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LOSS OF A CHANCE: WHO CAN RECOVER IN MISSOURI?

*Mays v. United States*¹

While some states act to reduce the number of medical malpractice claims,² others³ are taking measures that will make it easier to recover when a doctor's failure to diagnose or misdiagnosis has decreased the patient's chance for survival or complete recovery. One of these measures allows recovery for the doctor's negligence even if the plaintiff probably would have died absent any negligence. This remedy commonly is known as "loss of a chance."

Consider the scenario in *Mays v. United States*.⁴ Rebel Ann Mays sought treatment at Fitzsimons Army Medical Center⁵ for voice loss, bronchitis, and

1. 608 F. Supp. 1476 (D. Colo. 1985).

2. Seventeen states, including Missouri, have imposed statutory caps on medical malpractice liability. California: CAL. CIV. CODE § 3333.2 (West Supp. 1987); Indiana: IND. CODE ANN. § 16-9.5-2-2 (Burns 1983); Kansas: KAN. STAT. ANN. § 60-3407 (Supp. 1986); Louisiana: LA. REV. STAT. ANN. § 40:1299.42 (West 1986 & Supp. 1987); Missouri: MO. REV. STAT. § 538.210 (1986); Nebraska: NEB. REV. STAT. § 44-2836 (1984); New Hampshire: N.H. REV. STAT. ANN. § 507-C:7 (1983); New Mexico: N.M. STAT. ANN. § 41-5-6 (1978); North Dakota: N.D. CENT. CODE § 26-14-11 (Supp. 1985); Ohio: OHIO REV. CODE ANN. § 2307.43 (Anderson 1981); Oregon: OR. REV. STAT. § 752.040(2) (1985); Pennsylvania: PA. STAT. ANN. tit. 40, 1301.701 (Purdon Supp. 1986); South Dakota: S.D. CODIFIED LAWS ANN. § 21-3-11 (1986); Texas: TEX. INS. CODE ANN. art. 4950 (Vernon Supp. 1987); Virginia: VA. CODE ANN. § 8.01-581.15 (1984); West Virginia: W. VA. CODE 55-7B-8 (Supp. 1986); Wisconsin: WIS. STAT. ANN. § 655.23 (West 1980 & Supp. 1986).

3. The following courts have allowed recovery even when the plaintiff could not show a more-likely-than-not chance of survival absent negligence. Arizona: *Thompson v. Sun City Community Hosp.*, 141 Ariz. 597, 688 P.2d 605 (1984); Arkansas: *Jeanes v. Milner*, 428 F.2d 598 (8th Cir. 1970) (construing Arkansas state law); Colorado: *Mays v. United States*, 608 F. Supp. 1476 (D. Colo. 1985) (construing Colorado state law); Iowa: *O'Brien v. Stover*, 443 F.2d 1013 (8th Cir. 1971) (construing Colorado state law); Kansas: *Roberson v. Counselman*, 235 Kan. 1006, 686 P.2d 149 (1984); New Jersey: *Evers v. Dollinger*, 95 N.J. 399, 471 A.2d 405 (1984); New York: *Kallenberg v. Beth Israel Hosp.*, 45 A.D.2d 177, 357 N.Y.S.2d 508 (1974), *aff'd*, 37 N.Y.2d 719, 337 N.E.2d 128, 374 N.Y.S.2d 615 (1975); Pennsylvania: *Hamil v. Bashline*, 481 Pa. 256, 392 A.2d 1280 (1978); Washington: *Herskovits v. Group Health Coop.*, 99 Wash. 2d 609, 664 P.2d 474 (1983); West Virginia: *Thornton v. CAMC*, 305 S.E.2d 316 (W. Va. 1983).

4. 608 F. Supp. 1476.

5. *Id.* at 1477-78. Because Mrs. Mays' husband, Everett, was retired from the Air Force, she was eligible for low-cost medical care pursuant to the Civilian Health and Medical Program of the Uniform Services, 10 U.S.C. § 1079 (1978). This

cough.⁶ X-rays taken on January 6, 1977, revealed a four-centimeter lesion on Mrs. Mays' left lung. In his report, the radiologist noted that a follow-up exam should be performed in seven to ten days to determine whether the growth was malignant.⁷ Mrs. Mays was not informed of the X-ray results or the need for further diagnostic tests or treatment.⁸

She returned to Fitzsimons on March 4, 1977, complaining of persistent pain in the neck and shoulder areas. More X-rays were taken, but she received no other treatment at that time. Her health deteriorated over the next year, and a third set of X-rays were taken on May 23, 1978. Those X-rays revealed the lesion in the lower lobe of her left lung had grown to five and one-half centimeters. As a result of these X-rays, Mrs. Mays was admitted to Fitzsimons for evaluation.⁹

Mrs. Mays had surgery to remove the lower lobe of her left lung on June 22, 1978. Pathology studies revealed that the growth was indeed cancerous. She underwent radiation treatment and her condition improved until December 1978, when she became partially paralyzed and was again hospitalized. Although she was treated at several hospitals from 1979 to 1982, her condition grew progressively worse. Mrs. Mays died on January 27, 1982.¹⁰

Mr. and Mrs. Mays sued for negligence.¹¹ The plaintiffs' medical expert testified that had surgery been performed upon initial discovery of the lesion in January 1977, Mrs. Mays would have had a forty percent chance of survival. Because no surgery was performed until May 1978, her chance of survival decreased to fifteen percent.¹²

If one believes the expert's testimony, Mrs. Mays' chance of survival was reduced by twenty-five percent because of the doctor's negligence. The federal court, applying Colorado law, awarded the plaintiffs \$504,300 based on that lost chance of survival.¹³

statute requires patients to use public health care facilities when they are available. *Id.* § 1079(f).

6. 608 F. Supp. at 1478.

7. *Id.* (Specifically, the radiologist wanted to exclude the possibility of "carcinoma or organizing infarct.")

8. *Id.*

9. *Id.*

10. *Id.* at 1478-79.

11. *Id.* at 1477. Suit was brought against the United States under the Federal Tort Claims Act, 28 U.S.C. § 1346(b) (1982). When Mrs. Mays died, the complaint was amended to include a claim for wrongful death pursuant to COLO. REV. STAT. § 13-21-201 (1973), and for damages under the survival statute, *Id.* § 13-20-101 (Supp. 1985). *Mays*, 608 F. Supp. at 1477.

12. 608 F. Supp. at 1481 (The expert based his opinion that Mrs. Mays' chance of survival had decreased 25% on his belief that the cancer had progressed from "Stage I" to "Stage II" as a result of the delayed diagnosis). For a discussion of staging systems, see *infra* notes 101-11 and accompanying text.

13. 608 F. Supp. at 1482-83. Total past losses, including medical expenses, lost wages and home care, totaled \$425,000. Mrs. Mays' future earnings of \$173,200 were reduced by 75% to account for her 25% lost chance. Mr. Mays received \$36,000 for loss of consortium. *Id.*

Should recovery be allowed for this "lost chance"? This Note will briefly review the different theories of causation in medical malpractice cases,¹⁴ and explain how the "loss of chance" theory developed. It also will discuss the validity of probabilities used to prove what chance was lost through negligence, and whether Missouri is likely to adopt the loss of chance doctrine.¹⁵

To understand why some courts have allowed recovery for loss of a chance, it helps to examine the classic theories of proving causation. Traditionally, one of two tests has been applied to establish cause-in-fact: "but for" or "substantial factor."¹⁶

Under the "but for" or "sine qua non" rule, a plaintiff must show an event would not have occurred "but for" the defendant's negligent act. Stated otherwise, if the event would not have occurred "but for" the defendant's conduct, liability should be imposed.¹⁷

There is generally one instance where the "but for" test fails. Where two or more causes combine to produce harm, and either cause alone would have produced the harm, some other test is needed. Under this test, the defendant's conduct is considered a cause of the injury if it was a material element, or "substantial factor," in bringing about the injury.¹⁸

14. These cases assume the defendant was negligent in order to address the primary issue of causation. See *supra* note 3 and cases cited therein.

