Mary C. Tuer, Individually, et al. v. Garth R. McDonald, et al.
No. 9, September Term 1997

Subsequent remedial measure (Md. Rule 5-407) — medical malpractice case — admissibility to establish feasibility if controverted and for impeachment.

IN THE COURT OF APPEALS OF MARYLAND

No. 9

September Term, 1997

MARY C. TUER,
INDIVIDUALLY et al.

v.

GARTH R. McDONALD et al.

Bell, C.J.
Eldridge
Rodowsky
Chasanow
Raker
Wilner,
*Karwacki , Robert L.
(retired, specially assigned)

JJ.

Opinion by Wilner, J.

Filed: November 7, 1997

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This is a medical malpractice action filed by Mary Tuer, the surviving spouse and personal representative of her late husband, Eugene, arising from Eugene's death at St. Joseph's Hospital on November 3, 1992. Although the hospital and several doctors were initially joined as defendants, we are concerned here only with the action against Mr. Tuer's two cardiac surgeons, Drs. McDonald and Brawley, and their professional association. A jury in the Circuit Court for Baltimore County returned a verdict for those defendants, the judgment on which was affirmed by the Court of Special Appeals. *Tuer v. McDonald*, 112 Md. App. 121, 684 A.2d 478 (1996). We granted *certiorari* to consider whether the trial court erred in excluding evidence that, after Mr. Tuer's death, the defendants changed the protocol regarding the administration of the drug Heparin to patients awaiting coronary artery bypass surgery. The court's ruling was based on Maryland Rule 5-407, which renders evidence of subsequent remedial measures inadmissible to prove negligence or culpable conduct. We shall hold that the court did not err and therefore shall affirm the judgment of the Court of Special Appeals.

FACTUAL BACKGROUND

The relevant underlying facts are not in substantial dispute. Mr. Tuer, 63, had suffered from angina pectoris for about 16 years. In September, 1992, his cardiologist, Dr. Louis Grenzer, recommended that he undergo coronary artery bypass graft (CABG) surgery and referred him to the defendants for that purpose. The surgery was initially scheduled for November 9, 1992. On October 30, however, Mr. Tuer was admitted to St. Joseph's

Hospital after suffering chest pains the night before, and the operation was rescheduled for the morning of November 2.

After a second episode of chest pain following Mr. Tuer's admission, Dr. Grenzer prescribed Atenolol, a beta blocker that reduces pressure on the heart, and Heparin, an anti-coagulant, to help stabilize the angina. The Heparin was administered intravenously throughout the weekend, and, with the other medication Mr. Tuer was receiving, it achieved its purpose; there were no further incidents of chest pains or shortness of breath. The defendants assumed responsibility for Mr. Tuer on November 1. Dr. McDonald was to perform the operation, with Dr. Brawley assisting.

The operation was scheduled to begin between 8:00 and 9:00 a.m. on November 2.[1] In accordance with the protocol then followed by the defendants and by St. Joseph's Hospital, an anesthesiologist caused the administration of Heparin to be discontinued at 5:30 that morning. That was done to allow the drug to metabolize so that Mr. Tuer would not have an anticoagulant in his blood when the surgery commenced.

Both Mr. Tuer and Dr. McDonald prepared for the 9:00 a.m. surgery. Shortly before the surgery was due to begin, however, Dr. McDonald was called to deal with an emergency involving another patient, whose condition was more critical than that of Mr. Tuer, and that required a three- to four-hour postponement of Mr. Tuer's operation. Mr. Tuer was taken

[1] The record is somewhat confusing as to the times. There is evidence indicating that the surgery was scheduled for 9:00 and other evidence stating that it was scheduled for 8:00. It may be that the earlier time refers to when Mr. Tuer was to be taken to the operating room and prepared for the surgery, with the operation actually to commence at 9:00.

to the coronary surgery unit (CSU) in the meanwhile, where he could be closely monitored. Dr. McDonald considered restarting the Heparin but decided not to do so.

Dr. McDonald next saw Mr. Tuer just after 1:00 p.m., when he was summoned to the CSU and found his patient short of breath and with arrhythmia and low blood pressure. Quickly thereafter, Mr. Tuer went into cardiac arrest. Appropriate resuscitation efforts, including some seven hours of surgery, were undertaken, and, although Mr. Tuer survived the operation, he died the next day. Following Mr. Tuer's death — apparently because of it — the defendants and St. Joseph's Hospital changed the protocol with respect to discontinuing Heparin for patients with unstable angina.[2] Under the new protocol, Heparin is continued until the patient is taken into the operating room; had that protocol been in effect on November 2, 1992, the Heparin would not have been discontinued at 5:30 a.m., and no issue would have arisen as to restarting it.

The dispute over whether evidence of the new protocol was admissible arose several times during the trial, in different, though related, contexts. As a preliminary matter, it is important to note that, at no time during the trial did the plaintiff complain about the initial decision to discontinue the Heparin at 5:30 in anticipation of the operation commencing at 8:00 or 9:00 that morning; nor did she complain about Dr. McDonald's postponing the surgery in order to deal with the other, more critically ill patient. Her expert witnesses

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[2] Two of the testifying doctors described stable angina as a pattern of chest pain that predictable — it will occur following a certain level of exercise or emotional distress, for example, and will be relieved when the exercise or distress stops or medication is taken. Unstable angina includes a sudden development of chest pain or a change in a pattern.

confirmed that neither of those decisions constituted a departure from the applicable standard of care. With respect to the subsequent remedial measure issue, her sole complaint concerned Dr. McDonald's (or Dr. Brawley's) decision not to restart the Heparin once the decision was made to postpone the surgery, and the evidence produced by her focused on that decision. The experts' point was that, while Mr. Tuer would still have some benefit from the Heparin as it metabolized from 5:30 to 8:00 or 9:00, he would have no benefit from it thereafter, and that left him vulnerable. It was their position that Mr. Tuer's unstable angina returned that morning and ultimately led to his cardiac arrest and death.

