

Chapter 35

Medical Testimony and the Expert Witness

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General Rules of Admissibility
Special Considerations

Conclusion

The use of medical experts in litigation has increased dramatically in recent years. In medical malpractice and product liability cases, expert testimony usually is necessary to establish one or more of the essential elements of a civil claim or defense. Similarly, in the criminal context, expert testimony generally is required to support claims of incompetency or insanity, and such testimony may be necessary to resolve issues about a defendant's potential for future dangerous behavior. Even when expert testimony is not required to prove an essential element of a claim or defense, medical experts increasingly are used to explain complex scientific concepts and aid the fact finders' understanding of the evidence.

Much of the popularity of using medical experts undoubtedly stems from the special status the law accords expert witnesses. "Unlike an ordinary witness, . . . an expert is permitted wide latitude to offer opinions, including those that are not based on first-hand knowledge or observation."¹ Because experts today can both offer opinions on ultimate questions of fact and explain fully the bases of their opinions, an expert witness provides a useful vehicle for a skilled trial lawyer to review the evidence on a particular issue and present it in a cogent and concise form for the jury.

At common law the presentation of expert testimony was rather cumbersome. Preliminarily the expert's background, training, and education were reviewed, and the court determined whether the witness was competent to render the proffered opinions. If the witness was found to be competent, the presentation of his or her direct testimony proceeded as a strictly regulated hypothetical question. A Florida court described the common law procedure for presenting an expert witness's direct testimony as follows:

When an expert is called upon to give an opinion as to past events which he did not witness, all facts related to the event which are essential to the formation of his opinion should be submitted to the expert in the form of a hypothetical question. No other facts related to the event should be taken into consideration by the expert as a foundation for his opinion. The facts submitted to the expert in the hypothetical question propounded on direct examination must be supported by competent substantial evidence in the

record at the time the question is asked or by reasonable inferences from such evidence.²

The rationale for this procedure was that "[a]dherence to this form for the direct examination of an expert prevents the expert from expressing an opinion based on unstated and perhaps unwarranted factual assumptions concerning the event; facilitates cross-examination and rebuttal; and fosters an understanding of the opinion by the trier of fact."³ In practice the use of hypothetical questions was tedious and came under harsh criticism. Wigmore's treatise on evidence contains the following sharp critique:

It is a strange irony that the hypothetical question, which is one of the few truly scientific features of the rules of evidence, should have become that feature which does most to disgust men of science with the law of evidence. The hypothetical question, misused by the clumsy and abused by the clever, has in practice led to intolerable obstruction of truth. In the first place, it has artificially clamped the mouth of the expert witness, so that his answer to a complex question may not express his actual opinion on the actual case. This is because the question may be so built up and contrived by counsel as to represent only a partisan conclusion. In the second place, it has tended to mislead the jury as to the purport of actual expert opinion. This is due to the same reason. In the third place, it has tended to confuse the jury, so that its employment becomes a mere waste of time and a futile obstruction.⁴

Rules 702 through 705 of the Federal Rules of Evidence (known as *the Rules*), enacted in 1975, simplify greatly the requirements for the admissibility of expert testimony. The Rules eliminate the requirement that evidence of the facts relied on by the expert be admitted into evidence; indeed the Rules expressly permit an expert to rely on facts that are inadmissible. The Rules also obviate the necessity for using hypothetical questions, although hypothetical questions are still permissible. Most states eventually have followed the lead of the Rules as applied by the federal courts in eliminating at least some of the common law requirements. Although a great deal of variability still exists between states, the general trend since 1975 has

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been toward fewer procedural restrictions on the admissibility of expert testimony.

The first section of this chapter reviews the courts' approach to resolving frequently raised questions concerning the admissibility of medical or scientific expert testimony. Although this chapter focuses primarily on medical experts, cases interpreting the law dealing generally with expert testimony are discussed where useful. The major issues include (1) whether the subject matter of the expert's opinion is appropriate to the case, (2) whether the expert is sufficiently qualified to render the proffered opinion, (3) what types of information provide a proper basis for an expert witness's opinion, (4) the role of general consensus in the scientific community in evaluating the admissibility of expert testimony, and (5) other limitations that exist regarding the types of opinions experts can express. The second section of this chapter reviews some special considerations, including expert testimony in the form of medical literature, the "reasonable degree of medical certainty" standard, discovery of expert witnesses' opinions, and ethical considerations relating to the use of experts.⁵

GENERAL RULES OF ADMISSIBILITY

The law governing the admissibility of expert testimony should be understood in light of two important background considerations. First, a constant tension exists in the law of evidence between two competing principles. One principle holds that deficient or problematic evidence should be inadmissible. Another principle holds that any problem or deficiency in evidence should affect only the weight given to that evidence rather than its admissibility. In no other area of the law of evidence is this tension so pronounced as in the area of expert testimony. Many of the rules reflect compromises between these two jurisprudential approaches.