15. Causation usually includes both cause-in-fact and proximate cause. Cause-in-fact refers to the cause-and-effect relationship between tortious conduct and loss that must be present before liability for that loss will be imposed. Proximate cause provides a method to limit an actor's responsibility for his tortious conduct. W. KEETON, D. DOBBS, R. KEETON & D. OWEN, PROSSER & KEETON ON TORTS § 41 (5th ed. 1984) [hereinafter PROSSER & KEETON]. This Note is concerned primarily with cause-in-fact.

16. *Id.* § 41, at 266-67.

17. *Id.* § 41, at 266.

18. *Id.* at 267. The Restatement has abandoned the "but for" test in favor of "substantial factor" for use in all cases. It states: "The actor's negligent conduct is a legal cause of harm to another if (a) his conduct is a substantial factor in bringing about the harm" RESTATEMENT (SECOND) OF TORTS § 431(a) (1965).

Courts rarely define what is "substantial." The Restatement states:

The word "substantial" is used to denote the fact that the defendant's conduct has such an effect in producing the harm as to lead reasonable men to regard it as a cause, using that word in the popular sense, in which there always lurks the idea of responsibility, rather than in the so-called "philosophic sense," which includes every one of the great number of events without which any happening would not have occurred. Each of these events is a cause in the so-called "philosophic sense," yet the effect of many of them is so insignificant that no ordinary mind would think of them as causes.

Id. § 431 comment a.

The Restatement lists several considerations for the court in determining what is a substantial factor: "In determining whether negligent conduct is a substantial factor in producing harm, the trier of fact should consider (a) the number of other factors contributing to the harm; (b) whether the actor's conduct has created a force active in operation until the harm occurred; and (c) lapse of time." *Id.* § 433. Prosser

Regardless of the test used, the plaintiff need not prove cause-in-fact to a certainty.¹⁹ The evidence will be sufficient if the jury can reasonably conclude the defendant's negligence caused the harm.²⁰ In medical malpractice cases, courts typically require a showing that "but for" the doctor's negligence, the patient more likely than not would have recovered.²¹ The leading case advocating the more-likely-than-not standard in medical malpractice actions is *Cooper v. Sisters of Charity of Cincinnati, Inc.*²² In *Cooper*, a physician negligently failed to diagnose a basal skull fracture.²³ The plaintiff's expert testified that while there is practically a 100 percent mortality rate without surgery for patients with injuries similar to the decedent's, "there certainly is a chance and I can't say exactly what—maybe some place around 50%—that he would survive with surgery."²⁴

The *Cooper* court held that "loss of a chance of recovery, standing alone, is not an injury from which damages will flow."²⁵ It acknowledged that the substantial factor test imposed a "weightier burden" than the loss of chance theory, but decided against the lesser standard of proof. The court held that "[t]raditional causation standards require . . . evidence that a result was more likely than not caused" by the negligent act.²⁶

states: "It has been considered that 'substantial factor' is a phrase sufficiently intelligible to furnish an adequate guide in instructions to the jury, and that it is neither possible nor desirable to reduce it to any lower terms." PROSSER & KEETON, *supra* note 15, at 267.

19. PROSSER & KEETON, *supra* note 15, § 41, at 269.

20. *Id.* A mere possibility of causation will not suffice; the court will direct a verdict for the defendant when the matter remains one of speculation or conjecture, or the probabilities are at best evenly balanced. See *Kimmie v. Terminal R.R. Ass'n*, 334 Mo. 596, 604, 66 S.W.2d 561, 565 (1933); see also *Bertram v. Wunning*, 385 S.W.2d 803, 807 (Mo. Ct. App. 1965).

21. See, e.g., *Gooding v. University Hosp. Bldg.*, 445 So. 2d 1015 (Fla. 1984).

22. 27 Ohio St. 2d 242, 272 N.E.2d 97 (1971). The *Cooper* court followed principles stated in *Kuhn v. Banker*, 133 Ohio St. 304, 13 N.E.2d 242 (1938). *Kuhn* stated that causation must be shown to a "reasonable certainty" or "reasonable probability," and medical testimony must establish that the negligence "more likely than not" caused the subsequent condition. *Kuhn*, 133 Ohio St. at ___, 13 N.E.2d at 246.

23. *Cooper*, 27 Ohio St. 2d at ___, 272 N.E.2d at 101. The physician was one of several co-defendants, which included the hospital and an association that oversaw emergency room operations. *Id.* at ___, 272 N.E.2d at 100-01.

24. *Id.* at ___, 272 N.E.2d at 100-01 (emphasis in original).

25. *Id.* at ___, 272 N.E.2d at 102 (quoting *Kuhn v. Banker*, 133 Ohio St. 304, 315, 13 N.E.2d 242, 247 (1938)).

26. *Id.* at ___, 272 N.E.2d at 103. The court decided no exception should be made in medical malpractice cases, despite the emotional attractions of such an exception. It said:

Lesser standards of proof are understandably attractive in malpractice cases where physical well-being, and life itself, are the subject of litigation. The

The *Cooper* court required evidence of a probability of survival to prevent juror speculation. "The use of the words, 'maybe' and 'around' does not connote that there is probability; those words, in the context used, could mean either more than 50%, or less than 50%."²⁷ Therefore, the *Cooper* court affirmed the lower court's decision for the defendant.²⁸

The reasoning from *Cooper* continues to be applied in more recent cases such as *Gooding v. University Hospital Building*.²⁹ In *Gooding*, a wrongful death action, the plaintiff alleged the hospital's emergency room employees were negligent in failing to diagnose and treat the decedent's abdominal aortic aneurysm.³⁰ Although the hospital had breached its duty of care, the evidence established a no better than even chance of survival even had there been an immediate diagnosis of the aneurysm and emergency surgery.³¹ The court retained the more likely than not standard of causation in medical malpractice cases, affirming the court of appeals' decision in favor of the hospital.³²

strong intuitive sense of humanity tends to emotionally direct us toward a conclusion that in an action for wrongful death an injured person should be compensated for the loss of any chance for survival, regardless of its remoteness. However, we have trepidations that such a rule would be so loose that it would produce more injustice than justice. Even though there exists authority for a rule allowing recovery based upon proof of causation by evidence not meeting the standard of probability, we are not persuaded by their logic.

Id. at ___, 272 N.E.2d at 103.

27. *Id.* at ___, 272 N.E.2d at 104. This is not to suggest, however, that expert testimony in terms less probative than more-likely-than-not will not be admitted. When courts do admit such testimony, it does not necessarily mean the court is adopting a more lenient standard of proof. See, e.g., King, *Causation, Valuation, and Chance in Personal Injury Torts Involving Preexisting Conditions and Future Consequences*, 90 YALE L.J. 1353, 1366 n.42 (1981).

28. *Cooper*, 27 Ohio St. at ___, 272 N.E.2d at 105.

29. 445 So. 2d 1015 (Fla. 1984).

30. *Id.* at 1017.

31. *Id.* at 1018.

32. *Id.* at 1021. Relaxing the standard, the court said, might correct perceived unfairness, but could also create an injustice. "Health care providers could find themselves defending cases simply because a patient fails to improve or where serious disease processes are not arrested because another could possibly bring a better result." *Id.* at 1019-20.

