedure, this event, *i.e.* arterial cannulation, would not ordinarily occur in the absence of negligence. She offered testimony from Dr. Pepple and Defendant Zepp to rule out other responsible causes for such an

event. Finally, it was undisputed that the alleged negligent central line placement was within the scope of Defendant Zepp's duty to Mrs. Lageman.²

Prior to submission of the case to the jury, Plaintiff presented a proposed point for charge on *res ipsa loquitur*. The trial court refused to give a *res ipsa* instruction, stating that this was not the type of case where it was obvious that the doctrine applied. N.T. Jury Trial, 1/2-8/18, at 491. Thus, the jury was not instructed that it was permitted to infer that the harm suffered by Mrs. Lageman was caused by Defendant Zepp's negligence.

After six days of trial, the jury returned a verdict in favor of Defendants, specifically finding no negligence on the part of Defendant Zepp. Plaintiff filed a motion for post-trial relief, which the trial court denied on April 12, 2018, and this timely appeal followed. Both Plaintiff and the trial court complied with Pa.R.A.P. 1925, and the matter is ripe for our review. Plaintiff presents the following issues:

- A. Whether the trial court committed an error of law when it failed to give Plaintiff's charge of *Res Ipsa Loquitur* during jury instructions?
- B. Whether the trial court committed an error of law when it permitted the Defendants to perform a misleading demonstration before the jury?
- C. Whether the trial court committed an error of law when it failed to correct or cure a misstatement in closing argument by

² We explore in detail *infra* the three elements that must be satisfied in order to invoke the *res ipsa loquitur* inference, and the evidence introduced by the Plaintiff to meet that threshold.

Defense counsel which also violated a prior Order of the trial court?

D. The Jury Verdict was against the evidence.

E. The Jury Verdict was against the weight of the evidence.

Appellant's brief at 4.

In reviewing the trial court's denial of post-trial relief, generally our "scope of review is limited to determining whether the trial court committed a clear abuse of discretion or error of law controlling the outcome of the case."

Stewart v. Motts, 654 A.2d 535, 540 (Pa. 1995). Plaintiff alleges first that the trial court erred in refusing to give an instruction on *res ipsa loquitur* to the jury.

In examining jury instructions, our scope of review is limited to determining whether the trial court committed a clear abuse of discretion or error of law controlling the outcome of the case. Error in a charge is sufficient ground for a new trial if the charge as a whole is inadequate or not clear or has a tendency to mislead or confuse rather than clarify a material issue. Error will be found where the jury was probably misled by what the trial judge charged or where there was an omission in the charge. A charge will be found adequate unless the issues are not made clear to the jury or the jury was palpably misled by what the trial judge said or unless there is an omission in the charge which amounts to a fundamental error. In reviewing a trial court's charge to the jury, we must look to the charge in its entirety. Because this is a question of law, this Court's review is plenary.

Passarello v. Grumbine, 87 A.3d 285, 296-97 (Pa. 2014) (quoting ***Quinby v. Plumsteadville Family Practice, Inc.***, 907 A.2d 1061, 1069-70 (Pa. 2006)). A new trial will be required "if the charge as a whole is inadequate or

not clear or as a tendency to mislead or confuse rather than clarify a material issue.” **Quinby, supra** at 1069.

“Medical malpractice consists of a negligent or unskillful performance by a physician of the duties which are devolved and incumbent upon him on account of his relations with his patients, or of a want of proper care and skill in the performance of a professional act.” **Vazquez v. CHS Prof'l Practice, P.C.**, 39 A.3d 395, 397-398 (Pa.Super. 2012) (quoting **Quinby, supra** at 1070-71 (internal citations omitted)). As in negligence cases generally, in order to state a *prima facie* case, the plaintiff must demonstrate that the physician owed a duty to the patient, that he breached that duty, that the breach was the proximate cause of the harm suffered, and that damages directly resulted. **Id.** (citing **Hightower-Warren v. Silk**, 698 A.2d 52, 54 (Pa. 1997)). In most malpractice cases, other than those where the negligence is so obvious as to be within the common understanding of laypersons, a plaintiff will need a medical expert who will provide testimony meeting those elements. **Id.**

Res ipsa loquitur is an evidentiary doctrine permitting the jury to infer negligence and causation from the mere occurrence of the event and the defendant's relation to it. Our Supreme Court called it “a shorthand expression for circumstantial proof of negligence -- a rule of evidence.” **Quinby, supra** at 1071. The doctrine allows a plaintiff to “satisfy his burden of producing evidence of a defendant's negligence by proving that he has been

injured by a casualty of a sort that normally would not have occurred in the absence of the defendant's negligence." **Id.** The Court added, "[t]he inference provides reasonable evidence, in the absence of an explanation by the [d]efendants, that the accident arose from their negligence." **Id.** at 1076. The strength of the inference depends on the evidence presented, but ranges "from reasonable probability to practical certainty." **Id.** Where different conclusions can be reached, it is the jury's function to determine whether the inference is to be drawn. **Id.**

The Restatement formulation of *res ipsa loquitur* was adopted by our Supreme Court in ***Gilbert v. Korvette's Inc.***, 327 A.2d 94 (Pa. 1974), and provides:

- (1) It may be inferred that harm suffered by the plaintiff is caused by negligence of the defendant when
 - (a) the event is of a kind which ordinarily does not occur in the absence of negligence;
 - (b) other responsible causes, including the conduct of the plaintiff and third persons, are sufficiently eliminated by the evidence; and
 - (c) the indicated negligence is within the scope of the defendant's duty to the plaintiff.
- (2) It is the function of the court to determine whether the inference may reasonably be drawn by the jury, or whether it must necessarily be drawn.
- (3) It is the function of the jury to determine whether the inference is to be drawn in any case where different conclusions may reasonably be reached.