The admissibility of the change in protocol first came before the court through the defendants' motion *in limine* to exclude any reference to the change in practice. At a hearing on that motion, the plaintiff took alternative positions with respect to the admissibility of the evidence. First, she contended that, because the defendants were claiming that the protocol in place on November 2 was a correct one, consistent with the applicable standard of care, the new protocol was not really a remedial measure and, for that reason, did not fall under the Rule. The court rejected that approach, concluding that a defendant did not have to admit wrongdoing in order for a subsequent change to be regarded as remedial. The plaintiff has not pressed that argument in this appeal. She also asserted that the evidence would be admissible to show that restarting the Heparin was "feasible," to which the court responded that it would allow the evidence for that purpose if the feasibility of restarting the Heparin

was denied by the defendants.[3] The defendants made clear that they did not intend to assert that the new protocol was not feasible and that they had no problem with the plaintiff asking Dr. McDonald whether Heparin could have been restarted. The court granted the motion subject to revisiting it "because of the way the trial goes."

The Heparin issue first arose at trial when the plaintiff called Dr. McDonald as an adverse witness. In direct examination, Dr. McDonald stated that he approved discontinuation of the Heparin at 5:30 so that it would metabolize before the scheduled surgery. That decision, he said, was taken to minimize the risk attendant to an inadvertent puncture of the carotid artery by the anesthesiologist.

Dr. McDonald explained that, in the initial stage of CABG surgery, the anesthesiologist inserts a catheter into the internal jugular vein in the neck and that the procedure for doing so involves, first, puncturing the vein with a needle and then, after inserting a guide wire, making an incision and inserting the catheter. He pointed out that the jugular vein lies in close proximity to the carotid artery, which is a high pressure vessel that brings blood from the heart to the brain, and that, in his experience, there was a 5% to 10% incidence of the anesthesiologist inadvertently puncturing the carotid artery when attempting to insert the needle into the jugular vein. A puncture of the carotid artery, he said, could

[3] As noted, under the new protocol the issue of restarting the Heparin would not have arisen, as the drug would not have been discontinued. The feasibility question related to the defendants' position that it was inadvisable for a patient to have Heparin in the bloodstream at the commencement of CABG surgery. That was the reason the Heparin was both discontinued and not restarted. The plaintiff's position was that Mr. Tuer could safely have undergone the CABG surgery with Heparin in his blood, and she wanted to use the new protocol to establish that fact.

produce a serious bleeding problem, and it was for that reason that the protocol called for patients not to have an anticoagulant in their blood when the surgery commenced. He first said that he was unaware of whether any fatalities had resulted at St. Joseph's Hospital or in his particular practice from such an inadvertent puncture, but he did recall that they had had "some serious consequences from inadvertent carotid artery puncture in our hospital." In later testimony, he recounted that he was "very familiar with fatalities in the literature from inadvertent carotid puncture in patients who are having cardiac surgery." In response to a specific question, he confirmed that "the procedure in place on November the 2nd, 1992, at St. Joseph Hospital, for coronary artery bypass patients on Heparin therapy was to discontinue the Heparin three to four hours prior to the time of the surgery . . ." and that that practice and procedure "was required by the standard of care applicable at that time." He explained: "[t]hat is what we did at our hospital."

Following that answer, the plaintiff attempted to set up a basis for inquiring as to the subsequent change. He elicited from Dr. McDonald that there were no circumstances prior to November 2, 1992 in Dr. McDonald's practice at St. Joseph's Hospital in which a patient with Mr. Tuer's clinical profile — unstable angina stabilized in the hospital with Heparin therapy pending coronary bypass surgery — would not have had their Heparin discontinued three to four hours prior to their surgery. Dr. McDonald confirmed that "that was our policy at the time. It would have been a departure, and sitting here this morning I just can't think of a reason off hand why that could be." He added that he had considered restarting the Heparin once the surgery was postponed and elected not to do so because he did not want

the drug in Mr. Tuer's blood when the surgery commenced. Counsel asked whether it was "feasible to restart Heparin for Mr. Tuer after your decision to postpone the surgery," but the court sustained an objection to that question. Counsel then inquired whether it was Dr. McDonald's contention "that it would have been *unsafe* to restart Mr. Tuer's Heparin after your decision to postpone his surgery," (emphasis added) to which the witness responded in the affirmative, for the reason already given.

With that answer, plaintiff urged that she was entitled to ask about the change in protocol for impeachment purposes — presumably to show that it is *not* unsafe to bring a patient into surgery with Heparin in his or her system. The court again rejected that argument, distinguishing between the situation presented, of the doctor changing his mind about the relative safety of the protocol, apparently as a result of the unfortunate death of Mr. Tuer, and the case of the doctor not really believing at the time that it would have been unsafe to restart the Heparin. The latter, the court concluded, would constitute grounds for impeachment, but not the former: "In order to impeach his opinion that it was unsafe on November the 1st, 1992, there need be evidence that he didn't think it was unsafe on November the 1st, 1992, not what he thought in January or February of 1993."

On cross-examination, Dr. McDonald noted that, had Mr. Tuer redeveloped chest pains, indicative of an episode of unstable angina, he would have restarted the Heparin, but that no such episode occurred until about 1:00, at which point Mr. Tuer was given a large dose of nitroglycerine. He also pointed out that Heparin is, in fact, used routinely *during* CABG surgery, to prevent clotting as the blood passes through a heart-lung machine. The

doctor explained that the Heparin is introduced *after* the initial incision is made, just before the patient is hooked up to the heart-lung machine.[4] That occurs, he said, from 15 to 30 minutes after the initial puncturing of the internal jugular vein by the anesthesiologist.