The court also questioned the propriety of lowering the standard of causation in malpractice suits against doctors but not as to other professionals. *Id.* at 1020. The Washington Supreme Court addressed this issue in *Daugert v. Pappas*, 104 Wash. 2d 254, 704 P.2d 600 (1985) (en banc). The case involved a legal malpractice claim against an attorney for failure to file a timely appeal. Proving causation in a legal malpractice claim requires the plaintiff to show that the appellate court would have granted appeal and rendered a judgment more favorable to the client. *Id.* at 258, 704 P.2d at 603. The Washington supreme court followed the rule that these were decisions for the judge, not the jury. *Id.* at ___, 704 P.2d at 604. But the trial judge in *Daugert*, applying loss of a chance theory, gave the issue of causation to the jury. The Wash-

Under traditional causation rules, a plaintiff who proves a fifty percent or less chance of survival absent negligence receives nothing as a matter of law.³³ If, however, he can show a fifty-one percent chance of survival, he may submit his case to the jury. If the jury rules in his favor, he may retain the judgment and it will not be discounted by the chance that the loss would have occurred even absent the negligence.³⁴

Several courts and commentators have criticized this "all-or-nothing" approach.³⁵ Slight variations in an expert's testimony, they say, may produce very different outcomes at trial.³⁶ The all-or-nothing approach is inconsistent with a loss of chance theory.³⁷ Thus, loss of chance is seen as a solution to this perceived unfairness.

The first application of loss of a chance to a medical malpractice case came in *Hicks v. United States*.³⁸ In *Hicks*, plaintiff's decedent sought med-

ington Supreme Court reversed; it said the substantive case ultimately would be reviewed by the Supreme Court, so loss of a chance need not be applied. *Id.* at ____, 704 P.2d at 606. Unfortunately, misdiagnosis often deprives a patient of a chance for survival, for which there is no other remedy. For a Washington case applying loss-of-a-chance to medical malpractice actions, see *infra* notes 65-71 and accompanying text.

33. See generally King, *supra* note 27; Wolfstone & Wolfstone, *Recovery of Damages for the Loss of a Chance*, 1982 MÈD. TRIAL TECH. Q. 121.

34. King, *supra* note 27, at 1366; Wolfstone & Wolfstone, *supra* note 33, at 122.

35. King, *supra* note 27, at 1366-67; Wolfstone & Wolfstone, *supra* note 33, at 122-23; see also Herskovits v. Group Health Coop., 99 Wash. 2d 609, 624, 664 P.2d 474, 486 (1983) (Pearson, J., concurring).

36. If, for example, a victim had more than a 50% chance originally, a jury will be permitted to find that the negligence probably was the "but for" cause of the ultimate injury (death) and award full damages. If another victim had a 50% chance or less, the majority of courts would not allow the jury even to consider the evidence. See, e.g., *Cooper*, 27 Ohio St. 2d at 253, 272 N.E.2d at 104. *But see infra* notes 59-60 and accompanying text.

Some courts have misinterpreted these cases as requiring the plaintiff to show his chance of recovery was decreased by at least 51% before he can get his case to the jury. See *Thompson v. Sun City Community Hosp.*, 141 Ariz. 597, __ n.9, 688 P.2d 605, 614 n.9 (1984); see also *Grippe v. Momtazee*, No. 475121, slip op. at 6 (Mo. Ct. App. Oct. 10, 1984), *vacated*, 696 S.W.2d 797 (Mo. 1985) (en banc), *on retransfer*, 705 S.W.2d 551 (Mo. Ct. App. 1986). In fact, the size of chance lost is irrelevant. The percentage chance prior to the alleged negligence traditionally has been the important factor in determining causation.

37. See, e.g., *Herskovits*, 99 Wash. 2d at 634, 664 P.2d at 477; see also King, *supra* note 27, at 1371-72. Some courts have limited damages to represent the percentage of chance lost. See, e.g., *Herskovits*, 99 Wash. 2d at 632-34, 664 P.2d at 486 (Pearson, J., concurring); see also notes 92-93 and accompanying text. *But see* *Kallenberg v. Beth Israel Hosp.*, 45 A.D.2d 177, 357 N.Y.S.2d 508 (1974), *aff'd*, 37 N.Y.2d 719, 337 N.E.2d 128, 374 N.Y.S.2d 615 (1975) (discussed *infra* notes 96-98 and accompanying text).

38. 368 F.2d 626 (4th Cir. 1966).

ical treatment at a naval dispensary for intense abdominal pain and vomiting.³⁹ The doctor's diagnosis was gastroenteritis; he prescribed pain medicine, sent her home, and told her to return in eight hours. The exam lasted about ten minutes.⁴⁰

Just before she was due to return, she drank some water, collapsed, and died. Death was caused by a massive hemorrhagic infarction of the intestine resulting from its strangulation.⁴¹

Experts testified the examining doctor was negligent because he conducted only a cursory examination of the patient before making his diagnosis.⁴² Both of the plaintiff's witnesses testified that the patient would have lived had she been operated on promptly.⁴³ This was not contradicted by the government's witnesses.⁴⁴ Thus, *Hicks* would have recovered damages under the traditional more likely than not test.⁴⁵

Courts adopting loss of chance, however, frequently cite *Hicks* as authority for the lost chance theory because of its extensive dictum.⁴⁶ The Fourth Circuit said in *Hicks*:

When a defendant's negligent action or inaction has effectively terminated a person's chance of survival, it does not lie in the defendant's mouth to raise conjectures as to the measure of the chances that he has put beyond the possibility of realization. If there was any *substantial possibility* of survival and the defendant has destroyed it, he is answerable. Rarely is it possible to demonstrate to an absolute certainty what would have happened in circumstances that the wrongdoer did not allow to come to pass. The law does not in the existing circumstances require the plaintiff to show to a

39. *Id.* at 628.

40. *Id.*

41. *Id.* at 629.

42. *Id.* The symptoms of high obstruction and of gastroenteritis are quite similar. The district court said the doctor merely made a judgment error. The court of appeals said that when the symptoms are consistent with either of two possible conditions, one lethal and one not, due care demands that the doctor make more than a cursory examination. The doctor should have made a rectal exam to determine whether the woman had an intestinal obstruction. *Id.* at 629-30.

43. *Id.* at 632.

44. *Id.*

45. With virtually a 100% chance of survival absent negligence, the facts in *Hicks* certainly do not lend themselves to a loss of chance theory. Loss of chance theory is used only when a plaintiff could not recover under the traditional more-likely-than-not test. Since the plaintiff could in this case, there was no need for the court to refer to substantial possibility of survival or to reduced chances.

46. See, e.g., *Herskovits v. Group Health Coop.*, 99 Wash. 2d 609, ___, 664 P.2d 474, 478 (1983); *Jeanes v. Milner*, 428 F.2d 598, 605 (8th Cir. 1970); *O'Brien v. Stover*, 443 F.2d 1013, 1018 (8th Cir. 1971). In subsequent cases, the Eighth Circuit Court of Appeals has interpreted *Jeanes* and *O'Brien* as proximate cause and not loss of a chance cases. See *Voegeli v. Lewis*, 568 F.2d 89, 94 (8th Cir. 1977); *Savage v. Christian Hosp. N.W.*, 543 F.2d 44, 48 (8th Cir. 1976).

certainty that the patient would have lived had she been hospitalized and operated on promptly.⁴⁷

The *Hicks* court also made reference to another federal case, *Gardner v. National Bulk Carriers, Inc.*,⁴⁸ which imposed liability on a ship's master for failing to attempt to rescue a seaman who had fallen overboard.⁴⁹ The *Gardner* court rejected the argument that the shipmaster's negligence was not a cause of the seaman's death.⁵⁰ It held that once the evidence indicated a *reasonable possibility* of rescue existed, total disregard of the duty imposed liability.⁵¹

Courts favoring loss of chance frequently use "substantial possibility" or "reasonable possibility" language to justify lowering the standard of causation.⁵² These courts apparently ignore the Fourth Circuit's claims that "*Hicks* laid down no new rule of law with respect to either negligence or proximate cause."⁵³

47. *Hicks v. United States*, 368 F.2d 626, 632 (4th Cir. 1966) (emphasis added to "substantial possibility").