Second, the trial judge is accorded broad discretion to determine whether expert testimony should be admitted or excluded in a given case. A trial court's decision of inadmissibility will be affirmed on review unless it is "manifestly erroneous."⁶

The Subject Matter of the Expert's Opinion

Under the common law, courts took a restrictive view of when expert testimony was appropriately admitted as evidence. The standard articulated in *Hagler v. Gilliland* represents the traditional test: "The admissibility of expert opinion evidence is governed by the rule that such evidence should not be admitted unless it is clear that the jurors themselves are not capable, from want of experience or knowledge of the subject, to draw correct conclusions from the facts proved. It is not admissible on matters of common knowledge."^{7,8} Stated somewhat differently, courts held that "the subject matter must be so distinctively related to some science, profession, business or occupation

as to be beyond the ken of the average layperson."⁹ If the subject matter was not beyond the ken of the average layperson, the opinion was deemed unnecessary and therefore inadmissible.

The standard articulated in the Rules, which has been adopted in form or in substance by most state courts, is much less hostile to expert testimony than the common law standard. Rule 702 provides, "If scientific, technical, or other specialized knowledge will assist the trier of fact to understand the evidence or to determine a fact in issue, a witness qualified as an expert by knowledge, skill, experience, training, or education, may testify thereto in the form of an opinion or otherwise, if (1) the testimony is based upon sufficient facts or data, (2) the testimony is the product of reliable principles and methods, and (3) the witness has applied the principles and methods reliably to the facts of the case."¹⁰

Rule 702, as interpreted by the courts, includes three distinct requirements related to the subject matter of expert testimony in addition to the three enumerated requirements concerning the foundation of an expert's opinion (which are discussed in greater detail below). First, the testimony must be composed of scientific, technical, or other specialized knowledge.¹¹ Second, the testimony must assist the fact finder in understanding the evidence or resolving a factual dispute in the case.¹² Third, the witness must be qualified to render the opinion.

Requirement One: Scientific Knowledge

In *Daubert v. Merrell Dow Pharmaceuticals* the U.S. Supreme Court addressed the first of Rule 702's three prongs and noted that "[t]he subject of an expert's testimony must be scientific. . . knowledge."¹³ The court explained that

The adjective "scientific" implies a grounding in the methods and procedures of science. Similarly, the word "knowledge" connotes more than subjective belief or unsupported speculation. The term "applies to any body of known facts or to any body of ideas inferred from such facts or accepted as truths on good grounds." Of course, it would be unreasonable to conclude that the subject of scientific testimony must be "known" to a certainty; arguably, there are no certainties in science. But, in order to qualify as "scientific knowledge," an inference or assertion must be derived by the scientific method. Proposed testimony must be supported by appropriate validation (i.e., "good grounds") based on what is known. In short, the requirement that an expert's testimony pertain to "scientific knowledge" establishes a standard of evidentiary reliability.¹⁴

The *Daubert* court emphasized that the approach to scientific knowledge is flexible.¹⁵ "Its overarching subject is the scientific validity—and thus the evidentiary relevance and reliability—of the principles that underlie a proposed submission."¹⁶ The court also noted that the inquiry must be directed to the principles and methodology used by the expert in reaching his or her conclusions and not to the conclusions themselves.¹⁷

To provide guidance to trial judges confronted with the question of whether proposed testimony constitutes

scientific knowledge, *Daubert* identified four factors that bear on the inquiry but do not represent “a definitive checklist or test.”¹⁸ First, the court stated that “a key question to be answered in determining whether a theory or technique is scientific knowledge. . . will be whether it can be (and has been) tested.”¹⁹ The second factor is “whether the theory or technique has been subjected to peer review and publication.”²⁰ Third, the known or potential rate of error for a particular scientific technique may be an appropriate consideration. Finally, the degree of acceptance of a theory or technique within the relevant scientific community may aid in determining whether expert testimony is admissible under Rule 702.

In *Kumho Tire Co. v. Carmichael* the U.S. Supreme Court clarified that the four factors articulated by the court in *Daubert* are neither exhaustive nor necessarily applicable in every case.²¹ The list of factors set forth in *Daubert* “was meant to be helpful, not definitive.”²² The determination as to “whether *Daubert*’s specific factors are, or are not, reasonable measures of reliability in a particular case is a matter that the law grants the trial judge broad latitude to determine.”²³

Requirement Two: Assisting the Jury

The second prong of the subject matter inquiry is whether the expert’s specialized knowledge will assist the jury in understanding the evidence or determining a fact in issue. The fact that expert testimony may not be necessary to prove an element of a claim or defense does not preclude its admissibility if the testimony is otherwise helpful to the trier of fact. “Helpfulness is the touchstone of Rule 702.”²⁴