In contradiction of Dr. McDonald's views, the plaintiff presented evidence from Dr. Gottdiener, a cardiologist, that, although neither the decision to discontinue Heparin at 5:30 in anticipation of surgery at 9:00 nor the decision to postpone the surgery in order to deal with the more critically ill patient constituted a departure from the applicable standard of care, the standard of care did require the reinstitution of Heparin in order to manage what Dr. Gottdiener believed to be Mr. Tuer's existing unstable angina and that the failure to resume that therapy after the postponement amounted to a deviation from that standard of care.[5]

That view was expressed as well by Dr. Tice, another of the plaintiff's expert witnesses. In deposition testimony read to the jury, Dr. Tice stated that the half-life of

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[4] More precisely, Dr. McDonald said that, normally, the internal mammary artery, which runs behind the breast bone, is used for the bypass and that the Heparin is reintroduced once that artery is "harvested." In situations, such as Mr. Tuer's, where that artery is not used, the Heparin is not reintroduced until the pipes coming from the heart-lung machine are sutured. Dr. McDonald and other expert witnesses added that, when the surgery is completed, a coagulant (Protamine) is introduced to counter the effect of the Heparin. At that point, the danger from clots has been lessened.

[5] Although the point is not stressed in this appeal, the plaintiff's experts expressed the opinion that Mr. Tuer's angina did, indeed, become unstable that morning and that the Heparin should have been restarted to deal with that condition. They drew that conclusion largely from the fact that, while waiting in the CSU, Mr. Tuer had become nauseous and had vomited, which they saw as a symptom of ischemia (insufficiency of oxygen supply to the heart). The defendants and their experts attributed the nausea to the morphine sulfate that Mr. Tuer received that morning. Dr. Brawley prescribed Compazine to counteract the nausea and, in the defendants' opinion, that sufficed to deal with the problem.

Heparin was one hour and that it loses its effect two to two-and-a-half hours after it is discontinued. In his view, the applicable standard of care required that the Heparin be restarted when the operation was postponed and that it be discontinued again an hour before the rescheduled surgery was due to commence. He opined that Dr. Brawley, whom he regarded as the physician in charge, deviated from the standard by not restarting the Heparin.

The defendants produced three expert witnesses who supported Dr. McDonald's decision not to restart the Heparin. They each stated that, because Mr. Tuer's unstable angina had been stabilized over the weekend, because he did not appear to be suffering from ischemia, and because the other medication he was taking would suffice, it was not necessary to restart the Heparin. They also offered a number of reasons why it would have been inappropriate for Mr. Tuer to have Heparin in his blood at the commencement of the surgery. Apart from the problem of an inadvertent puncture of the carotid artery by the anesthesiologist, they noted the value of curtailing bleeding in the area of the actual surgery. They confirmed that surgeons like to use the mammary artery as the bypass vessel and that it was desirable to avoid unnecessary bleeding when attempting to "harvest" that artery. They each opined that a reasonably competent cardiovascular surgeon would not have restarted the Heparin in anticipation of a three- to four-hour delay in the surgery. Dr. Fortuin, in particular, recounted what he regarded as "logistical" difficulties in recommencing the drug. He stated that, to get the benefit of the Heparin, a large dose would have had to be administered, which would take several hours to dissipate, and expressed concern over the "roller coaster" effect of stopping and starting the drug or not knowing

when to stop it in order to allow the drug to metabolize prior to surgery. Seizing on the statement that it would be logistically difficult to have restarted the Heparin, the plaintiff inquired of Dr. Fortuin on cross-examination whether it would have been "feasible" to restart the drug, but the court, as it did when that question was put to Dr. McDonald, sustained an objection.

DISCUSSION

Prior to the adoption of Maryland Rule 5-407, Maryland followed the common law with respect to the admissibility of subsequent remedial measures. We first adopted that law principally as articulated by the Supreme Court in *Columbia v. Hawthorne*, 144 U.S. 202, 12 S. Ct. 591, 36 L. Ed. 405 (1892) — a pre-workers' compensation era negligence action by an employee against his employer for injuries sustained when a pulley fell on him. The employer, who lost in a territorial trial court, complained about the allowance of evidence regarding measures undertaken after the accident to make the pulley more secure.

The Supreme Court held that the evidence was inadmissible and reversed. The Court regarded it as "settled" that "the evidence is incompetent, because the taking of such precautions against the future is not to be construed as an admission of responsibility for the past, has no legitimate tendency to prove that the defendant had been negligent before the accident happened, and is calculated to distract the minds of the jury from the real issue, and to create a prejudice against the defendant." *Columbia*, 144 U.S. at 207, 12 S. Ct. at 593, 36 L. Ed. at 406. In this regard, the Court quoted with approval from *Morse v. Railway Co.*,

16 N.W. 358, 359 (Minn. 1883):

> "[E]vidence of this kind ought not to be admitted under any circumstances . . . upon the broader ground that such acts afford no legitimate basis for construing such an act as an admission of previous neglect of duty. A person may have exercised all the care which the law required, and yet, in the light of his new experience, after an unexpected accident has occurred, and as a measure of extreme caution, he may adopt additional safeguards. The more careful a person is, the more regard he has for the lives of others, the more likely he would be to do so; and it would seem unjust that he could not do so without being liable to have such acts construed as an admission of prior negligence. We think such a rule puts an unfair interpretation upon human conduct, and virtually holds out an inducement for continued negligence."