48. 310 F.2d 284 (4th Cir. 1962).

49. *Id.* at 288.

50. *Id.* at 287 ("[C]ausation is proved if the master's omission destroys the reasonable possibility of rescue.").

51. *Id.* at 288 (emphasis added).

52. See, e.g., *Jeanes v. Milner*, 428 F.2d 598, 605 (8th Cir. 1970); *O'Brien v. Stover*, 443 F.2d 1013, 1018 (8th Cir. 1971); see also *King*, *supra* note 27, at 1368-69 n.53.

53. *Clark v. United States*, 402 F.2d 950, 953 n.4 (4th Cir. 1968) (where plaintiff sued for negligence, alleging that doctors misdiagnosed her injury as a kidney infection instead of a blocked ureter). The *Clark* court said:

We do not read [*Hicks*] to mean that every delay in the use of diagnostic procedures is negligence; we read *Hicks* to mean only that when confronted with symptoms of a condition requiring immediate treatment, a physician must utilize his knowledge and skill to ascertain the presence of that condition, absent some consideration that would cause the ordinary prudent practitioner to delay. Certainly *Hicks* laid down no new rule of law with respect to either negligence or proximate cause; indeed, it could not since the statute clearly requires us to apply the law of the place where the act or omission occurred.

Id. (citing 28 U.S.C. § 1346(b)). Judge Boreman agreed in his dissent:

I do not construe *Hicks* as altering the traditional tort concepts of causation as applied by state and federal courts The facts in *Hicks* demonstrate that causation in the usual sense had been shown without contradiction, i.e., that it was more probable than not that the negligence substantially caused or added to the fatal injury. . . . [I]t was not intended to lay down a principal of tort law supplanting long-established and approved state rules.

Id. at 955-56 (Boreman, J., dissenting).

Another judge has said *Hicks* "stands for no more than a rejection of a reasonable certainty standard of proof, and an acceptance of a reasonable probability standard. Viewed thus, it advances [a] plaintiff's case very little." *Herskovits v. Group Health Coop.*, 99 Wash. 2d 609, 630, 664 P.2d 474, 485 (1983) (Pearson, J., concurring).

Adding to the complexity of post-*Hicks* decisions is a line of cases that reduce the degree of certainty required to get to the jury, but maintain the "substantial factor" test for causation.⁵⁴ These cases rely on section 323(a) of the Restatement (Second) of Torts, which subjects a person to liability if he increases the risk of harm to another.⁵⁵

The landmark medical malpractice case under section 323(a) is *Hamil v. Bashline*.⁵⁶ In that case, the plaintiff took her husband, who was having severe chest pains, to a local hospital emergency room. The doctor assigned to the emergency room could not be located. Another doctor ordered an electrocardiogram, but the machine failed because of a faulty outlet. After ordering the staff to locate a second machine, the doctor left the hospital. When Mr. Hamil went untreated, Mrs. Hamil took her husband to a local doctor's office, where he died of a myocardial infarction.⁵⁷

The plaintiff's expert witness testified that Mr. Hamil lost a seventy-five percent chance for survival as a result of the hospital's negligence.⁵⁸ The court held this did not sufficiently establish to a reasonable degree of medical certainty that the hospital's negligence caused her husband's death.⁵⁹ It held, however, that section 323(a) lowered the degree of certainty required in medical malpractice cases, and the case went to the jury on that basis.⁶⁰

Using the *Hamil* analysis, once the plaintiff shows that a doctor or hospital's negligence has increased the risk of harm to the plaintiff and that harm was sustained, the plaintiff has made a prima facie case of causation.

54. See *infra* notes 56-80 and accompanying text.

55. RESTATEMENT (SECOND) OF TORTS § 323(a) (1965). It provides:

One who undertakes, gratuitously or for consideration, to render services to another which he should recognize as necessary for the protection of the other's person or things, is subject to liability to the other for physical harm resulting from his failure to exercise reasonable care to perform his undertaking, if . . . his failure to exercise such care increases the risk of such harm

Id.

56. 481 Pa. 256, 392 A.2d 1280 (1978).

57. *Id.* at 263, 392 A.2d at 1283. A myocardial infarction is a heart attack.

58. *Id.* The basis of the plaintiff's complaint was that Bashline failed to employ recognized and available methods of treating the heart attack. The plaintiff's medical expert outlined the typical methods of treatment: bed, oxygen, and pain relieving drugs. He said the hospital was negligent in not employing these methods.
Id.

59. *Id.* at 268, 392 A.2d at 1286-87. The plaintiff asserted that the negligence was a substantial factor in causing the death. The defendant contended that the plaintiff's expert did not make his statements to a reasonable degree of medical certainty. *Id.*

60. *Id.* The court favored using section 323(a) so negligent doctors would not be "completely insulated" from liability because of minor uncertainties in causation. It said the very nature of medical malpractice actions demand a lower certainty requirement. *Id.*

The jury then decides whether the plaintiff more likely than not would have survived absent the negligence of the defendant. In making its determination, the jury weighs the probabilities and must find for the plaintiff if the negligence was a substantial factor in producing the injury.⁶¹

The facts in *Hamil*⁶² and in subsequent Pennsylvania decisions⁶³ did not require the courts to address the loss of a chance doctrine, since all of these cases met the "but for" or "substantial factor" requirements. At least one court, however, cited *Hamil* as authority for recovery under a lost chance analysis.⁶⁴

In *Herskovits v. Group Health Cooperative*,⁶⁵ testimony indicated the doctor's negligent delay in diagnosing lung cancer caused the decedent's chance of survival to decrease from thirty-nine percent to twenty-five percent.⁶⁶ The court, relying on *Hamil*, decided a fourteen percent reduction in chance was sufficient to go to the jury under section 323(a).⁶⁷ Like *Hamil*, the *Herskovits* court characterized the harm suffered as the actual death.⁶⁸

61. *Id.* at 269-70, 392 A.2d at 1286-87.

62. *Id.* at 262-64, 392 A.2d at 1283-84. The plaintiff's expert testified that the decedent would have had a 75% chance of survival had the hospital acted properly and promptly to detect the heart attack. *Id.*

63. The chances of recovery were less clearly supported in subsequent cases; this indicates the Pennsylvania Supreme Court might be hedging on the substantial factor test. The Pennsylvania courts still use language indicating they require more than a 50% chance of survival initially. See *Gradel v. Inouye*, 491 Pa. 534, 545, 421 A.2d 674, 679 (1980) (doctor testified negligence was a "substantial factor" in requiring plaintiff to undergo amputation); *Jones v. Montefiore Hosp.*, 494 Pa. 410, 418-19, 431 A.2d 920, 924-25 (1981) (testimony indicated cancer "probably" would not spread and that negligence cut plaintiff's life expectancy in half). *But see Hoeke v. Mercy Hosp.*, 299 Pa. Super 416, —, 445 A.2d 140, 143-46 (1982) (to get to the jury, the plaintiff must show defendant destroyed a "substantial possibility" of survival).