Courts are divided on the question of whether expert testimony is admissible under Rule 702 when the subject matter of the testimony is within the knowledge or experience of laypersons. In *Ellis v. Miller Oil Purchasing Co.*, the U.S. Court of Appeals for the Eighth Circuit reviewed a ruling in which the trial judge had excluded expert testimony by a qualified accident reconstruction expert.²⁵ The trial judge had determined “that the expert was in no better position than the jury to determine the answer.”²⁶ In upholding the ruling the Eighth Circuit stated that “[w]here the subject matter is within the knowledge or experience of laypeople, expert testimony is superfluous.”²⁷

Other courts have reached the opposite conclusion. The U.S. Court of Appeals for the Third Circuit has stated that “there is no requirement that expert testimony be ‘beyond the jury’s sphere of knowledge.’”²⁸ In *Carroll v. Otis Elevator Co.* the U.S. Court of Appeals for the Seventh Circuit likewise upheld the admissibility of expert testimony on matters within the jury’s ken.²⁹ The Seventh Circuit considered the admissibility of the testimony of an experimental psychologist with expertise in human behavior and perception. At trial the expert had testified that “brightly colored, red objects attract small children,” that “[t]his elevator’s red stop button was more brightly colored than others” and thus “was more attractive to small children than others,” that “a covered stop button is less accessible to children than this uncovered one,” and that “the more difficult a button is to push the less readily it is actuated by a small

child.” In affirming the trial court’s decision to admit this testimony, the Seventh Circuit stated that “[w]hile it is true that one needn’t be B.F. Skinner to know that brightly colored objects are attractive to small children and that covered buttons or those with significant resistance are more difficult to actuate by little hands, given our liberal federal standard, the trial court was not ‘manifestly erroneous’ in admitting this testimony.”³⁰

The U.S. Supreme Court has declared that the requirement that expert testimony assist the trier of fact to understand the evidence or determine a fact in issue goes primarily to relevance. The Court stated that “expert testimony which does not relate to any issue in the case is not relevant and, ergo, nonhelpful.”³¹

Requirement Three: The Expert’s Qualifications

Rule 702 provides that a witness can be qualified by knowledge, skill, experience, training, or education. However, a witness need not demonstrate all of these bases to qualify as an expert.³² In some cases practical experience alone has been held to be a sufficient basis for qualifying as an expert witness.³³ “Whether a witness is qualified as an expert can only be determined by comparing the area in which the witness has superior knowledge, skill, experience, or education with the subject matter of the witness’ testimony.”³⁴

In the context of medical and scientific testimony, the court’s approach to an expert’s qualification often depends on the nature of the opinion at issue. In malpractice cases courts generally require that an expert witness rendering testimony on the medical standard of care be a physician, although courts have been less restrictive in permitting nonphysician witnesses to offer opinions on causation:³⁵

*[A] distinction must be made between testimony as to cause and testimony concerning the standard of care required of the physician. One need not necessarily be a medical doctor in order to testify as to causation. However, . . . [u]nless the conduct complained of is readily ascertainable by laymen, the standard of care must be established through the testimony of physicians.*³⁶

At common law, an expert testifying about the medical standard of care was required to demonstrate familiarity with the standard in the geographic location in which the defendant physician practiced. That requirement has been relaxed in numerous jurisdictions in cases in which the standard of care is the same throughout the United States.³⁷ Not all courts, however, follow the more liberal approach.³⁸

A physician does not have to be board certified or even a specialist in a particular field of medicine to render an opinion about the standard of care applicable to that field.³⁹ “The training and specialization of the witness goes to the weight rather than admissibility of the evidence, generally speaking.”⁴⁰

An essential prerequisite to offering an opinion about the standard of care, however, is that the expert witness be familiar with the standard of care for the medical problem or procedure at issue.⁴¹ “[M]ore than a casual familiarity with the specialty of the defendant physician is required.

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The witness must demonstrate a knowledge acquired from experience or study of the standards of the specialty of the defendant physician sufficient to enable him to give an expert opinion as to the conformity of the defendant's conduct to those particular standards."⁴²

In *Hartke v. McKelway*, for example, the plaintiff, over the defendant's objection, was permitted to introduce the testimony of a physician regarding the standard of care for performing laparoscopic cauterization of the fallopian tubes.⁴³ Although the expert had performed several hundred tubal ligations, she had never performed a laparoscopic cauterization, had never assisted in the performance of such surgery, and had observed such an operation only twice. The appellate court noted that laparoscopic cauterization was a new procedure that was significantly different from the tubal ligation procedure. The court held that "[h]er reading of literature and conferring with other physicians on the eve of trial did not qualify her" and she "should not have been allowed to testify about the standard of care for laparoscopic cauterization."⁴⁴ The court concluded that "to give an opinion on whether the defendant complied with the applicable standard of care, the witness must be familiar with that standard."⁴⁵

Similarly, in *Northern Trust Co. v. Upjohn Co.*, the court held that a specialist in emergency medicine and internal medicine was not competent to testify regarding the standard of care to be applied to a defendant, a specialist in obstetrics and gynecology.⁴⁶ The court did not make its decision, however, on the basis of the expert witness's field of specialization. Rather, the court examined the expert's knowledge, skill, experience, education, and training to determine whether he was adequately qualified to render an opinion on a pregnancy interruption procedure. The court stated:

He had never worked in an obstetrical or gynecological ward, had attended patients delivering babies "on occasion," but apparently had never been involved in pregnancy interruption procedures. He had never used the drug [that was administered to plaintiff], never seen it used and never observed the reactions of a patient receiving the drug. In fact, he had never had any experience with the drug in any manner and had not even read the insert and profile for the drug until he was asked to testify in [this] case.⁴⁷

The court concluded that the expert "was not qualified to give an opinion. . . since he could not know what was customary practice for someone in [the defendant physician's] position."⁴⁸

In *Smith v. Pearre* the Maryland Court of Special Appeals held that the trial court correctly excluded the testimony of a witness who was admittedly an expert in surgery.⁴⁹ The issue in the case involved the standard of care applicable to gastroenterologists. The expert witness was familiar with the standard of care for gastroenterologists at Yale University School of Medicine where he was a professor, but he was not familiar with the national standard of care for gastroenterologists.⁵⁰ The court stated that "[w]hile it is well established that a physician may render an opinion on a medical standard of care outside his own specialty, the witness must nevertheless possess the necessary qualifications and sufficient knowledge."⁵¹

In *Hedgecorth v. United States* the trial court considered whether two physicians—an ophthalmologist and an emergency medicine specialist—were qualified to give expert testimony regarding the standard of care for performing cardiac stress tests even though they were not cardiologists.⁵² The court made a specific finding that both physicians "have demonstrated to this court that they are familiar with the appropriate standard of care with regard to stress tests. The fact that [these physicians] are not cardiologists does not render their testimony on stress testing inadmissible, but merely goes to the weight given it by. . . the trier of fact."⁵³

The principle that emerges from these cases is that a physician's qualification to offer testimony on the standard of care in a particular case does not depend on the witness's title or field of specialization. Rather, it depends on whether the physician has sufficient familiarity with the standard of care applicable to the particular medical problem or procedure at issue to assist the trier of fact in determining the standard of care in the case.

Courts generally have been more receptive to receiving the testimony of nonphysician expert witnesses when the proffered testimony involves the issue of causation. In *Owens v. Concrete Pipe and Products Co.*, for example, the court determined that two experts in chemistry and pharmacology, both of whom had considerable experience in toxicology, should be permitted to testify "concerning topics such as the risks associated with varying degrees of exposure to certain chemicals."^{54,55} The court stated that "[t]o the extent that their expert testimony is proffered for the purpose of establishing or rebutting causation, and is based on their knowledge of the chemicals rather than on a medical diagnosis of plaintiff's condition, their evidence is admissible."⁵⁶ Other courts have reached similar conclusions.⁵⁷

In *Gideon v. Johns-Manville Sales Corp.*, the U.S. Court of Appeals for the Fifth Circuit considered whether the trial court properly admitted the testimony of the plaintiff's expert, "a biostatistician and epidemiologist specializing in the study of the causes of disease and its effects upon individuals and the public" in an asbestos case.⁵⁸ The defendants had objected that the nonphysician witness had given "medical testimony."⁵⁹ The court noted that the witness had not testified about the plaintiff's physical condition or prognosis. In affirming the trial judge's ruling admitting the testimony, the court concluded that the witness was qualified to render opinions about risk of cancer, decreased life expectancy associated with asbestosis, and the date when the toxic effects of inhaling asbestos were first known.⁶⁰

Although courts generally have required that witnesses testifying about medical diagnoses must have medical training, they occasionally have permitted nonphysicians to offer opinions about a diagnosis when the witness's education, training, and experience demonstrate that the witness's opinion will assist the trier of fact. For example, in *Jackson v. Waller*, a case involving the contest of a will, the court permitted an optometrist to testify about the progressive nature of cataracts he observed while examining the testatrix's eyes for the purpose of fitting her for glasses.⁶¹

Jenkins v. United States involved an appeal of a criminal conviction in a case in which the defendant had relied solely on the defense of insanity.⁶² The defendant had introduced the testimony of three psychologists, two of whom testified that the defendant's mental illness was related to his crime. The trial court instructed the jury that "[a] psychologist is not competent to give a medical opinion as to a mental disease or defect." The U.S. Court of Appeals for the District of Columbia Circuit reversed the defendant's conviction, stating: "The determination of a psychologist's competence to render an expert opinion based on his findings as to the presence or absence of mental disease or defect must depend upon the nature and extent of his knowledge. It does not depend upon his claim to the title 'psychologist.'"⁶³ The court acknowledged that "[m]any psychologists may not qualify to testify concerning mental disease or defect. Their training and experience may not provide an adequate basis for their testimony."⁶⁴ Nonetheless, the court noted that "the lack of a medical degree, and the lesser degree of responsibility for patient care which mental hospitals usually assign to psychologists, are not automatic disqualifications."⁶⁵

One common theme runs through all of these cases: "[T]he trial judge should not rely on labels, but must investigate the competence a particular proffered witness would bring to bear on the issues, and whether it would aid the trier of fact in reaching its decision."⁶⁶ When an expert is asked to render multiple opinions, the determination of whether the expert is qualified normally should not be made on an all-or-nothing basis. Rather, "expert opinion must be approached on an . . . opinion-by-opinion basis, and the court must . . . carefully examine each opinion offered by the expert to assess its helpfulness to the jury."⁶⁷ An expert may be qualified therefore to render some opinions but unqualified to render others.