144 U.S. at 208, 12 S. Ct. at 593, 36 L. Ed. at 407.

The introduction of this principle into Maryland law came in *Ziehm v. United Electric L.& P. Co.*, 104 Md. 48, 64 A. 61 (1906). *Ziehm* was a negligence action against an electric utility by a telephone lineman who was injured when, in the course of repairing a malfunction on a telephone line, he came into contact with uninsulated electric wires. His claim was that the wires were strung too close to the telephone pole. The principal question on appeal was whether the trial court erred in finding the plaintiff to be contributorily negligent as a matter of law, but a subsidiary issue was whether the court improperly excluded evidence that the electric wires had been relocated following the accident. Our succinct response to that complaint was that the ruling was correct because "[t]he change of the location of the wires after the accident, could not affect the responsibility of the appellee, at the date of the accident." *Ziehm*, 104 Md. at 61, 64 A. at 63. For that

proposition, we cited *Columbia v. Hawthorne* and two earlier Maryland cases that had nothing to do with subsequent remedial measures but did exclude comparative evidence on relevance grounds.[6]

As indicated, the Supreme Court, in *Columbia*, held the subsequent remedial measure inadmissible both as an *admission* of negligence and on more general relevance grounds, as "having no legitimate tendency to prove that the defendant had been negligent before the accident . . . ." The summary statement by this Court in *Ziehm* would seem to indicate our concurrence with that view. In several subsequent cases, however, we departed from that approach and began to view the exclusionary rule in more restrictive terms, as precluding subsequent conduct evidence only when offered as an *admission* of liability or negligence on the part of the defendant but allowing it as independent direct or circumstantial evidence of negligence. We see this first in *American Paving & Con. Co. v. Davis*, 127 Md. 477, 96 A. 623 (1916). The plaintiff's house was damaged by a fire allegedly caused by sparks emitted from the defendant's steam shovel. The defendant excepted to testimony that, after

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[6] The two Maryland cases were *Baltimore and Yorktown Turnpike Road v. Crowther*, 63 Md. 558, 1 A. 279 (1885) and *Wood v. Heiges*, 83 Md. 257, 34 A. 872 (1896). *Crowther* was an action against a turnpike company for negligently constructing or maintaining a road in such manner that the paved portion was considerably higher than the unpaved shoulder, leaving a deep rut at the edge of the road. We held evidence that other roads were similarly constructed to be inadmissible, declaring that "[i]t was the duty of the jury to decide whether this particular road was safe for travel by evidence of its actual condition, and not by comparing it with the condition of other roads ." 63 Md. at 571, 1 A. at 283. In *Wood v. Heiges*, a foundry employee injured on the job sued his employer, complaining about the safety of a procedure and piece of machinery that caused his injury. In conformance with the turnpike case, we held evidence regarding machines and procedures used by other companies to be inadmissible: "The issue was whether the particular machinery was proper and suitable; and that was to be determined by its actual condition, and not by comparing it with other machines." 83 Md. at 271, 34 A. at 875.

the fire, it installed a wire screen over the smokestack of the steam shovel and that the sparks escaping from the machine thereafter were much smaller. We concluded that the evidence was admissible "not only for the purpose of showing that the fire was caused by the sparks from the steam shovel, but also as tending to show negligence on the part of the defendant." 127 Md. at 483, 96 A. at 626. We noted that "[t]he mere fact that the defendant put a wire hood or screen over the smokestack would not be admissible for the purpose of establishing an admission of liability by the defendant [citing *Ziehm* and *Columbia*] but evidence of the effect of the screen was admissible as reflecting upon the question whether the defendant had exercised proper care and caution to avoid injury to the plaintiff's property." 127 Md. at 483-84, 96 A. at 626.

In *State v. Consolidated Gas Co.*, 159 Md. 138, 150 A. 452 (1930) and *Long v. Joestlein*, 193 Md. 211, 66 A.2d 407 (1949), we seemed to return to the broader view of the exclusionary rule. *State v. Consolidated Gas Co.* was a virtual replay of *Ziehm*. The plaintiff, whose husband was electrocuted when he came into contact with the defendant's wires, attempted to inquire what the defendant had done to the line after the accident. We affirmed the exclusion of that evidence, quoting from *Ziehm* that the change in location of the wire "'could not affect the responsibility of the appellee at the date of the accident.'" 159 Md. at 144, 150 A. at 455. In *Long*, a domestic servant who sued her employer when she tripped on a landing step in his home, complained that the court excluded evidence that the employer had painted the landing after the accident. We first held that the evidence was "not admissible as an admission of liability" but added that it would also "be immaterial,

because such action by defendant could not affect his liability at the time of the accident." 193 Md. at 220, 66 A.2d at 411.

In *Blanco v. J.C. Penney*, 251 Md. 707, 248 A.2d 645 (1967), we retreated to the more restrictive approach. *Blanco* was a negligence action by a store customer who was injured when she walked into a plate glass panel that, to her, looked like an open door. On appeal from a directed verdict for the defendant, the plaintiff complained about the exclusion of evidence that, in replacing the shattered panel following the accident, the defendant pasted decals on the glass. The purpose of the evidence, she averred, was not to establish "an admission of liability" on the defendant's part but rather to show the effect of the decals "as reflecting upon the question whether Penney had exercised proper care and caution to avoid causing injuries such as those sustained by the appellant." 251 Md. at 709, 248 A.2d at 646-47. We agreed with her and reversed, quoting extensively from *American Paving & Contracting Co. v. Davis, supra*, 127 Md. at 483-84, 96 A. at 626, and holding that, although the evidence would not be allowed to show an *admission* of negligence or liability, it was admissible as reflecting on whether the defendant had exercised proper care to avoid injury to the plaintiff.