64. See, e.g., *Herskovits v. Group Health Coop.*, 99 Wash. 2d 609, 614-16, 664 P.2d 474, 477 (1983); see also *Evers v. Dollinger*, 95 N.J. 399, 471 A.2d 405 (1984) (court allowed the jury to consider evidence suggesting the plaintiff had a 25% chance of experiencing a recurrence of breast cancer because of the doctor's delayed diagnosis).

65. 99 Wash. 2d 609, 664 P.2d 474 (1983).

66. *Id.* at 613, 664 P.2d at 475.

67. *Id.* at 619, 664 P.2d at 479 (citing *Hamil v. Bashline*, 481 Pa. 256, 392 A.2d 1280 (1978)). *But see Orcutt v. Spokane County*, 58 Wash. 2d 846, 364 P.2d 1102 (1961) (holding that medical testimony must show the injury more likely than not was caused by negligence). This decision reflects a position contrary to the reasoning in *Orcutt*.

68. 99 Wash. 2d at 619, 664 P.2d at 479. Four concurring judges sharply criticized the majority for characterizing death as the compensable interest. The concurring opinion suggested it should be recharacterized as the actual loss of chance. This would allow the jury to find for the plaintiff if the negligence more likely than not caused the loss of chance. A recharacterization would prevent the jury from defining "substantial factor" in terms of less than a 51% chance. *Id.* at 625, 664 P.2d at 487 (Pearson, J., concurring).

In *Hamil*, the evidence weighed strongly in the plaintiff's favor in that the decedent would have had a seventy-five percent chance of living but for the negligence of the defendant.⁶⁹ In *Herskovits*, the decedent had only a thirty-nine percent chance of survival which, according to plaintiff's evidence, was reduced to twenty-five percent.⁷⁰ No rational jury should have been able to "balance the probabilities" of *causing death*, and still found in favor of the plaintiff.⁷¹

Arizona approved the application of section 323(a) to medical malpractice cases in *Thompson v. Sun City Community Hospital*.⁷² In *Thompson*, a thirteen year old boy whose left leg was severely injured was denied emergency care at a private hospital because his mother did not have proper insurance.⁷³ The hospital was found negligent for transferring the boy for economic reasons rather than medical reasons in violation of a state statute.⁷⁴ The hospital denied causation, however, since the boy's injuries were so serious he might have suffered residual impairment of his leg regardless of negligence.⁷⁵

Nevertheless, the appellate court affirmed the trial court judgment for the plaintiff. In doing so, the court, while persuaded by the dictum in *Hamil* and *Herskovits*, went one step further by characterizing the injury as the lost chance.⁷⁶ Rather than basing the issue of causation on death, the court decided the interest the law was protecting was the *chance* itself.⁷⁷ The issue

69. 481 Pa. at 263, 392 A.2d at 1283; *see supra* note 58 and accompanying text.

70. 99 Wash. 2d at 612, 664 P.2d at 475.

71. In justifying its result, the *Herskovits* court paraphrased from *Hamil* and said, "The step from the increased risk to causation is one for the jury to make." *Id.* at 617, 664 P.2d at 478. What *Hamil* said was: "[O]nce the jury is apprised of the likelihood that defendant's conduct resulted in plaintiff's harm, . . . the jury, and not the medical expert, [has] the task of balancing *probabilities*." 481 Pa. at 272, 392 A.2d at 1288 (emphasis added).

72. 141 Ariz. 597, 688 P.2d 605 (1984).

73. *Id.* at ___, 688 P.2d at 608.

74. *Id.* at ___, 688 P.2d at 612. Private hospitals have a statutory duty to render emergency care to indigents under ARIZ. REV. STAT. ANN. § 14-1837(A) (1976). The only legitimate basis for transfer to another hospital is if it would benefit the patient medically. The statute permits reimbursement from public funds for emergency care charges incurred at the private hospital. *Id.*

75. *Thompson*, 141 Ariz. at ___, 688 P.2d at 613.

76. *Id.* at ___, 688 P.2d at 616.

77. *Id.* at ___, 688 P.2d at 616. The court emphasized that traditional causation rules will apply in most tort cases. It said, however, that "the interest which the law is protecting [here] is the *chance* itself, and the chief problem is the evaluation of the chance, which is a function peculiarly within the province of the jury." *Id.* (emphasis in original) (quoting Malone, *Ruminations on Cause-in-Fact*, 9 STAN. L. REV. 60 (1956)).

In reaching its decision, the court relied heavily on other loss of chance cases

of lost chance is submitted to the jury when the plaintiff shows that negligence increased the risk of harm.⁷⁸ The jury is instructed to find for the defendant unless they find a *probability* that the negligence was a cause in reducing the plaintiff's chance for recovery.⁷⁹ In essence, a plaintiff will recover if he can show the defendant's negligence more likely than not caused the lost chance.⁸⁰

A few courts have, without referring to the Restatement provision, allowed recovery for loss of a not better than even chance. They do this by recognizing the lost chance—not the death or the injury—as the compensable interest.⁸¹

In *Jeanes v. Milner*,⁸² evidence suggested an eleven percent reduction in chances for survival—from thirty-five to twenty-four percent—because of delayed diagnosis.⁸³ The court relied on *Hicks* for the proposition that the defendant can be liable for destroying any substantial possibility of survival.⁸⁴ In reversing the trial court decision, the appellate court held the issue of causation was one for the jury.⁸⁵

such as rescue of seamen and escape from fire. See *Malone, supra*.

The *Thompson* decision was the first to apply section 323(a) to medical malpractice cases and to characterize the injury as the lost chance. This is similar to the approach urged by several judges and commentators. See, e.g., *Herskovits*, 99 Wash. 2d at 632-34, 664 P.2d at 486 (Pearson, J., concurring); *King, supra* note 27, at 1378-79; Comment, *Medical Malpractice: The Right to Recover for the Loss of a Chance for Survival*, 12 PEPPERDINE L. REV. 973 (1985).

78. *Thompson*, 141 Ariz. at ___, 688 P.2d at 616. The primary reason for the lesser certainty requirement was to avoid perceived unfairness under the "more likely than not" test. The court said that test "puts a premium on each party's search for the willing witness . . . [F]or every expert who evaluates the lost chance at 49% there is another who estimates it at closer to 51%." *Id.* at ___, 688 P.2d at 615.

79. *Id.* at ___, 688 P.2d at 616 (emphasis added).

80. *Id.* at ___, 688 P.2d at 616. The court did not phrase the test as "more likely than not," but this is implied from the language. By adopting section 323(a) in medical malpractice cases, the court rejected the holding of an often-quoted Arizona case, *Hiser v. Randolph*, 126 Ariz. 608, 617 P.2d 774 (Ct. App. 1980). *Hiser* held that proof of a loss of a chance of recovery established only the possibility of causation, and there would be no recovery absent proof that the malpractice was the probable cause of death. *Id.* at 612, 617 P.2d at 778.

81. Commentators prefer to see loss of chance cases handled this way. Compare *infra* note 92 with *Thompson*, 141 Ariz. at ___, 688 P.2d at 616 (where the court recognized lost chance (impliedly) but used the RESTATEMENT (SECOND) OF TORTS § 323(a) to lower the certainty requirement).

82. 428 F.2d 598 (8th Cir. 1970).

83. *Id.* at 604. One expert testified that lymphosarcoma discovered in Stage I, when it is still localized, offers a 35% rate of survival; in Stage II, the rate decreases to 24%. When this doctor examined the patient, the cancer was in Stage II. If it was present at all when the defendant-doctor examined the patient, it would have been in Stage I. *Id.*

84. *Id.* at 605 (citing *Hicks v. United States*, 368 F.2d 626, 632 (4th Cir. 1966)).