In *Flanagan v. Lake*, for example, an appellate court considered whether a registered nurse was qualified to offer expert testimony on the issue of causation.⁶⁸ Although the court ultimately agreed with the trial court that the nurse was not qualified to offer such testimony, the court at the same time noted that the nurse would have been qualified to offer expert testimony concerning breaches of the standard of care allegedly committed by the nursing staff.⁶⁹

Similarly, in *Perkins v. Volkswagen of America, Inc.*, a product liability case, the issue was the admissibility of testimony given by a specialist in mechanical engineering who had no experience in designing entire automobiles.⁷⁰ The U.S. Court of Appeals for the Fifth Circuit affirmed the trial court's decision to allow the expert to render opinions on general mechanical engineering principles but not to allow him to testify as an expert in automotive design.⁷¹

The Foundation of the Expert's Opinion

At common law, ensuring that an expert's opinion had an adequate factual foundation presented little problem. Unless the expert was testifying on the basis of first-hand

observation (as in the case of a treating physician testifying about his or her patient's diagnosis), the facts on which an expert's opinion was based generally had to be admitted into evidence before the expert could state an opinion. Thus the jury always had before it the expert's opinion, as well as all the testimony, records, and other evidence on which the expert's opinion was based.

The Rules relax the requirement that the underlying facts and data be admissible in evidence. Rule 703 provides that "the facts or data in the particular case upon which an expert bases an opinion or inference may be those perceived by or made known to the expert at or before the hearing. If of a type reasonably relied upon by experts in the particular field in forming opinions or inferences upon the subject, the facts or data need not be admissible in evidence in order for the opinion or inference to be admitted." Facts or data that are otherwise inadmissible shall not be disclosed to the jury by the proponent of the opinion or inference unless the court determines that their probative value in assisting the jury to evaluate the expert's opinion substantially outweighs their prejudicial effect.⁷²

Rule 703 thus continues to permit experts to base their opinions on the traditional foundations (i.e., personal knowledge or facts made known to them at trial). However, Rule 703 expands the common law rule by permitting experts to base opinions on facts that have not been admitted into evidence and that are themselves inadmissible. The Advisory Committee explained the rationale behind this modification as follows:

[T]he rule is designed to broaden the basis for expert opinions beyond that current in many jurisdictions and to bring the judicial practice into line with the practice of the experts themselves when not in court. Thus a physician in his own practice bases his diagnosis on information from numerous sources and of considerable variety, including statements by patients and relatives, reports and opinions from nurses, technicians, and other doctors, hospital records, and X-rays. Most of them are admissible in evidence, but only with the expenditure of substantial time in producing and examining various authenticating witnesses. The physician makes life-and-death decisions in reliance upon them. His validation, expertly performed and subject to cross-examination, ought to suffice for judicial purposes.⁷³

Rule 703 thus creates the anomalous situation of an expert being permitted to rely on inadmissible facts or data as the foundation for an admissible opinion. To ensure that the basis of the expert's opinion is reliable, the facts or data must be "of a type reasonably relied upon by experts in the particular field in forming opinions or inferences upon the subject."⁷⁴ Whether the facts or data are "of a type reasonably relied upon" is to be determined by the trial court. "Though courts have afforded experts a wide latitude in picking and choosing the sources on which to base opinions, Rule 703 nonetheless requires courts to examine the reliability of those sources."⁷⁵

Before *Daubert*, federal courts were divided on the proper level of judicial scrutiny for evaluating whether an expert's opinion was based on facts or data of a type reasonably relied on by experts in the field. Judge Weinstein's decision

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in *In re "Agent Orange" Product Liability Litigation* summarizes the competing schools of thought:

Courts have adopted two judicial approaches to Rule 703: one restrictive, one liberal. The more restrictive view requires the trial court to determine not only whether the data are of a type reasonably relied upon by experts in the field, but also whether the underlying data are untrustworthy for hearsay or other reasons. The more liberal view. . . allows the expert to base an opinion on data of the type reasonably relied upon by experts in the field without separately determining the trustworthiness of the particular data involved.^{76,77}

At issue in *Agent Orange* was whether expert witnesses proffered by the plaintiffs who were relying on symptomatology checklists completed by the plaintiffs and "prepared in gross for a complex litigation" were basing their opinions on facts or data of a type reasonably relied on by physicians.⁷⁸ The court found that such checklists "are not material that experts in this field would reasonably rely upon and so must be excluded under Rule 703."⁷⁹