Restatement (Second) of Torts § 328D (1964).

Before a plaintiff can rely upon *res ipsa loquitur*, he must establish all three elements of § 328D(1) by producing “evidence which will permit the conclusion that it is more likely than not that her injuries were caused by the defendant's negligence.” **Id.** at § 328A. At that juncture, the trial court may look at all the evidence to determine if reasonable minds could reach different conclusions regarding the negligence of the defendant. If so, it is for the jury to determine whether to draw the inference. Our High Court also recognized in **Quinby, supra** at 1076, that “where exceptional circumstances give rise to an inference of negligence on the part of the defendant which is so strong that it cannot be rejected by reasonable individuals if not rebutted,” the court may direct a verdict in favor of plaintiff. “It is only when there is no issue of fact as to the existence of any of the conditions necessary in order to apply *res ipsa loquitur* that the court may withdraw the issue from the jury or direct the jury to draw the inference of negligence.” **Id.** As a comment to the Restatement explains:

The inference arising from a *res ipsa loquitur* case may . . . be destroyed by sufficiently conclusive evidence that it is not in reality a *res ipsa loquitur* case. If the defendant produces evidence which is so conclusive as to leave no doubt that the event was caused by some outside agency for which he was not responsible, or that it was of a kind which commonly occurs without negligence on the part of anyone and could not be avoided by the exercise of all reasonable care, he may be entitled to a directed verdict.

Restatement (Second) of Torts § 328D cmt. o (1964).

Traditionally, *res ipsa* is associated with events that are within the common knowledge of laypersons and requiring no expert testimony to establish negligence and causation. Some examples of such events offered by the commentators to the Restatement are the fall of an elevator, or the escape of gas, water, or electricity from mains or wires, or train derailments. From the nature of such events, “the conclusion is at least permissible that such things do not usually happen unless someone has been negligent.” Restatement (Second) of Torts § 328D cmt. c; **see also *Fessenden v. Robert Packer Hosp.***, 97 A.3d 1225, 1227 (Pa.Super. 2014) (holding *res ipsa loquitur* applicable where sponge left in abdomen following surgery caused abdominal abscess and necessitated the removal of gallbladder and a portion of small bowel).

In ***Jones v. Harrisburg Polyclinic Hospital***, 437 A.2d 1134 (Pa. 1981), our Supreme Court sanctioned the use of *res ipsa* in a complex medical negligence case.³ The plaintiff in ***Jones*** sustained suprascapular nerve palsy

³ In considering whether it should permit section 328D *res ipsa loquitur* to be employed in medical malpractice cases, the ***Jones*** Court noted one commentator’s explanation for the reluctance to do so:

It was early thought that this doctrine could have no application to medical science, because there are so many intangibles and uncertainties involved that the occurrence of a bad result could never justify an inference of negligence, and that all features of medical treatment could be interpreted and judged by physicians only. Gradually, however . . . , the courts in most states now

during a gynecological procedure. The Court recognized there was no fund of common knowledge from which laypersons could reasonably draw the inference of negligence, but permitted the inference when plaintiff offered uncontradicted expert medical testimony establishing that the condition did not ordinarily occur in such circumstances. **See** Restatement (Second) of Torts § 328D; **see also Hightower-Warren, supra** at 54 (plaintiff's expert's testimony that injury to left recurrent laryngeal nerve was the kind of event that does not occur in the absence of negligence under the operative conditions as described by defendant doctor and, after ruling out all other possible causes, opined to a reasonable degree of medical certainty that it occurred during the procedure at the hands of defendant, established first and second prongs of *res ipsa*). Where medical evidence established that the event would not ordinarily occur without negligence, the Court found no basis for refusing to permit a jury to draw such an inference.

Herein, as in **Jones** and **Hightower**, "there is no fund of common knowledge from which laymen can reasonably draw the inference or conclusion of negligence." **Jones, supra** at 1139. The proper way to insert

recognize that this doctrine does have its place in medical malpractice

Jones v. Harrisburg Polyclinic Hospital, 437 A.2d 1134, 1137 (Pa. 1981), quoting FALA, *The Law of Medical Malpractice in Pennsylvania*, 36 U. of Pitt. L. Rev. 203, 219 (1974).

a central line into a jugular vein, and the consequences of errant placement in the artery are not within the common knowledge of laypersons. Thus, in order to proceed on a *res ipsa* theory, Plaintiff was required to introduce expert medical testimony that the event that occurred herein, arterial cannulation, ordinarily would not have occurred absent negligence. In addition, she had to rule out other responsible causes for the event in order to meet the requirement of § 328D(1)(b). Finally, she had to establish that the negligence occurred within the scope of Defendant Zepp's duty to Mrs. Lageman.