Our last application and articulation of the common law rule came in *Wilson v. Morris*, 317 Md. 284, 296, 563 A.2d 392, 397 (1989). The plaintiff, a disabled person in the defendant's care, was left alone in a wheelchair in a waiting area, in accordance with the defendant's then-current monitoring policy. One of her complaints on appeal, in which we found merit, was that the trial court excluded evidence of a change in that policy following

her accident. Quoting from 5 LYNN MCLAIN, MARYLAND PRACTICE: MARYLAND EVIDENCE § 407.1, at 407 (1987, 1989 Supp.), we stated the general rule to be that "'when remedial measures are taken following an accident, injury, or event for the purpose of making the event less likely to recur, evidence of those remedial measures is not admissible as an *admission* of negligence, culpable conduct, or liability in connection with the event'" (emphasis by the Court). 317 Md. at 296, 563 A.2d at 397. It was clear, we said, "that subsequent conduct evidence may not be received as *admissions* of negligence or culpability" (emphasis by the Court). 317 Md. at 297, 563 A.2d at 398. Citing *American Paving & Con. Co.* and *Blanco*, we noted, however, that, as an "exception" to that general rule, Maryland common law allowed evidence of subsequent remedial measures to be admitted as "'circumstantial proof that the applicable standard of care had not been met at the time of the occurrence in question.'" 317 Md. at 298, 463 A.2d at 398, quoting again from MCLAIN, *supra*, at 410.[7] The *Wilson* Court observed, in a footnote, that "the general common law rule" excluding evidence of subsequent remedial measures had been codified in Federal Rule of Evidence 407, that the question of whether Maryland should adopt the substance of that rule had not yet been determined, and that the issue was one for initial consideration by the

[7] To the extent that the Court viewed the exclusionary rule narrowly, as precluding subsequent conduct evidence only when offered to show an *admission* of culpability on the part of the defendant, the allowance of such evidence to establish a standard of care or a deviation from an applicable standard would not really be an "exception" to the rule. Indeed, in that context, it would have been more appropriate to view the exclusionary rule as an exception to the more general rule declaring such evidence admissible, which is what may have prompted the complaint that, as articulated and applied by the Court, the "exception" swallowed the "rule."

Court's Standing Committee on Rules of Practice and Procedure, which was then in the process of drafting a Code of Evidence for presentation to this Court. 317 Md. at 296 n.8, 563 A.2d at 398 n.8.

The Rules Committee did, indeed, consider the issue and eventually recommended that this Court adopt the substance of Fed. R. Evid. 407 which, effective July 1, 1994, we did, in the form of Maryland Rule 5-407. That rule provides as follows:

> "**(a) In General.** — When, after an event, measures are taken which, if in effect at the time of the event, would have made the event less likely to occur, evidence of the subsequent measures is not admissible to prove negligence or culpable conduct in connection with the event.
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> **(b) Admissibility for Other Purposes.** — This Rule does not require the exclusion of evidence of subsequent remedial measures when offered for another purpose, such as proving ownership, control, or feasibility of precautionary measures, if controverted, or impeachment."

In recommending that Rule to this Court, the Rules Committee made clear its view that the proposed rule would, in effect, overrule the "standard of care exception" applied in *Wilson* and some of the earlier cases. The Reporter's Note following the proposed rule stated:

> "The most recent statement of Maryland law on the subject of subsequent remedial measures is Wilson v. Morris, 317 Md. 284 (1989), wherein the Court of Appeals held that evidence of subsequent remedial measures is 'not admissible as an admission of negligence or culpable conduct' but is admissible as 'circumstantial proof that the applicable standard of care had not been met at the time of the accident or other occurrence in question.' 317 Md. at 301.

> The Committee views the Wilson decision, with its suggestion that Rule 407 evidence is admissible to define the scope of a duty ('standard of care'), as creating an ambiguity. The Committee believes that Rule 407 does not permit the admission of such evidence for that purpose, and that a 'standard of care' exception would swallow the Rule."

20 Md. Reg. pt. II at P-9 (July 23, 1993) (issue no. 15).

The Federal Advisory Committee on Rules of Evidence, which drafted Fed. R. Evid. 407, offered two justifications for excluding evidence of subsequent remedial measures to prove culpability: first, that the subsequent conduct "is not in fact an admission, since the conduct is equally consistent with injury by mere accident or through contributory negligence," and second, the "social policy of encouraging people to take, or at least not discouraging them from taking, steps in furtherance of added safety." *Rules of Evidence for United States Courts and Magistrates*, 56 F.R.D. 183, 225-26 (1973). Although some commentators have since questioned the efficacy of the "social policy" argument (*see* 1 SALTZBURG, MARTIN, AND CAPRA, FEDERAL RULES OF EVIDENCE MANUAL 481 (6th ed. 1994); 2 MUELLER AND KIRKPATRICK, FEDERAL EVIDENCE § 127 (2d ed. 1994); 2 *Weinstein's Federal Evidence* § 407.03[3] (Matthew Bender 2d ed. 1997)), it was significant to the Advisory Committee and, together with the relevance argument, was sufficiently persuasive to cause the Federal rule to be proposed by the Supreme Court and adopted by Congress.[8]

[8] Criticism of the "social policy" argument centers on the notion that an exclusionary rule is not necessary to impel corrective action — that a defendant who is able to do so would likely take corrective action even in the absence of such a rule. Professor Saltzburg offers a modified social

These grounds and the commentary on them were considered by both the Rules Committee and this Court in deciding whether to adopt an analog to Fed. R. Evid. 407 and thereby modify the existing Maryland common law, as most recently applied in *Wilson v. Morris*. The discussion at the open hearing held by this Court on proposed Rule 5-407 documents our acquiescence in the view of the Rules Committee that evidence of subsequent remedial measures should no longer be admissible to show either what the applicable standard of care was at the time of the occurrence or a deviation from that standard of care. In that regard, the exclusionary aspect of the Rule is broader than the common law it replaced. Subject to other possible objections, that kind of evidence may be admitted for some other purpose within the ambit of § (b) of the Rule, but not to prove fault.