This court's reasoning reflected the restrictive approach.⁸⁰ In particular, the court did not defer to the expert on the question of whether the facts or data he relied on were of a type reasonably relied on by experts in the field. Rather, the discussion focused on the pivotal role of the trial judge in assessing the foundation of the expert's opinion. "[T]he court may not abdicate its independent responsibilities to decide if the bases meet minimum standards of reliability as a condition of admissibility. If the underlying data is so lacking in probative force and reliability that no reasonable expert could base an opinion on it, an opinion which rests entirely upon it must be excluded."⁸¹

Factual Foundation

Regardless of the type of information on which an expert's opinion is based, courts generally require that an expert's opinion have an adequate factual foundation. "The trial court's examination of reasonable reliance by experts in the field requires at least that the expert base his or her opinion on sufficient factual data, not rely on hearsay deemed unreliable by other experts in the field, and assert conclusions with sufficient certainty to be useful given applicable burdens of proof."⁸²

At common law the trial judge could easily enforce this foundation requirement. If factual assumptions were included in a hypothetical question but no evidence was contained in the record to support the existence of the assumed facts, an objection to the hypothetical question would be sustained and the expert's opinion would not be admitted.

Under the Rules, expert testimony lacking an adequate foundation historically has been excluded by Rule 703 (for reasons discussed previously), Rule 401, Rule 403, or some combination thereof.⁸³ Rule 403, which is discussed later in the section on Additional Limitations, permits the trial judge to balance the evidence's probative value against other concerns to determine the admissibility of the evidence. Obviously an expert's opinion that has no factual

basis has little, if any, probative value and thus can properly be excluded. "[E]ven if a witness is eminently qualified, even if there is merit to his views, and even if [Rules] 702, 703, 704, and 705 are most liberally interpreted, there must be and ought to be some reliable factual basis on which the opinions are premised."⁸⁴ Although expert testimony that lacks a foundation should properly be excluded by the trial court, it is also generally accepted that "the relative weakness or strength of the factual underpinning of the expert's opinion goes to weight and credibility, rather than admissibility."⁸⁵

The decision of the U.S. Court of Appeals for the District of Columbia Circuit in *Richardson v. Richardson-Merrell, Inc.* illustrates how courts assess whether an expert's opinion has an adequate factual foundation.⁸⁶ In *Richardson* the plaintiffs alleged that the administration of the antinausea drug doxylamine/pyridoxine (Bendectin) during pregnancy caused their child's birth defects. After a trial resulting in a jury verdict in favor of the plaintiffs, the trial judge granted judgment notwithstanding the verdict in favor of the defendant. The trial court concluded that the plaintiffs' expert's opinion lacked "a genuine basis, 'in or out of the record,'" and "that his 'theoretical speculations' could not sustain the [plaintiffs'] burden of proving causation."⁸⁷

The Court of Appeals in *Richardson* agreed that the plaintiffs' expert's opinions did not have an adequate foundation. The court stated, "Whether an expert's opinion has an adequate basis, and whether without it an evidentiary burden has been met, are matters of law for the court to decide."⁸⁸ The court proceeded to analyze the adequacy of the foundation of the plaintiffs' expert's opinion. The court noted that the expert had "predicated his opinion upon four different factors: (1) chemical structure activity analysis, (2) in vitro (test tube) studies, (3) in vivo (animal) teratology studies, and (4) epidemiological studies."⁸⁹ The court determined that the first three types of studies "cannot furnish a sufficient foundation for a conclusion that Bendectin caused the birth defects at issue in this case."⁹⁰ The court then noted that "the drug has been extensively studied and a wealth of published epidemiological data has been amassed, none of which has concluded that the drug is teratogenic."⁹¹ The plaintiffs' expert was able to establish a statistically significant association between Bendectin and the injury at issue only by "recalculating" epidemiological data previously published in peer-reviewed scientific journals.⁹² Several other courts have reached conclusions similar to *Richardson*.⁹³

The requirement that an expert's opinion be based upon an adequate factual foundation and be derived using reliable methods and principles were expressly integrated into Rule 702 as part of the 2000 Amendments.⁹⁴

Medical Causation

Since *Daubert*, in cases involving medical causation issues courts seem to have changed the heading under which they perform their analyses; rather than considering whether an expert opinion has an adequate factual foundation under Rule 703, courts now appear to be considering whether the opinion is (1) "based upon sufficient facts or data",

(2) “the product of reliable principles and methods,” and (3) based on the application of “the principles and methods reliably to the facts of the case” under Rule 702.⁹⁵ Substantively, however, the analyses appear essentially identical with the critical focus being reliability of the expert’s testimony.