Plaintiff contends that she met all three elements for application of the doctrine of *res ipsa*. She offered Dr. Pepple as an expert in central line placement, the use of ultrasound for central line placement, and anesthesia. The procedure at issue involved placement of a central line in the internal jugular vein in the right side of the neck. N.T. Jury Trial, 1/2-8/18, at 221. The expert rendered an opinion, to a reasonable degree of medical certainty, that Defendant Zepp's cannulation of the artery, *i.e.*, insertion of the large bore catheter seven inches into the carotid artery instead of the jugular vein, was negligent. **Id.** at 220. In his expert opinion, Defendant Zepp's placement of the catheter into the carotid artery was below the standard of care. **Id.** at 234. He opined further that it was impossible to perform the procedure as Defendant Zepp maintained that he did, execute the procedure properly, and still place the catheter seven inches into the artery. **Id.** at 225-26. Dr. Pepple was asked, "[i]f the standard of care has been properly observed, that all the

steps have not only been taken, but they were taken correctly and things were seen and evaluated correctly, is it possible that this artery would have been cannulated to that degree?" *Id.* at 238. He responded in the negative. *Id.*

Dr. Pepple also rejected the suggestion that the location of Mrs. Lageman's vein above the artery excused or explained the error. He testified that with the proper use of ultrasound, Defendant Zepp would have been aware of that fact. *Id.* at 239. Indeed, Dr. Pepple pointed to photographs in the medical record that showed the vein above the artery. *Id.* Thus, Plaintiff produced testimony that cannulation of the artery did not usually occur in the absence of negligence when the procedure was performed with manometry, as maintained by Defendant Zepp. Such testimony was sufficient to meet the first element of *res ipsa loquitur*: that arterial cannulation as occurred herein does not ordinarily happen in the absence of negligence.⁴

⁴ Despite the foregoing expert testimony, the Dissent contends that Plaintiff did not establish that arterial cannulation as occurred herein does not ordinarily happen in the absence of negligence. It maintains that Dr. Pepple's testimony was not an unequivocal statement to that effect, but merely his opinion that Dr. Zepp was negligent in inserting the central line. **See** Dissenting Opinion, at 25-26. In our view, Dr. Pepple's testimony that it is impossible to place a catheter seven inches into the artery if one **properly executes** the central line procedure as described by Dr. Zepp, is the equivalent of testimony that what occurred here does not ordinarily happen in the absence of negligence.

Our distinguished colleague faults us for rejecting contrary testimony from Dr. Zepp and his expert, Dr. Hudson, in concluding that Plaintiff's proof met the first element of *res ipsa*. However, at this juncture of the analysis, we look at the Plaintiff's proof to determine whether she established the first element.

As to the second element of *res ipsa*, eliminating other persons or causes as responsible for the harm, Defendant Zepp stated that he personally placed the central line. He added that “[t]he confirmatory steps that I took in placing the central line are the same confirmatory steps that I take when I place every central line.” **Id.** at 194-95. Defendant Zepp also ruled out the conduct of others as responsible causes of the event. He testified that Mrs. Lageman did not move, no one bumped the table, the equipment did not malfunction, the ultrasound was working properly, and the kit containing the catheter, dilator, and wire was not defective. He also downplayed the significance of Mrs. Lageman’s anatomy, explaining that the location of the jugular vein over the carotid artery was common in persons over age sixty, and that he had considerable experience placing central lines in patients belonging to that age group. Nevertheless, neither Defendant Zepp nor his expert, Dr. Hudson, offered any explanation as to how, given this scenario, the large bore catheter ended up in Mrs. Lageman’s carotid artery instead of her jugular vein.

Plaintiff also offered Dr. Pepple’s testimony regarding the likely connection between Defendant Zepp’s arterial cannulation and Mrs. Lageman’s stroke. The expert noted that Mrs. Lageman did not have atrial fibrillation or any other pre-existing conditions that predisposed her to stroke,

Furthermore, the fact that Dr. Pepple’s testimony was controverted does not mean that the inference was negated or that the instruction was improper. **See infra** at 23 (discussing effect of contrary evidence on the propriety of giving a *res ipsa* instruction).

and the MRI performed after the surgery did not disclose any alternative cause of her stroke. Furthermore, Mrs. Lageman immediately sustained a stroke of the middle cerebral artery, directly upstream from the site of the arterial cannulation. **Id.** at 235. According to the expert, the neurologist had eliminated other embolic causes of the stroke, including embolic phenomena from the heart. **Id.** at 237. It was Dr. Pepple's opinion, to a reasonable degree of medical certainty, that the strokes were caused by the catheter being inserted "eighteen centimeters into the arterial area." **Id.** Finally, the third element of *res ipsa*, that the indicated negligence was within the scope of Defendant Zepp's duty to the patient, was not disputed.

Having sustained her burden, Plaintiff contends that the court was required to give a *res ipsa* instruction. **See Quinby, supra** at 1072 ("[W]hen common knowledge or medical evidence can be established that the event would not ordinarily occur without negligence, there is no basis for refusing to draw an inference of negligence in accord with *res ipsa loquitur*"). She alleges further that the evidence to the contrary offered by Defendant Zepp did not dissolve the inference. **See Sedlitsky v. Pareso**, 582 A.2d 1314, 1316 (Pa.Super. 1990) (providing that where the plaintiff sustains his or her burden, the court must give the instruction on *res ipsa loquitur*, even if the defendant has produced a quantity of contrary evidence).

Defendant Zepp contends, as the trial court concluded, that Plaintiff failed to satisfy the first element of the Restatement for application of *res ipsa*.

He argues that Dr. Pepple conceded that the injuries that occurred herein could happen in the absence of negligence when he agreed with the proposition that even if a physician follows all of the professional practice guidelines, a favorable outcome is not guaranteed. Appellee's brief at 11 (citing N.T. Jury Trial, 1/2-8/18, at 283). The defense also points to Dr. Pepple's testimony that Mrs. Lageman's anatomy made the central line placement more difficult as evidence explaining the outcome in the absence of negligence.