The plaintiff offers two grounds for the admissibility of the change in procedure adopted after her husband's death, both hinging on Dr. McDonald's testimony and that of his expert witnesses regarding the risk associated with taking patients into CABG surgery

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policy argument in favor of the rule — that people who take post-accident safety measures are doing exactly what good citizens should do and that, so long as the relevance of those measures is not great, which he does not believe it is, courts should not sanction procedures which appear to punish praiseworthy behavior. LEMPERT & SALTZBURG, A MODERN APPROACH TO EVIDENCE 194 (2d ed. 1982). He and his co-authors Martin and Capra see far more force in the relevance basis of the rule, urging that "subsequent remedial measures are of marginal relevance in assessing the defendant's culpability or fault, and that this marginal relevance is almost always substantially outweighed by the risk of jury confusion created by the introduction of a subsequent remedial measure." SALTZBURG, MARTIN, AND CAPRA, *supra*, at 482. Professor McLain, who served as Special Reporter to the Rules Committee in the development of the Maryland Rules of Evidence, seems to concur in that last view, noting that subsequent remedial measure evidence "has *low probative value* with regard to negligence or fault" and that, to the extent it is not probative of fault but nonetheless suggests an awareness by the defendant that it had not met the standard of due care, "there is also the likelihood of *confusion of the jury* and *unfair prejudice*." (Emphasis in original). LYNN MCLAIN, MARYLAND RULES OF EVIDENCE § 2,407.5 (1994 ed.).

with Heparin in their blood. That testimony, she urges, effectively controverted the feasibility of protecting patients with Heparin until taken into the operating room, which she was then entitled to establish through evidence of the revised protocol. That evidence was also admissible, she claims, to impeach Dr. McDonald's statement that restarting the drug would have been "unsafe." Although these arguments overlap, we shall deal with them separately.

Feasibility

Rule 5-407(b) exempts subsequent remedial measure evidence from the exclusionary provision of § (a) when it is offered to prove feasibility, if feasibility has been controverted. That raises two questions: what is meant by "feasibility" and was feasibility, in fact, controverted? These two questions also tend to overlap and are often dealt with together; whether a defendant has controverted feasibility may well depend on how one defines the term.

The exception allowing subsequent conduct evidence to show feasibility has been a troublesome one, especially in negligence cases, for, as Judge Weinstein points out, "negligence and feasibility [are] often indistinct issues. The feasibility of a precaution may bear on whether the defendant was negligent not to have taken the precaution sooner." 2 *Weinstein's Federal Evidence, supra*, § 407.04[3]. The Court of Special Appeals noted that two seemingly divergent approaches have been taken in construing the feasibility exception. *Tuer v. McDonald, supra*, 112 Md. App. at 129, 684 A.2d at 482. Some courts have

construed the word narrowly, disallowing evidence of subsequent remedial measures under the feasibility exception unless the defendant has essentially contended that the measures were not physically, technologically, or economically possible under the circumstances then pertaining. Other courts have swept into the concept of feasibility a somewhat broader spectrum of motives and explanations for not having adopted the remedial measure earlier, the effect of which is to circumscribe the exclusionary provision.

Courts in the first camp have concluded that feasibility is not controverted — and thus subsequent remedial evidence is not admissible under the Rule — when a defendant contends that the design or practice complained of was chosen because of its perceived comparative advantage over the alternative design or practice *(Flaminio v. Honda Motor Co., Ltd.*, 733 F.2d 463, 468 (7th Cir. 1984); *Gauthier v. AMF, Inc.*, 788 F.2d 634, 638 (9th Cir. 1986); *Hardy v. Chemetron Corp.*, 870 F.2d 1007, 1011 (5th Cir. 1989); *Bush v. Michelin Tire Corp.*, 963 F. Supp. 1436 (W.D. Ky. 1996); *Hallmark v. Allied Products Corp.*, 646 P.2d 319 (Ariz. App. 1982); or when the defendant merely asserts that the instructions or warnings given with a product were acceptable or adequate and does not suggest that additional or different instructions or warnings could not have been given (*Mills v. Beech Aircraft Corp., Inc.*, 886 F.2d 758 (5th Cir. 1989); *Werner v. Upjohn Co., Inc.*, 628 F.2d 848 (4th Cir. 1980); *Fish v. Georgia-Pacific Corp.*, 779 F.2d 836 (2d Cir. 1985); *Wetherill v. University of Chicago*, 565 F. Supp. 1553 (N.D. Ill. 1983); *In re Joine E. Dist. & So. Dist. Asbestos Lit.*, 995 F.2d 343 (2d Cir. 1993)); or when the defendant urges that the alternative would not have been effective to prevent the kind of accident that occurred (*Brookshire*

Bros., Inc. v. Lewis, 911 S.W.2d 791 (Tex. App. 1995); *Wick v. Clark County*, 936 P.2d 1201 (Wash. App. 1997)).

Courts announcing a more expansive view have concluded that "feasible" means more than that which is merely possible, but includes that which is capable of being utilized successfully. In *Anderson v. Malloy*, 700 F.2d 1208 (8th Cir. 1983), for example, a motel guest who was raped in her room and who sued the motel for failure to provide safe lodging, offered evidence that, after the event, the motel installed peepholes in the doors to the rooms. The appellate court held that the evidence was admissible in light of the defendant's testimony that it had considered installing peepholes earlier but decided not to do so because (1) there were already windows next to the solid door allowing a guest to look out, and (2) based on the advice of the local police chief, peepholes would give a false sense of security. Although the motel, for obvious reasons, never suggested that the installation of peepholes was not possible, the court, over a strident dissent, concluded that, by inferring that the installation of peepholes would create a lesser level of security, the defendant had "controverted the feasibility of the installation of these devices." *Id.* at 1214. *See also Kenny v. Southeastern Pennsylvania Transp.*, 581 F.2d 351, 356 (3d Cir. 1978) ("when the defendant opens up the issue by claiming that all reasonable care was being exercised at the time, then the plaintiff may attack that contention by showing later repairs which are inconsistent with it"); *Reese v. Mercury Marine Div. of Brunswick Corp.*, 793 F.2d 1416 (5th Cir. 1986) (evidence of new warning in manufacturer's revised manual admissible in light of defense that such warning by manufacturer, as opposed to dealer, would not have been

effective to alert ultimate customer to potential danger); *Ray v. American Nat. Red Cross*, 696 A.2d 399 (D.C. App. 1997) (evidence of subsequent measure admissible when defendant asserted that it would not have been effective and would have had detrimental effect); *City of Indianapolis v. Swanson*, 439 N.E.2d 638 (Ind. App. 1982) (testimony that remedial measure would have been ineffective placed feasibility into issue); *Kurz v. Dinklage Feed Yard, Inc.*, 286 N.W.2d 257 (Neb. 1979) (testimony that remedial measure "would not have been effective" put feasibility into issue).