In *Porter v. Whitehall Laboratories, Inc.*, for example, the Seventh Circuit considered a trial court’s order granting summary judgment based on the need for the plaintiff to prove causation through expert testimony and the inadmissibility of the expert testimony proffered.⁹⁶ The case revolved around whether ibuprofen use could cause rapidly progressive glomerulonephritis (RPGN). One expert offered only a “curbside opinion” as opposed to “an analytical, scientific opinion.” A second expert could not offer his opinion to a reasonable degree of medical certainty. The third expert “admitted that if his personal hypothesis turned out to be correct, it would be the first case in history in which ibuprofen caused RPGN.” A fourth expert admitted that his proffered opinion was outside his area of expertise.⁹⁷ The trial court, in holding that the testimony of the proffered experts was inadmissible, had “posited that the expert must be able to compare the data at hand with a known scientific conclusion or relationship.”⁹⁸ In affirming the ruling the Seventh Circuit stated: “If experts cannot tie their assessment of data to known scientific conclusions, based on research or studies, then there is no comparison for the jury to evaluate and the experts’ testimony is not helpful to the jury.”⁹⁹

Similarly, in *Chikovsky v. Ortho Pharmaceutical Corp.* the court considered the admissibility of an expert’s opinion that the drug tretinoin (Retin-A) is a teratogen.¹⁰⁰ The court noted that the expert was not aware of any published study or treatise that found that tretinoin caused birth defects.¹⁰¹ Although the expert testified that the dose is relevant in determining whether a substance can act as a teratogen, he knew of no studies that provided a basis for concluding that the plaintiff could have received a sufficient dose of tretinoin to cause such effects.¹⁰² Finally, although the expert contended that vitamin A (a chemically related compound) could cause fetal harm when administered to pregnant women in some doses, he did not know at what level vitamin A became unsafe and he had “performed no comparisons between the dose of vitamin A in the study and that found in Retin-A.”¹⁰³ The court concluded “as a matter of law that [the expert’s] opinions are not based on scientifically valid principles and, therefore, do not meet the reliability requirements of Rule 702 as interpreted by the Supreme Court in *Daubert*.”¹⁰⁴

The analysis of the adequacy of a scientific expert’s factual foundation appears to reach the same conclusion regardless of whether the analysis is conducted under the rubric of Rule 702 or Rule 703.¹⁰⁵ Whether an expert witness’s opinion has an adequate factual foundation is an issue that arises most often in the context of medical causation opinions. The issue also can arise, however, in other contexts, such as standard of care opinions.

In *Davis v. Virginian Railway Co.*, for example, the U.S. Supreme Court reversed a judgment in favor of the plaintiff

arising from a medical malpractice claim.¹⁰⁶ The court held that “[n]o foundation was laid as to the recognized medical standard for the treatment [at issue].” The court held that the opinion of the plaintiff’s expert that “he did not ‘think that [the treatment] is proper’” did not provide an adequate foundation for a jury to determine the applicable standard of care.¹⁰⁷

In *Stokes v. Children’s Hospital, Inc.* the court granted judgment as a matter of law in favor of the defendant because the plaintiff’s expert “was required to lay the foundation as to ‘the recognized medical standard’” but failed to do so.^{108,109} The court noted that “[i]n a case in which expert testimony is required, it is insufficient for the expert to state his opinion as to what he or she would have done under similar circumstances. . . . Rather, the jury must be informed of ‘recognized standards requiring the proper. . . procedures under the circumstances.’”¹¹⁰

The Role of “General Acceptance” of Scientific Evidence

For the past several decades, many federal and state courts have held that before medical or scientific expert testimony can be admitted into evidence, the principles from which the expert’s opinions were derived must have attained general acceptance within the relevant scientific community. This standard was first articulated in *Frye v. United States*, an appellate decision from the District of Columbia Circuit, and has been referred to as the *Frye test*.¹¹¹ The *Frye test* has been applied to testimonial evidence and all forms of scientific evidence.

In *Frye* the court considered and rejected the admissibility of results of a systolic blood pressure deception test (a precursor of the polygraph). The court stated:

*Just when a scientific principle or discovery crosses the line between the experimental and demonstrable stages is difficult to define. Somewhere in this twilight zone the evidential force of the principle must be recognized, and while courts will go a long way in admitting expert testimony deduced from a well-recognized scientific principle or discovery, the thing from which the deduction is made must be sufficiently established to have gained general acceptance in the particular field in which it belongs.*¹¹²

The *Frye* court recognized that jurors can be unduly influenced by evidence that purports to be “scientific.” Such evidence by its very nature carries with it an aura of accuracy and reliability. The *Frye test* was intended to protect jurors from placing excessive stock in scientific evidence until the principles from which the evidence was derived have gained general acceptance in the appropriate scientific community. “The requirement of general acceptance in the scientific community assures that those most qualified to assess the general validity of a scientific method will have the determinative voice.”¹¹³

The *Frye test*, however, has encountered many difficulties in application.¹¹⁴ Whether the evidence sought to be admitted has gained general acceptance in the appropriate field can depend on whether the “field” is defined broadly or narrowly. Also, courts have never adequately defined