85. *Id.* This case has been interpreted as characterizing the compensable in-

In *James v. United States*,⁸⁶ the plaintiff claimed that his five year chance of survival was decreased by ten percent to fifteen percent because an examining physician failed to discover a cancerous tumor.⁸⁷ All witnesses agreed, however, that the tumor would have been inoperable at the time it should have been discovered; thus, the court did not allow recovery on a lost chance theory.⁸⁸ Rather, the court said that if the tumor had been discovered, perhaps the plaintiff's life would have been lengthened or he would have suffered less pain by other appropriate treatment.⁸⁹ The court allowed the plaintiff to recover damages on that basis.⁹⁰

Courts generally have computed damages in loss of chance cases in one of three ways.⁹¹ One method would allow the plaintiff to recover only for his lost chance.⁹² Assume, for example, the patient had a forty percent chance of survival absent negligence, which was reduced to ten percent because of a physician's misdiagnosis of heart disease. Under this theory, the victim would receive thirty percent of the compensable value of his life had he survived (including what his earning capacity would otherwise have been in the years following death). The value placed on the patient's life would reflect such factors as his age, health, and earning potential, including the fact that

terest as the lost chance. See *Herskovits v. Group Health Coop.*, 99 Wash. 2d 609, 632-34, 664 P.2d 474, 486 (1983) (Pearson, J., concurring). Thus, the jury would have to decide, based on probabilities, whether the defendant caused the lost chance.

Jeanes was closely paralleled by *O'Brien v. Stover*, 443 F.2d 1013 (8th Cir. 1971). The *O'Brien* court suggested that loss of a chance of survival should be considered in the damage award. It did not expressly acknowledge that the chance was not better than even (although the expert testimony did not suggest otherwise). *Id.* at _____. Although *O'Brien* applied Iowa law, a later Iowa case apparently retained an all-or-nothing view of loss of a chance. See *Speed v. State*, 240 N.W.2d 901, 906 (Iowa 1976).

86. 483 F. Supp. 581 (N.D. Cal. 1980).

87. *Id.* at 585. The language indicates the chance of survival was less than 50%. The plaintiff's experts never testified as to the plaintiff's chances of survival absent any negligence.

88. *Id.* at 585-86. The plaintiff's expert testified the tumor probably was in the mediastinum, which would make it inoperable. The defendant's expert agreed it was in the mediastinum or in the upper right bronchus next to the trachea, also rendering it inoperable. *Id.*

89. *Id.* at 587.

90. *Id.* at 587-88.

91. This Note will give only a brief synopsis of the three methods. For a more extensive discussion, see King, *supra* note 27, at 1381; Wolfstone & Wolfstone, *supra* note 33, at 129.

92. This is the method generally favored by commentators. See, e.g., King, *supra* note 27, at 1382; Comment, *supra* note 77, at 973; see also *Herskovits v. Group Health Coop.*, 99 Wash. 2d 609, 632-34, 664 P.2d 474, 486 (1983) (Pearson, J., concurring). This is the method used by the court in *Mays*, 608 F. Supp. 1476 (discussed *supra* note 13 and accompanying text). Actual damages are not affected by loss of chance and still are fully recoverable under this method.

he had suffered the heart attack and the assumption that he had survived it. The forty percent computation would be applied to that base figure.⁹³

A second method would allow damages to the extent that the defendant's negligence caused the death of the patient sooner than the ailment would have with timely diagnosis and treatment. The recovery would be augmented by compensation for any aggravation of the patient's condition, such as additional pain and medical expense.⁹⁴ This seems to be the position taken by the majority in *Herskovits*.⁹⁵

The third alternative would allow the plaintiff to recover all damages incurred as if the defendant had completely caused the injury.⁹⁶ Only *Kallemberg v. Beth Israel Hospital*⁹⁷ has adopted this approach.⁹⁸

For many years judges were hesitant to allow statistics and probabilities into the courtroom. They feared jurors would place too much emphasis on what might appear as a mathematical certainty. Gradually, the standards relaxed; but evidence of less than a fifty-fifty chance seldom was admitted.⁹⁹

Dean McCormick long advocated the use of such evidence even when the statistical probability was less than fifty percent, provided the probabilities in question are fairly measureable and calculable.¹⁰⁰ This leads to the question: Do medical probabilities—particularly those dealing with cancer—meet Dean McCormick's test?

The most common method of estimating a cancer patient's chance of survival is through a "staging system."¹⁰¹ Essentially, physicians use staging to describe the extent of the disease and grading to determine the severity

93. *Herskovits*, 99 Wash. 2d at 635, 664 P.2d at 487 (quoting King, *supra* note 27, at 1382).

94. See, e.g., *Chester v. United States*, 403 F. Supp. 458, 460-61 (W.D. Pa. 1975) (court awarded \$36,741.10 for loss of earning power, \$7,500 for loss of guidance for his minor children and \$1,747 for funeral expenses), *aff'd*, 546 F.2d 415 (3d Cir. 1976); see also *Wooldridge v. Woolett*, 96 Wash. 2d 659, 638 P.2d 566 (1981).

95. *Herskovits*, 99 Wash. 2d at 619, 664 P.2d at 479.

96. The plaintiff presumably would recover just as he would under the all-or-nothing approach.

97. 45 A.D.2d 177, 357 N.Y.S.2d 508 (1974), *aff'd*, 37 N.Y.2d 719, 337 N.E.2d 128, 374 N.Y.S.2d 615 (1975).

98. *Id.* at 179-80, 357 N.Y.S.2d at 511 (court allowed recovery of \$55,000 for wrongful death and \$15,000 for pain and suffering where the decedent was deprived of a 20% to 40% chance of survival).

99. C. McCORMICK, *McCORMICK ON DAMAGES* § 26 (1935).

100. *Id.*

101. There are several types of staging systems. The most widely used are the Columbia, Manchester, American T-N-M, and the International T-N-M. See V. DEVITA, JR., S. HELLMAN & S. ROSENBERG, *CANCER: PRINCIPLES AND PRACTICE OF ONCOLOGY* (1st ed. 1982) [hereinafter V. DEVITA]; see also DONEGAN & SPRATT, *CANCER OF THE BREAST* 224 (2d ed. 1979); Henderson & Canellos, *Cancer of the Breast*, 302 NEW ENG. J. MED. 17 (1980).

of the tumor.¹⁰² These allow the physician to categorize a particular case with other cases having a similar prognosis.¹⁰³

Staging systems incorporate clinical characteristics that have been systematically recorded for previous cancer patients; those characteristics vary depending on the type of cancer involved, but usually include tumor size, the extent of local and regional invasion, and evidence of distant metastases.¹⁰⁴ By matching characteristics of present patients with those of past patients, physicians can estimate the chances of survival.¹⁰⁵

For example, assume Patient A had a three-centimeter breast tumor with palpable freely movable axillary nodes before undergoing a mastectomy. To determine her five-year chance of survival, a physician might use these and other characteristics to categorize her into one of four stages of advancement: I, II, III, or IV. The more advanced the stage of the disease, the less chance there is for survival.¹⁰⁶

A plaintiff's expert would likely use the staging system to show that delayed diagnosis decreases the chance of survival. If one assumes, for example, that breast cancer spreads in an orderly manner from the breast to regional lymph nodes and only then to distant organs, it is logical to assume that a patient's chance of survival will be significantly better if a mastectomy is performed while the cancer is localized in the breast.¹⁰⁷

102. Staging is based on the physical exam, surgical findings, and biopsies, and determines the extent of the disease. Cancers usually are classified into one of three stages: Stage I means the cancer still is local in nature; in Stage II, it already has spread regionally; in Stage III, distant metastasis has occurred.