We find no merit in either argument. Dr. Pepple did not concede that this injury occurs in the absence of negligence. Rather, the expert was asked whether the American Society of Anesthesiologists' practice guidelines state that they are not standards, and that following them does not guarantee any outcome. N.T. Jury Trial, 1/2-8/18, at 282-83. He answered in the affirmative, merely agreeing that the guidelines do state that. ***Id.*** This is hardly a concession by Plaintiff's expert that arterial cannulation occurs in the absence of negligence. Furthermore, we note that even Defendant Zepp dismissed the notion that the orientation of Mrs. Lageman's vein over the carotid artery was unusual or that it complicated the placement of the central line. Defendant Zepp testified that, "over fifty percent of patients over the age of sixty have the same orientation as Mrs. Lageman," and that he was quite familiar with it. ***Id.*** at 313. Dr. Pepple maintained that this anatomical presentation "just requires vigilance." ***Id.*** at 231.

Defendant Zepp contends that Plaintiff also failed to satisfy the second element for the application of *res ipsa loquitur*. He maintains that the harm herein was the stroke, and that “placing a central venous line into an artery in and of itself is not an injury.” Appellee’s brief at 13. He argues that Ms. Lageman did not sufficiently eliminate other causes of her stroke or offer competent evidence from a neurologist that her stroke was caused by the central line placement. **Id.** According to the defense, Dr. Pepple’s testimony interpreting the neurology notes in the record was “weak” and failed to rule out other possible causes of stroke. **Id.** at 15.

Res ipsa loquitur obviates the need for direct evidence that defendant’s conduct was the proximate cause of the plaintiff’s injury by allowing a plaintiff to eliminate other responsible causes of the event. **See Fessenden, supra** at 1231; **see also Quinby, supra** at 1072-73. The critical inquiry as to the second element of *res ipsa* is whether a particular defendant is the responsible cause of the event. Defendant Zepp admitted that he alone was responsible for placing the large bore catheter in Mrs. Lageman’s carotid artery rather than her jugular vein.

Dr. Pepple explained the connection between arterial cannulation and stroke as follows. When a catheter is mistakenly placed in an artery, clots form on the catheter itself, break off, and become emboli. N.T. Jury Trial, 1/2-8/18, at 223. He further explained that emboli in the carotid artery particularly, which feeds the brain, can result in a stroke and hemiplegia. **Id.**

Based upon his education, knowledge, experience, and review of the neurology records, Dr. Pepple also opined that causes other than the arterial cannulation were effectively ruled out as the cause of Mrs. Lageman's stroke.⁵ We see no indication that Defendant Zepp challenged Dr. Pepple's competency to render such an opinion in the court below. Furthermore, he was not required to be a neurologist to offer causation testimony. **See** 40 P.S. § 1303.512.

Finally, Defendant Zepp distinguishes the facts herein from those in **Quinby** and **Jones**, on the basis that neither involved complex factual disputes as to the cause of the injury. **Id.** at 15. He analogizes the situation herein to that in **Toogood v. Rogal**, 824 A.2d 1140 (Pa. 2003) (plurality), where the Supreme Court found *res ipsa* inapplicable to a paravertebral nerve block injection that allegedly punctured the plaintiff's lung. He also directs our attention to **Starr v. Allegheny Gen. Hosp.**, 451 A.2d 499 (Pa.Super 1982), where this Court affirmed the trial court's refusal to permit the plaintiff to use *res ipsa* to establish a *prima facie* medical malpractice case for neurological problems allegedly caused by the negligent repair of a skull fracture.

⁵ Dr. Hudson and Defendant Zepp both conceded that arterial cannulation increased the risk of stroke. Moreover, the defense did not offer any expert testimony positing an alternative theory for Mrs. Lageman's stroke.

The holding in **Toogood** is readily distinguishable. Conspicuously absent therein was expert medical testimony explaining the complicated medical procedure and opining that the injury did not ordinarily occur in the absence of negligence. In contrast, Plaintiff herein offered the requisite expert medical testimony linking the negligent arterial cannulation to stroke.⁶

Starr involved claims of negligent post-operative treatment following surgery to repair a depressed skull fracture, which the plaintiff claimed resulted in slurred speech, blurred vision, and neurological injuries. This Court concluded, after a thorough review of the record, that there was insufficient evidence eliminating “other responsible causes” besides the alleged negligence of the appellees, and that the injuries were not the type that would not have ordinarily occurred but for the negligence of the appellees. In the instant case, Dr. Pepple testified unequivocally herein that, to a reasonable degree of medical certainty, arterial cannulation would not have occurred in the absence of negligence in the performance of the central line placement. He also rendered the opinions that arterial cannulation “exponentially” increases the risk of stroke, and further, that there were no other causes for the stroke identified by the neurologist. N.T. Jury Trial, 1/2-8/18, at 232. Thus, **Starr** is inapposite.

⁶ **Toogood** was a plurality opinion, and the **Quinby** Court expressly declined to be bound by its reasoning.

Notably, in denying the requested *res ipsa* charge, the trial court did not cite any perceived deficiency in the connection between arterial cannulation and stroke. When Plaintiff renewed her request for the charge, the trial court maintained that it was not “obvious” that the mistake at issue could not occur in the absence of negligence.⁷ N.T. Jury Trial, 1/2-8/18, at 562. In its

⁷ The proposed point for charge on *res ipsa loquitur* consisted of the following:

You, as the jury, may infer negligence from the circumstances surrounding the injury. The Plaintiff, Mrs. Lageman, may satisfy her burden of proof by producing evidence of the Defendant’s negligence by proving that she has been injured by a cause of a sort that normally would not have occurred in the absence of negligence of the Defendant. The requirements of allowing you to infer negligence from the circumstantial evidence as well as from the direct testimony of the expert witness for the Plaintiff are these:

1. That the event is of a kind which ordinarily does not occur in the absence of negligence.
2. Other responsible causes including the conduct of the Plaintiff and third-party are sufficiently eliminated by the evidence.
3. The indicated negligence is within the Defendant’s duty to the plaintiff.