The apparent divergence indicated by these cases may, at least to some extent, be less of a doctrinal division than a recognition that the concept of practicability is implicit in the notion of feasibility and allows some leeway in the application of the rule. Part of the problem is that dictionaries, which are often resorted to by the courts, contain several definitions of the word "feasible." WEBSTER'S NEW UNIVERSAL UNABRIDGED DICTIONARY (2d ed. 1983), for example, contains three definitions: (1) "that may be done, performed, executed, or effected; practicable; possible"; (2) "likely; reasonable; probable; as, a *feasible* story"; (3) "that may be used or dealt with successfully; as, land *feasible* for cultivation." Each of those definitions embody, to some extent, the concept of practicability. Some courts have tended to follow the first definition and have thus articulated the notion of feasibility in terms of that which physically, technologically, or economically is capable of being done; others, like the Eighth Circuit in *Anderson v. Malloy*, have latched on to the third definition, which brings more into play the concepts of value, effectiveness, and overall utility.

To some extent, the problem may be driven by special considerations arising from

application of the rule to product liability cases, especially those grounded on strict liability. When the plaintiff is obliged to establish that there were feasible alternatives to the design, manufacturing method, or warnings used by the defendant, he or she necessarily injects the question of feasibility into the case, to which the defendant ordinarily responds by showing why those alternatives were not used. As Saltzburg, Martin, and Capra point out, if a remedial measure has, in fact, been taken that could have been taken earlier, the defendant is not likely to claim that the measure was not possible or practicable, and, indeed, defendants often are willing to stipulate to feasibility in order to avoid having the subsequent remedial evidence admitted. 1 SALTZBURG, MARTIN AND CAPRA, *supra*, 486. The issue arises when the defendant offers some other explanation for not putting the measure into effect sooner — often a judgment call as to comparative value or a trade-off between cost and benefit or between competing benefits — and the plaintiff characterizes that explanation as putting feasibility into issue. *See Rahmig v. Mosley Machinery Co.*, 412 N.W.2d 56 (Neb. 1987).[9] To the extent there can be said to be a doctrinal split among the courts, it seems to center on whether that kind of judgment call, which is modified later, suffices to allow the challenged evidence to be admitted.

That is essentially what occurred in this case. At no time did Dr. McDonald or any

[9] Wright and Graham note that many of the cases in which the feasibility exception has been invoked are product liability cases, and that "it may be that courts had intuitive appreciation of the inappropriateness of the traditional rule in that context and were using the 'exception' as an alternative to holding the rule inapplicable in strict liability." 23 WRIGHT AND GRAHAM, FEDERAL PRACTICE AND PROCEDURE § 5288 (footnote omitted) (1980 and 1997 Supp.).

of his expert witnesses suggest that the Heparin could not have been restarted following the postponement of Mr. Tuer's surgery. Indeed, they indicated quite the opposite; Dr. McDonald, in fact, made clear that, had Mr. Tuer exhibited signs of renewed unstable angina, he would have restarted the Heparin. The only fair reading of his testimony and that of his supporting experts is that the protocol then in effect was the product of a professional judgment call that the risk to Mr. Tuer of having CABG surgery commence while there was a significant amount of Heparin in his blood outweighed the prospect of harm accruing from allowing him to remain Heparin-free for several hours.

Dr. McDonald's brief response to one question that, *at the time*, he regarded it as "unsafe" to restart the Heparin cannot be viewed in isolation but has to be read in the context of his whole testimony. Under any reasonable view of the meaning of feasibility, a flat assertion by a physician that the remedial measure was inappropriate because it was medically "unsafe" would ordinarily be tantamount to asserting that the measure was not feasible and would thus suffice to controvert the feasibility of the measure. In a medical context at least, feasibility has to include more than mere physical possibility; as we have so sadly learned from history, virtually anything can physically be done to the human body. The practice of medicine is quintessentially therapeutic in nature. Its purpose is to comfort and to heal, and a determination of whether a practice or procedure is feasible has to be viewed in that light. The assertion that a given course would be unsafe, in the sense that it would likely cause paramount harm to the patient, necessarily constitutes an assertion that the course would not be feasible. Dr. McDonald was not asserting, however, in any absolute

sense, that restarting the Heparin would have been unsafe but only that, given the complications that could have arisen, and that, in other cases had arisen, from an inadvertent puncture of the carotid artery, weighed against Mr. Tuer's apparently stable condition at the time and the intensive monitoring he would receive during the waiting period, there was a relative safety risk that, at the time, he and the hospital believed was not worth taking. That does not, in our view, constitute an assertion that a restarting of the Heparin was not feasible. It was feasible but, in their view, not advisable.

Impeachment

The exception in the Rule for impeachment has created some of the same practical and interpretive problems presented by the exception for establishing feasibility. As Saltzburg, Martin, and Capra point out, "almost any testimony given by defense witnesses could be contradicted at least in some minimal way by a subsequent remedial measure. If the defendant's expert testifies that the product was safe, a subsequent remedial measure could be seen as contradicting that testimony. If the defendant is asked on cross-examination whether he thinks that he had taken all reasonable safety precautions, and answers in the affirmative, then a subsequent remedial measure can be seen as contradicting that testimony." 1 SALTZBURG, MARTIN AND CAPRA, *supra*, 487. *See also* 2 *Weinstein's Federal Evidence, supra,* § 407.07 [1] at 407-32.