Grading is the pathologist's opinion of how primitive (anaplastic) the tumor cells are. A typical grading scheme is:

Grade I: the cancerous tissue resembles host tissue (only slightly more primitive than normal tissue, but is invasive of normal tissue). Grade II: intermediate pleomorphism of cells. The tissue is becoming a mixture of primitive and more mature cells. This is the most common. Grade III: anaplastic. Primitive, highly invasive of vessels and tissue even in a small tumor. Usually means short survival even if tumor is small or found early.

103. See Michels & Mirra, *Attacking the Doubling Time Defense in Breast Cancer Cases*, 1981 MED. TRIAL TECH. Q. 301, 306.

104. V. DEVITA, *supra* note 101, at 255-57; Henderson & Canellos, *supra* note 101, at 17. Dozens of factors relate to the survival of cancer patients. Among these the most significant are tumor growth rate, local skin involvement, tumor fixation to the chest wall, and inflammation.

105. V. DEVITA, *supra* note 101, at 255-57; Henderson & Canellos, *supra* note 101, at 17.

106. See Parver, *Defense of Delayed Diagnosis and Treatment of Breast Cancer*, 1984 MED. TRIAL TECH. Q. 34, 39. Regardless of the staging system used, patients with Stage I (or A) disease have the best prognosis; those with Stage II and III (B and C) have intermediate probabilities of five-year and ten-year survival; and those with Stage IV (or D) have metastatic disease and the worst prognosis. Henderson & Canellos, *supra* note 101, at 17.

107. Henderson & Canellos, *supra* note 101, at 17. This assumption is now

While most physicians use a staging system to facilitate treatment of cancer patients, some of them believe delayed diagnosis does not adversely affect a patient's ultimate chance of survival. These beliefs are founded on a "doubling time" theory of cancer.¹⁰⁸ The "doubling time" theory emphasizes the growth rate of cancer cells. Studies show that one cancer cell initially divides into two, and these into four, etc. The "doubling time" represents the number of days it takes for cells to divide. The doubling time varies from one person to another; it also varies among different types of cancer and sometimes between primary tumors and distant metastases.¹⁰⁹

Based on this theory, some doctors believe most patients have well-established metastases by the time of the first diagnosis. It also could explain the appearance of metastases many years after a mastectomy; if a person had an extremely slow doubling rate, metastasis probably would begin before the primary tumor became detectable, but might not appear until years later.¹¹⁰

Since survival rates decrease markedly as the stages advance, a plaintiff's doctor could use the staging system to show that a delayed diagnosis significantly decreased the patient's chances of survival. To counter this evidence, a defense witness might use the doubling time theory to show that the delayed diagnosis really had no effect on the patient's overall chance of survival. Which theory is more accurate remains highly controversial.¹¹¹

One problem with the loss of chance theory is that it necessarily places great weight on the use of statistics to show the effect of a physician's negligence on a patient's chance of survival. Numbers that were collected to guide therapy are being used to indicate fault. This can lead to false assumptions on the part of the jury.

being questioned by some physicians. *See generally* Fisher, Redmond & Fisher, *The Contribution of Recent NSABP Clinical Trials of Primary Breast Therapy to an Understanding of Tumor Biology — An Overview of Findings*, 46 *CANCER* 1009 (1980). The defense would counter this argument with evidence regarding the grade of tumor, menopausal status and other risk factors, especially family history.

108. *See* Parver, *supra* note 106, at 35; Michels & Mirra, *supra* note 103, at 302-03.

109. The doubling time depends directly on the fraction of cells actually capable of dividing. This gives the physician a "growth fraction," measured by the number capable of dividing relative to the total number of tumor cells. The growth fraction decreases and tumor growth tends to slow as a tumor becomes larger because cells compete with other cells for nutrients. Physicians use various methods to estimate doubling times, including repeated mammography, measurement of recurrences, and labeling of biopsy specimens from tumors. Parver, *supra* note 106, at 40-41.

110. *Id.* at 46. Assume, for example, that a primary tumor had an average doubling time of 100 days. It would take about eight years to reach one centimeter in size, which is generally the smallest that can be detected. If the metastasis also had a 100-day doubling time, it could begin growing four or five years after the primary tumor. Therefore, under this theory, metastasis may have occurred even before the primary tumor became detectable. *Id.* at 40-41.

111. *Id.* at 35; *see also* Michels & Mirra, *supra* note 103, at 310-11.

For example, a patient's chance of survival always will decrease as the cancer progresses from Stage I to Stage II to Stage III; that much is common sense. This would seem to indicate that cancer first develops as a local lesion capable of cure by operation before it spreads to other parts of the body.¹¹² Some scientists, however, now question the validity of this theory. They offer an alternative hypothesis of cancer as a systemic disease almost from its inception.¹¹³ Physicians subscribing to this hypothesis believe cancer begins spreading regionally even before the primary tumor becomes detectable, and that variations in local-regional therapy are unlikely to substantially affect survival rates.¹¹⁴

Another argument used by defense experts is that the increase in the length of survival for those patients diagnosed in an earlier stage of disease may reflect only the fact that the time of diagnosis was advanced—not that death was delayed. In other words, survival from the date of diagnosis will appear shorter for those patients with a delayed diagnosis. This is known as lead-time bias.¹¹⁵

Finally, one study suggests there are at least two different populations of patients with breast cancer, and the effect of delayed diagnosis depends on which type is present. In one, the tumor grows large within the breast without either regional or distant metastasis; in the other, distant metastasis occurs before there is extensive growth within the breast. In this latter case, delay would have little effect on a patient's chance of survival.¹¹⁶

No reported decisions in Missouri directly address loss of a chance. However, one Missouri appellate decision, *Grippe v. Momtazee*, has discussed the issue cursorily.¹¹⁷ It must be noted that *Grippe* has no precedential value because the Missouri Supreme Court vacated the opinion.¹¹⁸ Neverthe-

112. See Parver, *supra* note 106, at 37; see also Henderson & Canellos, *supra* note 101, at 17.

113. Parver, *supra* note 106, at 37.

114. This clearly occurs in high grade tumors; it is common to find lung cancer metastatic to the liver long before the primary lung tumor is detectable. See A. MOOSA, M. ROBSON & S. SCHIMPF, *COMPREHENSIVE TEXTBOOK ON ONCOLOGY* ch. 68 (1986). This theory is consistent only with the doubling time theory because it assumes the patient ultimately would die regardless of when the disease was diagnosed. If one adheres to the traditional view of cancer development (and assumes that the primary tumor can be removed, stopping the cancer from spreading), this theory is more difficult to justify.

115. Parver, *supra* note 106, at 52.

116. Henderson & Canellos, *supra* note 101, at 19.

117. No. 475121, slip op. (Mo. Ct. App. Oct. 2, 1984) (Eastern District decision), *vacated*, 696 S.W.2d 797 (Mo. 1985) (en banc), *on retransfer*, 705 S.W.2d 551 (Mo. Ct. App. 1986).

118. 696 S.W.2d 797 (Mo. 1985) (en banc). The Eastern District Court of Appeals decided "the issue of causation in a medical malpractice case involving an alleged delayed diagnosis." *Id.* at 798. The Supreme Court ordered transfer from the

less, *Grippe* is discussed here since it indicates how Missouri courts may treat the issue in the future.