In addition to relying upon the Plaintiff’s expert testimony, if you chose to do so, you may also draw an inference of negligence from the circumstances as I have set them forth above. That is that the event usually does not occur in the absence of negligence that the conduct of the Plaintiff and other third persons are sufficiently eliminated by the evidence and the negligence is within the scope of the Defendant’s duty to the Plaintiff. It is clear from the evidence that the third requirement is not disputed as Dr. Zepp had a duty to the Plaintiff.

subsequent Rule 1925(a) opinion, the court stated, “we stand by our original ruling that the particular facts of this case would not present the type of event that is so **obvious** that a mistake can occur but for negligence happening.” Trial Court Opinion, 8/2/18, at 18 (citing N.T., 1/8/18, at 562) (emphasis added). In other words, the trial court did not see this case as a true *res ipsa* case. It described the evidence as “inconclusive as to whether the use of ultrasound does or does not totally eliminate the risk that a doctor would still puncture or cannulate the artery rather than a vein.” **Id.** at 18. It pointed to the fact that Mrs. Lageman’s anatomy made the procedure more difficult, and concluded that “the evidence did not establish that more likely than not that Plaintiff’s injuries were caused by Defendant Zepp’s negligence.” **Id.** at 19. Since “the experts shared different views,” the trial court found “the possibilities were evenly divided between negligence and its absence.” **Id.** Hence, the court concluded that “Plaintiff was not entitled to a permissible conclusion that arterial cannulation does not ordinarily happen unless someone is negligent.” **Id.** at 19.

We disagree. Even the trial court conceded that the expert testimony of Dr. Pepple “essentially stated that cannulation of the artery cannot occur unless someone is negligent.” Trial Court Opinion, 8/2/18, at 31 (quoting N.T.

Quimby v. Plumsteadville Family Practice Inc., 589 Pa. 183, 907 A.2d 1061 (2006). Restatement (Second) of Torts, § 328D.

Plaintiff’s Supplemental Requested Point for Charge, 1/8/18, at 2.

Jury Trial, 1/2-8/18, at 225-26). As the court noted, Plaintiff's counsel elicited that opinion in several ways:

Plaintiff's Counsel: Let me put it this way: If the standard of care has been properly observed, that all the steps have not only been taken, but they were taken correctly and things were seen and evaluated correctly, is it possible that this artery would have been cannulated to that degree?

Dr. Pepple: No.

N.T. Jury Trial, 1/2-8/18, at 238. One moment later, Dr. Pepple confirmed that if a physician's conduct is within the standard of care, cannulation of the artery "should not occur." *Id.* at 239. Thus, Plaintiff offered unequivocal expert testimony that, in the absence of negligence, arterial cannulation ordinarily does not occur.

In our view, expert testimony rendered to a reasonable degree of medical certainty that arterial cannulation does not ordinarily occur under the operative conditions described by Defendant Zepp in the absence of negligence is more than sufficient to "permit the conclusion that it is more likely than not that [plaintiff's] injuries were caused by the defendant's negligence." *See* Restatement (Second) of Torts § 328D cmt. e (1964). Dr. Pepple did not equivocate. In concluding that Plaintiff failed to offer evidence that it was more probable than not that negligence caused the event, and that she was "not entitled to a permissible conclusion that arterial cannulation does not ordinarily happen unless someone is negligent[,]" the court improperly

weighed the evidence offered by the defense that Defendant Zepp's conduct met the standard of care and that ultrasound is not infallible. **Id.** at 19.

As the Restatement explains, "[a] *res ipsa* charge cannot be dependent on the weight a judge might give to the testimony offered in support of an inference of negligence." Restatement (Second) of Torts § 328D(2) (1964). **See also Sedlitsky, supra** at 1316 ("Where the plaintiff sustains his or her burden, the court must give an instruction on *res ipsa loquitur*, even if the defendant has produced a quantity of contrary evidence."). Rather, "it is the jury's function to determine whether the inference is to be drawn in any case where different conclusions might reasonably be reached." **Id.** at § 328D(3). "If reasonable persons may reach different conclusion[s] regarding the negligence of the defendant, then it is for the jury to determine if the inference of negligence should be drawn. **MacNutt v. Temple University Hospital**, 932 A.2d 980, 987 (Pa.Super. 2007).

Furthermore, where, as here, "the defendant testifies that he has exercised all reasonable care," the Restatement commentators recognize that "the conclusion may still be drawn, on the basis of ordinary human experience, that he has not." Restatement (Second) of Torts § 328 D, cmt. n. (1964) (acknowledging that although the defense offers evidence that there was no negligence in inspecting elevator, the fact remains that the elevator fell).

The defense expert, Dr. Hudson, did not render an opinion that arterial cannulation could have occurred herein without any negligence.⁸ Thus, he did not directly rebut Dr. Pepple's expert testimony to that effect. Instead, Dr. Hudson opined, based upon Defendant Zepp's account, that the procedure was performed in an appropriate fashion and sequence. His opinion that the "use of ultrasound does not eliminate the risk of arterial cannulation," N.T. Jury Trial, 1/2-8/18, at 504, sidestepped the real question: whether the **proper** use of ultrasound **and** manometry, the gold standard for confirming placement of the wire in the vein, before dilating the vessel and inserting the large bore catheter, virtually eliminates the risk of arterial cannulation. The defense offered no explanation why ultrasound and manometry, properly interpreted, did not disclose to Defendant Zepp that the small catheter was in the artery rather than the vein before he threaded the wire, dilated the vessel, and inserted the large bore catheter seven inches into the artery.