The prevailing, and pragmatically necessary, view is that the impeachment exception cannot be read in so expansive a manner. *See Probus v. K-Mart, Inc.*, 794 F.2d 1207 (7th

Cir. 1986); *Public Service Co. v. Bath Iron Works Corp.*, 773 F.2d 783 (7th Cir. 1985). As Wright and Graham note, even at common law it would likely have been impermissible for the plaintiff to "have called the defendant to the stand, asked him if he thought he had been negligent, and impeached him with evidence of subsequent repairs if he answered 'no.'" 23 WRIGHT AND GRAHAM, *supra*, § 5289, at 145 (1980).[10] Thus, as Saltzburg, Martin, and Capra point out, most courts have held that subsequent remedial measure evidence is not ordinarily admissible for impeachment "if it is offered for simple contradiction of a defense witness' testimony." 1 SALTZBURG, MARTIN AND CAPRA, *supra*, at 487.

To some extent, that begs the question; whether the evidence is allowed for impeachment seems to depend more on the nature of the contradiction than on the fact of it. In *Muzyka v. Remington Arms Co.*, 774 F.2d 1309, 1313 (5th Cir. 1985), for example, where a defense witness asserted that the challenged product constituted "perhaps the best combination of safety and operation yet devised," a design change made after the accident but before the giving of that testimony was allowed as impeachment evidence, presumably

[10] The plaintiff has not made a separate issue of the court's disallowance of her question to Dr. McDonald and Dr. Fortuin of whether restarting the Heparin would have been feasible, although she has asked rhetorically what harm would have ensued from allowing the answer if feasibility was not being controverted. Although we need not answer that question, we do note, in the context of the impeachment issue, the view of the Alabama Supreme Court, expressed in *Blythe v. Sears, Roebuck & Co.*, 586 So. 2d 861 (Ala. 1991), *Phar-Mor, Inc. v. Goff*, 594 So. 2d 1213 (Ala. 1992), and *Baptist Med. Centers v. Trippe*, 643 So. 2d 955 (Ala. 1994), that "to impeach the credibility of a witness through the introduction of a subsequent remedial measure, the testimony providing grounds for impeachment must have been initiated by the witness." *Phar-Mor, Inc., supra*, 594 So. 2d at 1219. Because, the court said, the exception was created "to protect a plaintiff from an aggressive defendant attempting to manipulate the exclusionary nature of the rule for his own advantage, it follows that a plaintiff who is on the offensive should not be allowed to manipulate the impeachment exception in order to introduce evidence for purposes otherwise inadmissible." *Id.*

to show either that the witness did not really believe that to be the case or that his opinion should not be accepted as credible. *See also Wood v. Morbark Industries, Inc.*, 70 F.3d 1201 (11th Cir. 1995); *Anderson v. Malloy, supra*, 700 F.2d 1208; *Bickerstaff v. South Central Bell Telephone Co.*, 676 F.2d 163 (5th Cir. 1982). In *Dollar v. Long Mfg., N.C., Inc.*, 561 F.2d 613 (5th Cir. 1977), the court allowed evidence of a post-accident letter by the manufacturer to its dealers warning of "death dealing propensities" of the product when used in a particular fashion to impeach testimony by the defendant's design engineer, who wrote the letter, that the product was safe to operate in that manner. *See also Patrick v. South Central Bell Tel. Co.*, 641 F.2d 1192 (6th Cir. 1980) (evidence that defendant subsequently raised height of telephone lines admissible to impeach testimony that lines met minimum statutory height at time of accident). In these circumstances, the subsequent remedial measure falls neatly within the scope of classic impeachment evidence and directly serves the purpose of such evidence — to cast doubt on the credibility of the witness's testimony; it is not a mere pretext for using the evidence to establish culpability. *Compare*, however, *Davenport v. Ephraim McDowell Mem. Hosp.*, 769 S.W.2d 56 (Ky. App. 1988) (evidence that, after the decedent's death, the defendant reactivated alarms on heart monitoring machines held admissible to impeach defense testimony that the alarms had been made inoperative at the time of the event because they went off unnecessarily on false readings and were distracting to the nursing staff).

Consistent with the approach taken on the issue of feasibility, however, subsequent remedial measure evidence had been held inadmissible to impeach testimony that, at the time

of the event, the measure was not believed to be as practical as the one employed (*Hardy v. Chemetron Corp.*, 870 F.2d 1007 (5th Cir. 1989)), or that the defendant was using due care at the time of the accident (*Flaminio v. Honda Motor Co., Ltd., supra*, 733 F.2d 463).

Largely for the reasons cited with respect to the feasibility issue, we do not believe that the change in protocol was admissible to impeach Dr. McDonald's brief statement that restarting the Heparin would have been unsafe. As we observed, that statement must be read in context, and, when so read, would not be impeached by the subsequent change in protocol. It is clear that Dr. McDonald made a judgment call based on his knowledge and collective experience at the time. He had read about and, in 5% to 10% of the cases had experienced, problems arising from an inadvertent puncture of the carotid artery; he had not experienced a patient in Mr. Tuer's circumstances dying from the lack of Heparin during a four-hour wait for surgery. He was aware that the same protocol, of allowing the Heparin to metabolize, was used at Johns Hopkins Hospital. The fact that the protocol was changed following Mr. Tuer's death in no way suggests that Dr. McDonald did not honestly believe that his judgment call was appropriate at the time. The only reasonable inference from his testimony, coupled with counsel's proffer as to why the protocol was changed, was that Dr. McDonald and his colleagues reevaluated the relative risks in light of what happened to Mr. Tuer and decided that the safer course was to continue the Heparin. That kind of reevaluation is precisely what the exclusionary provision of the Rule was designed to encourage.

JUDGMENT OF COURT OF SPECIAL APPEALS
AFFIRMED, WITH COSTS.