Marie Grippe consulted Dr. Sam Momtazee on January 11, 1979, because she found a lump in her breast and her breasts were sore. After the examination, the doctor wrote "sore breast" in his notes and told her to return in one year. She did not return until August 21, 1980, by which time the lump had grown larger. He examined her and told her she had cystic breasts, but did not recommend mammography or surgical consultation.¹¹⁹

Mrs. Grippe next saw the doctor on March 19, 1981. The lump was larger. Dr. Momtazee palpated a 2 cm. x 2 cm. mass, and referred her to a surgeon immediately.¹²⁰ The surgeon ordered a mammogram, which showed a 2 cm. x 2 cm. hard cyst. A biopsy disclosed the mass was a poorly differentiated anaplastic tumor.¹²¹ A modified mastectomy was performed, which showed the tumor had metastasized to two axillary lymph nodes in the armpit. After surgery, she was treated by chemotherapy, radiation, and hormone therapy, but the cancer spread to her lungs and brain. She died on March 11, 1983.¹²²

One of the plaintiff's expert witnesses testified that had the cancer been localized in the breast, Mrs. Grippe would have had a seventy-five percent chance of survival for five years. But since it had already spread by the time of surgery, her chances were only fifty-fifty.¹²³

The court reviewed a number of loss of chance cases; it recognized that some jurisdictions addressing the issue held that evidence of an increased risk of harm was sufficient to make a submissible case.¹²⁴ Following the controlling decisions of the Missouri Supreme Court, however, the court rejected

appellate court to determine the propriety of the lower court's decision and held that the lower court should have examined alleged trial errors before addressing the causation issue. *Id.* at 798-99. The cause was retransferred to the court of appeals for a ruling on the allegations of trial errors. *Id.* at 799. On retransfer, the appellate court rejected the allegations of trial error and did not reach the causation issue. 705 S.W.2d 551 (Mo. Ct. App. 1986).

119. No. 475121, slip op. at 1-2 (Mo. Ct. App. Oct. 2, 1984). On retransfer, the Eastern District noted that Dr. Momtazee "suggested she consult a surgeon and recommended the names of two doctors she might see." 705 S.W.2d at 553. The court did not explain the discrepancy. For purposes of the textual discussion, it will be assumed that the original opinion was correct. If the second opinion is correct, it is unnecessary to reach the issue of loss of a chance.

120. No. 475121, slip op. at 2.

121. *Id.*

122. *Id.*

123. *Id.* at 2-3. Although the surgeon estimated her chances decreased from 75-25 to 50-50, no expert posited that the tumor could have been discovered by mammograph before March 1980.

124. *Id.* at 5-6.

a new theory of causation for Missouri medical malpractice cases.¹²⁵

Mr. Grippe was denied recovery for two reasons. First, the evidence pertaining to the defendant's negligence was "uncertain and, in some instances, contradictory."¹²⁶ Also, the plaintiff's experts simply failed to support the contention that the spread of the cancer occurred after Dr. Momtazee should have detected the tumor.¹²⁷

The second reason for the denial of recovery was that the action was brought under Missouri's wrongful death statute rather than under the survival statute.¹²⁸ Since wrongful death is not a common law cause of action, the statute generally is subject to strict construction; this requires the plaintiff to show the death *would not* have occurred absent the alleged negligence.¹²⁹ The plaintiff failed to meet this requirement.

Missouri courts have not yet applied section 323(a) of the Restatement (Second) of Torts to a medical malpractice case. In fact, research revealed only four Missouri cases that have cited this section.¹³⁰ In one negligence action, the court held that the defendant had a duty to exercise care apart from his actual or constructive knowledge because he rendered services for the benefit of another under section 323(a).¹³¹ The other three cases also were unrelated to causation.¹³²

The Missouri Supreme Court did not address loss of chance under *Grippe*¹³³ and, to date, has not addressed it in any other case. The Eastern

125. *Id.* The *Grippe* court would have had a difficult time justifying a new theory of causation when the evidence in that case was so shallow.

126. *Id.* at 3. No expert testified *exactly* what effect the delay had on Mrs. Grippe's ultimate chances of survival.

127. *Id.* at 4.

128. *Id.* at 7. The wrongful death statute is Mo. REV. STAT. § 537.080 (1978). Mo. REV. STAT. § 537.020 (Supp. 1985) is the survival statute.

129. No. 475121, slip op. at 7; *cf.* O'Grady v. Brown, 654 S.W.2d 904, 908 (Mo. 1983) (en banc) (court said the wrongful death act need not always be construed strictly). In *Herskovits*, Judge Pearson recognized that wrongful death statutes normally should be strictly construed; he said, however, that he would interpret the Washington statute to apply to cases of this type. *Herskovits v. Group Health Coop.*, 99 Wash. 2d 609, 634-35, 664 P.2d 474, 487 (1983) (Pearson, J., concurring); *see also* Roberson v. Counselman, 235 Kan. 1006, 686 P.2d 149 (1984); *Daniels v. Hadley Memorial Hosp.*, 566 F.2d 749 (D.C. Cir. 1977).

130. *See* Hoover's Dairy v. Mid-American Dairymen, 700 S.W.2d 426 (Mo. 1985); *Stanturf v. Sipes*, 447 S.W.2d 558 (Mo. 1969); *Logsdon v. Duncan*, 293 S.W.2d 944 (Mo. 1956); *Badami v. Gaertner*, 630 S.W.2d 175 (Mo. Ct. App. 1982).

131. *Hoover*, 700 S.W.2d at 433.

132. *Badami* dealt with a suit to seek reimbursement from an employer for injuries covered by workman's compensation, where the employer was found not negligent. 630 S.W.2d 175. *Stanturf*, 447 S.W.2d 558, and *Logsdon*, 293 S.W.2d 944 both addressed the issue of negligence, but not the degree of certainty required to make a submissible jury case.

133. 696 S.W.2d 797 (Mo. 1985).

District Court of Appeals apparently recognized that victims sometimes are not compensated for a physician's negligence. It seemed unwilling, however, to adopt loss of chance even if the facts would permit that result.¹³⁴

In January 1986, the Missouri General Assembly placed a statutory cap on malpractice liability.¹³⁵ This new law, which contained an emergency provision so it would take effect immediately, limits to \$350,000 the amount a plaintiff will be awarded for pain and suffering.¹³⁶

One could speculate that this new law reflects the public's desire to halt escalating costs for physicians' services. If the courts follow that sentiment, perhaps they would be hesitant to adopt a theory that cracks the door for medical malpractice plaintiffs.

At first glance, loss of a chance appears to solve some problems inherent in medical malpractice cases. It appears to solve the dilemma of all or nothing damages awarded under traditional causation theory. Advocates of the theory say it would benefit both plaintiffs and defendants. Under this approach, plaintiffs would receive a partial award when previously they could not prove causation; defendants seldom would pay 100 percent of damages for partial negligence.¹³⁷

Another argument is that loss of a chance is more consistent with tort theory than traditional causation theories. It allows recovery for negligence—no matter how small—and this is good social policy.¹³⁸

Yet despite its seemingly good points, there still are some bugs in the theory. It could open the door to cases built on shaky grounds, brought by plaintiffs who simply weren't satisfied with the treatment they received. And, perhaps even more important, it doesn't leave room for different results that come from physicians who just happen to make different judgments based on the facts as they see them.

Perhaps there is a need for revamping the elements of causation in medical malpractice cases. Missouri courts, however, do not appear ready to adopt loss of a chance as the answer to any perceived problems.

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134. *See Grippe*, No. 47512, slip op. (Mo. Ct. App. Oct. 10, 1984).

135. MO. REV. STAT. § 583.210 (Supp. 1987). (The bill enacting this law contained an emergency provision so it would become effective immediately. *See* S. 663, 83rd Gen. Assem., 2d Sess. (1986)).

136. *Id.*

137. *See King*, *supra* note 27, at 1372; Wolfstone & Wolfstone, *supra* note 33, at 128.

138. *King*, *supra* note 27, at 1375.