We find that Plaintiff offered evidence satisfying all three elements for the application of the doctrine of *res ipsa loquitur*. At that juncture, the court was charged with determining whether reasonable minds could differ. Critically, Defendant Zepp did not offer any non-negligent explanation for the

⁸ Dr. Hudson was precluded from offering any opinion that arterial cannulations occur under similar circumstances in the absence of negligence because such an opinion was outside the scope of his expert report. However, Defendant Zepp offered lay opinion testimony, without objection, "that even in the absence of negligence, we can still have these arterial cannulations." N.T. Jury Trial, 1/2-8/18, at 314.

arterial cannulation, nor evidence that some other cause was at least equally likely the cause of Mrs. Lageman's injury that would dissolve the inference. **Cf. MacNutt, supra** (holding no inference permitted as it was disputed "with equal fairness" whether plaintiff's injury was a negligent Betadine burn or a non-negligent herpes zoster outbreak).

Nor is reliance upon *res ipsa* foreclosed because Plaintiff's medical expert also offered evidence of specific negligence. In **Hollywood Shop, Inc. v. Pa. Gas & Water Co.**, 411 A.2d 509, 512 (Pa.Super. 1979), we were persuaded by the Third Circuit's reasoning in **Weigand v. Pennsylvania Railroad Company**, 267 F.2d 281 (3rd Cir. 1959) (applying Pennsylvania law), that the trial judge erred in refusing to give a *res ipsa loquitur* instruction on such facts. In **Weigand**, the plaintiff was walking between two railroad tracks when the ground gave way and he fell into a hole five feet deep. In addition to proceeding on a *res ipsa* theory, the plaintiff offered an engineer who testified regarding the drainage conditions and supplied an explanation for the accident. The court recognized that this was a *res ipsa* case, "but one capable of some specific proof regarding the railroad's negligence." **Id.** at 284. It found it "illogical" and "unfair" to force the plaintiff to abandon one of his theories, the same rationale we subsequently adopted in **Hollywood Shop**, in holding that the plaintiff was entitled to a *res ipsa* charge.

In **D'Ardenne v. Strawbridge & Clothier, Inc.**, 712 A.2d 318 (Pa.Super. 1998), we noted that there are cases where the evidence "falls

within the grey zone,' a factual realm in which a plaintiff presents 'as specific a case of negligence as possible, yet is unable to demonstrate the **exact** cause of the accident.'" **Id.** at 324 (internal citations omitted, emphasis in original). We reasoned, "where the plaintiff's specific evidence of negligence is directly disputed by the defendant, 'it may be especially important that the plaintiff get a *res ipsa loquitur* charge if he is otherwise entitled to it.'" **Id.** (citing 33 A.L.R.2d 791, 793 ("An unsuccessful attempt to prove specific negligence on the defendant's part, or the introduction of evidence of specific negligence not clearly establishing the precise cause of injury, will not deprive the plaintiff of the benefits otherwise available under the [*res ipsa*] doctrine.")).

Recently, in **Quinby**, our Supreme Court implicitly sanctioned the plaintiff's introduction of evidence of specific negligence and concomitant reliance on the inference of negligence under *res ipsa*. The decedent, a quadriplegic, was placed on an examination table to permit a physician to remove a facial lesion. It was undisputed that, after the surgery was completed, the decedent, who was left unrestrained and unattended on the examination table, fell to the floor. According to decedent, defendants left him on his right side; according to defendants, decedent was left on his back in the center of the table.

The plaintiff offered expert medical testimony, *i.e.*, direct evidence that defendants had not complied with the standard of care, which required that decedent be safely secured on the examination table with side rails or straps,

or that someone stay with him at all times. The expert also opined that the defendants failed to provide a safe environment for the decedent while he was in the office. In addition to the foregoing direct evidence of negligence, the physician stated that, “absent extrinsic forces not present” therein, he could not envision how a quadriplegic could fall from such a table “without there being a breach of the requisite standard of care.” **Quinby, supra** at 1067.

The trial court concluded that the expert’s testimony established a *prima facie* case of negligence for submission to the jury. However, it refused the plaintiff’s request to charge the jury on *res ipsa loquitur*. Our Supreme Court held this was error. It reasoned that defendants had a duty to place decedent on the table in a manner that would insure that he did not fall, and found that there were no facts indicating that the decedent’s fall resulted from anything other than defendants’ negligence. The Court concluded that the evidence satisfied the first element of §328D because, “[s]imply put, in the absence of negligence, a quadriplegic patient such as Decedent could not fall off an examination table.” **Id.** at 202. Hence, although there was sufficient direct evidence of negligence from plaintiff’s expert to make out a *prima facie* case, our Supreme Court held that the trial court erred in also refusing to charge on *res ipsa* where all three elements had been met.⁹

⁹ The Dissent suggests that our decision in **MacNutt v. Temple University Hospital, Inc.**, 932 A.2d 980 (Pa.Super. 2007) (*en banc*), stands for the proposition that where there is adequate evidence of negligence to support a

Herein, as in **Quinby**, Plaintiff offered Dr. Pepple's expert testimony that Dr. Zepp's conduct deviated from the standard of care in certain particulars, all of which were factually disputed by Dr. Zepp. The expert also opined that what occurred here, *i.e.*, insertion of the catheter seven inches into the artery instead of the vein, is not something that occurs in the absence of negligence.¹⁰ Defendant Zepp maintained that incorrectly placing the catheter into the artery is not the same as being negligent, although he offered no explanation as to how it occurred. Since Plaintiff established all three elements of *res ipsa loquitur*, we find that the trial court abused its discretion in refusing to instruct the jury on *res ipsa*, and a new trial is warranted.

Although the foregoing issue is dispositive of this appeal, we address another issue that may recur on retrial: the propriety of permitting Defendant

cause of evidence for negligence, a plaintiff is precluded from proceeding on a theory of *res ipsa*. While that was indeed the trial court's rationale in refusing to instruct the jury on *res ipsa*, we affirmed on a different basis: that the plaintiff failed to satisfy the three elements for the application of *res ipsa* and that "it was not in reality a *res ipsa loquitur* case." **Id.** at 991-92. Notably, in **Quinby v. Plumsteadville Family Practice, Inc.**, 907 A.2d 1061 (Pa. 2006), despite the fact that direct evidence of negligence was introduced, our Supreme Court held that the trial court erred in refusing to charge the jury pursuant to *res ipsa* where all three elements were established. Our distinguished colleague's fear that the charge will be given in every malpractice case if we allow a plaintiff to seek a *res ipsa* instruction even when he has introduced direct evidence of negligence fails to appreciate how difficult it is to establish all three elements of the doctrine.

¹⁰ Dr. Pepple emphasized that this was not merely a posterior wall puncture of the jugular vein and inadvertent entry into the artery. Dr. Zepp inserted the catheter seven inches into the artery while supposedly using manometry, the gold standard for ensuring that the catheter is properly in the vein.

Zepp to conduct either a live or videotaped demonstration of proper central line placement for the jury.

The defense proposed to play for the jury a videotaped demonstration filmed the night before of Defendant Zepp performing a central line placement on a mannequin. The avowed purpose in demonstrating the procedure was to educate the jury. Plaintiff objected that the video had not been timely identified as a trial exhibit, it did not accurately depict the procedure performed on Mrs. Lageman, it was misleading and prejudicial, and, it created a "halo effect" around the defendant physician that was more prejudicial than probative. N.T. Jury Trial, 1/2-8/18, at 115. The trial court, upon being apprised that the video contained commentary, excluded the video on two grounds: 1) it had not been timely identified, and 2) the commentary was hearsay. *Id.* at 118.

Undaunted, the defense proposed that Defendant Zepp be permitted to conduct a live demonstration of the procedure on a mannequin in the courtroom. Plaintiff renewed her earlier objections. The trial court overruled the objections, finding the demonstration relevant to help the jury understand the procedure. Later, in support of its ruling at trial, the trial court observed that it was "clear to the jury that this demonstration was not illustrative of the circumstances in Plaintiff's case." Trial Court Opinion, 8/2/18, at 21. Furthermore, the court maintained that the demonstration clearly showed how the initial position of the needle was "plainly visible" with the use of

ultrasound, and suggested that this worked to Mrs. Lageman's benefit, rather than her detriment. ***Id.*** at 22.

The law is well settled that the admission of evidence rests within the discretion of the trial court and will not be overturned absent an abuse of discretion or misapplication of the law. ***Cimino v. Valley Family Medicine***, 912 A.2d 851, 853 (Pa.Super. 2006). Moreover, in order for an evidentiary ruling to constitute reversible error, it must have been harmful or prejudicial to the complaining party. ***Phillips v. Lock***, 86 A.3d 906, 920 (Pa.Super. 2014).

The trial court permitted Defendant Zepp to stand before the jury and demonstrate on a mannequin the performance of a central line placement. He narrated each step of the process, explained why he was doing it, and pointed out significant details germane to the case as he went along. The mannequin was obviously not the same as Mrs. Lageman. Accordingly, Defendant Zepp told the jury that he could not perform all steps of the procedure on the mannequin, and, at some point, he would stop and talk them through the remainder of the process. ***Id.*** at 297.

Defendant Zepp demonstrated short-axis view ultrasound, and pointed out the artery and the vein. He highlighted marks on the ultrasound screen showing the depths. He showed how, as he approached the vein, the tissues started to move. When the needle entered the vein, and as he drew back on the syringe, he showed the jury that blue blood was visible, "venous blood for

the mannequin's purposes." *Id.* at 299. He pointed out to the jury the tip of the needle, which looked like a bright white dot in the middle of dark fluid. *Id.* at 299-300. He demonstrated the use of pressure manometry to confirm the placement of the small catheter before threading the wire in the vein. Defendant Zepp stopped before inserting the dilator, as it was not a good idea to place a dilator in a mannequin. After explaining how he would thread the wire, place the large catheter in the vein, and sew up the site, he told the jury: "It's at that point I took one of these ports, and I hooked it up to the waveform measure, the transducer, and it transduced arterial rather than venous, and that gave me my confirmation." *Id.* at 302. He then related to the jury that he contacted the general surgeon on call, and asked the nurse to summon the vascular surgeon, obviously referencing what occurred with Mrs. Lageman specifically. Hence, what was presented to the jury as a generic demonstration of a central line procedure was apparently a reenactment of the procedure Defendant Zepp maintained that he actually performed on Mrs. Lageman.

We agree that, in some circumstances, demonstrative evidence depicting a medical procedure may be helpful to the jury. Such evidence may take the form of a video depicting a similar procedure, or, as here, a video or live demonstration using a mannequin, assuming that it can adequately illustrate the procedure at issue. However, in either case, such demonstrations are usually undertaken by experts. We could find no

Pennsylvania cases discussing the propriety of permitting a defendant physician to conduct such a demonstration. Furthermore, in this case, Defendant Zepp was designated as a fact witness only.

Our research revealed a New York appellate decision in ***Glusaskas v. Hutchinson***, 544 N.Y.S. 2d 323 (1st Dept. 1989), in which the issue was the propriety of the admission of a videotape prepared for trial by the defendant physician of his performance of a similar surgery on another patient three weeks before the start of trial. As herein, the film was offered ostensibly to acquaint the jury with the surgical procedure at issue. Despite the plaintiff's objection that the videotape was inflammatory and prejudicial, the court ruled that it was relevant for the purpose articulated, and not prejudicial.

On appeal, the court took a different view of the evidence. It noted that the videotape suggested that because the defendant had successfully operated on another patient, he had used the same amount of care in performing the decedent's surgery. Under New York law, "evidence of a person's habitual conduct under similar circumstances in respect to using care is inadmissible for the purpose of raising an inference that he exercised the same amount of caution on the occasion when the injury in question was sustained." ***Id.*** at 325. Furthermore, the court pointed out that the circumstances depicted on the video and those involving the decedent were not alike. Moreover, the videotaped procedure was undertaken more slowly and deliberately. The court described the impact of the video, enhanced by

the defendant's commentary, as "devastating." The court concluded that "[t]he implication is clear that [defendant doctor], the meticulous and experienced doctor that he is, having just demonstrated to the jury the enormous care which he generally takes in operating on his patients, was not apt to have been negligent in [decedent's] case." *Id.* at 326.

The court ruled that the video was inadmissible character evidence suggesting that the defendant physician used the same care on the occasion in question. The New York court added that the use of an instructional film in a medical malpractice case might be justified in some circumstances, such as where an expert is demonstrating a particular procedure. However, the videotape was a "self-serving device prepared by a defendant" to disprove his negligence, and did not constitute relevant evidence of anything. *Id.* at 326-27. Citing the significant potential for prejudice, the court held it was reversible error to admit it, and ordered a new trial.

We find Defendant Zepp's in-court demonstration of the placement of central line to be an abuse of discretion for many of the same reasons. The setting displayed Defendant Zepp's care and skill in performing a difficult procedure. As in *Glusaskas*, the demonstration suggested that Defendant Zepp used the same amount of care in performing Mrs. Lageman's central line placement as he used on the mannequin. It imbued Defendant Zepp with the aura of an expert expounding on the proper way to place a central line, and created the impression that he was incapable of negligence. It also allowed

him to simulate ultrasound and manometry results consistent with his version of the events. His commentary permitted him to segue seamlessly from what typically happens into what he alleged happened herein.

We agree with Mrs. Lageman that the demonstration by Defendant Zepp was misleading, confusing, and that it was unfairly prejudicial to her. “‘Unfair prejudice’ supporting exclusion of relevant evidence means a tendency to suggest decision on an improper basis or divert the jury’s attention away from its duty of weighing the evidence impartially.” ***Parr v. Ford Motor Co.***, 109 A.3d 682, 696 (Pa.Super. 2014) (quoting ***Commonwealth v. Wright***, 961 A.2d 119, 151 (Pa. 2008)). Since the defendant physician was portrayed as both an expert and one intimately familiar with the facts, his credibility was bolstered in the eyes of the jury. Plaintiff styled it a “halo effect,” and we find the term apt. The demonstration had some probative value but a considerably higher potential for prejudice.

The trial court brushed off notions of prejudice by insisting that the jury was aware that “the demonstration was not illustrative of the circumstances in Plaintiff’s case.” **See** Trial Court Opinion, 8/2/18, at 21. We disagree. Defendant Zepp blurred that distinction when he began to discuss the specific circumstances at issue in the case. The demonstration implied that Defendant Zepp performed the procedure with the same care and skill on Mrs. Lageman as he displayed on the mannequin. Furthermore, it suggested that despite the exercise of due care, the catheter “transduced arterial rather than venous”

in the end, creating the impression that such events occur in the absence of negligence.

Moreover, we do not agree with the trial court that Defendant Zepp's emphasis on the fact that the tip of the needle was plainly visible with ultrasound alleviated any prejudice to Plaintiff. Defendant Zepp drew the jury's attention to what he represented was the tip of the needle, and explained how it was specially machined to be visible under ultrasound. Such testimony specifically refuted Dr. Pepple's testimony that Defendant Zepp was negligent in his use of short-axis view ultrasound as he could not see the tip of the needle; it undermined the notion that he could have placed the tip of the needle in the artery rather than the vein.

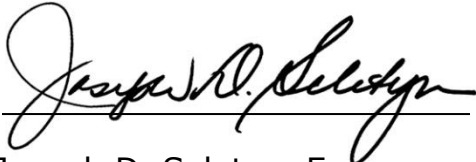
In short, the fact that the demonstration was conducted by Defendant Zepp rather than an expert witness was improper, unfairly prejudicial, and cannot be deemed harmless.

Judgment vacated. Case remanded for new trial. Jurisdiction relinquished.

Judge Olson joins the opinion.

Judge Stabile files a dissenting opinion.

Judgment Entered.

A handwritten signature in black ink, reading "Joseph D. Seletyn", written over a horizontal line.

Joseph D. Seletyn, Esq.
Prothonotary

Date: 7/20/2020