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what constitutes “general acceptance.” Although courts have recognized that *Frye* “does not require unanimity of view,” no clear standard has emerged for measuring “general acceptance” among the relevant scientific community.¹¹⁵

The Rules, which were enacted more than half a century after the *Frye* decision, do not mention the *Frye* test or any need for scientific evidence to be generally accepted as a precondition to admissibility. Federal Courts of Appeal were sharply divided for years on the issue of whether the *Frye* test survived the enactment of the Rules. Some courts reasoned that no common law of evidence survived the enactment of the Rules and that the drafters of the Rules intended to abolish *Frye*. Other courts reasoned that the Rules were not intended to be an exhaustive codification of the law of evidence. These courts reasoned that the drafters would not have overruled such a well-accepted, longstanding standard without so much as a comment in the Advisory Committee Notes or a statement in the legislative history.

The U.S. Supreme Court finally resolved the question in *Daubert*.¹¹⁶ The court held that the *Frye* test was superseded by the adoption of the Rules. The court made it clear, however, that the *Frye* “general acceptance” test was one of many factors bearing on the reliability of an expert’s methodology. The court stated that “‘general acceptance’ can yet have a bearing” on the question of whether evidence is sufficiently reliable to justify its admission.¹¹⁷ The court stated:

A “reliability assessment does not require, although it does permit, explicit identification of a relevant scientific community and an express determination of a particular degree of acceptance within that community.” Widespread acceptance can be an important factor in ruling particular evidence admissible, and “a known technique which has been able to attract only minimal support within the community,” may properly be viewed with skepticism.¹¹⁸

The *Frye* test continues to be important for another reason. State courts, which are not governed by the Rules, may still employ the *Frye* test. The Supreme Court of Florida, for example, in a post-*Daubert* decision asserted the continuing vitality of *Frye* as the standard for the admissibility of scientific evidence in Florida.¹¹⁹

Additional Limitations

Four other limitations on the admissibility of expert testimony warrant brief mention. First, expert witnesses are not permitted to offer legal conclusions. Second, expert witnesses cannot express opinions about the credibility of other witnesses. Third, expert witnesses are not permitted to offer opinions concerning the intent, motive, or state of mind of corporations, regulatory agencies, or other parties. Fourth, expert testimony, like all evidence, can be excluded if its probative value is substantially outweighed by other specific considerations.

At common law, expert witnesses were prohibited from giving opinions that embraced an ultimate issue; the rationale was that permitting experts to opine on an ultimate

issue would invade the province of the jury. Rule 704 modified the common law rule, stating: “[t]estimony in the form of an opinion or inference otherwise admissible is not objectionable because it embraces an ultimate issue to be decided by the trier of fact.” Thus under Rule 704 an expert is permitted to offer an opinion on an ultimate issue of fact.¹²⁰

Rule 704 did not, however, open the door to experts opining on legal conclusions. As the U.S. Court of Appeals for the Fifth Circuit explained in *Owen v. Kerr-McGee Corp.*:

Rule 704, however, does not open the door to all opinions. The Advisory Committee notes make it clear that questions which would merely allow the witness to tell the jury what result to reach are not permitted. Nor is the rule intended to allow a witness to give legal conclusions. [A]llowing an expert to give his opinion on the legal conclusions to be drawn from the evidence both invades the court’s province and is irrelevant.¹²¹

Despite the seemingly simplistic distinction between permissible expert testimony on ultimate issues of fact and prohibited expert testimony on conclusions of law, courts have had great difficulty distinguishing between the two in practice. Moreover, courts have not been consistent in applying any set of standards to differentiate opinions of ultimate fact from legal conclusions.

The second limitation is that experts cannot express opinions about the credibility of other witnesses.¹²² Evaluating the credibility of witnesses is exclusively the function of the jury. Several courts have excluded expert opinions that effectively tell the jury which witnesses to believe; such opinions are deemed both unhelpful and irrelevant.

In *State v. McCoy*, for example, the Supreme Court of Appeals of West Virginia reversed a defendant’s rape conviction based in part on the testimony of a psychiatrist who stated that the alleged rape victim was “still traumatized by this experience.”^{123,124} The court stated that the psychiatrist’s “testimony amounted to a statement that she believed the alleged victim and by virtue of her expert status she was in a position to help the jury determine the credibility of the most important witness in a rape prosecution.”¹²⁵ The court determined that the psychiatrist’s testimony encroached “too far upon the exclusive province of the jury to weigh the credibility of the witnesses and determine the truthfulness of their testimony.”¹²⁶ The court concluded that “admission of her testimony was reversible error.”¹²⁷

Courts have held, however, that expert testimony is not inadmissible simply because it may have the indirect effect of bolstering another witness’s credibility.¹²⁸ “Much expert testimony tends to show that another witness either is or is not telling the truth. That fact by itself does not render the testimony inadmissible.”¹²⁹

The third limitation is that experts cannot express opinions about the intent, motive, or state of mind of corporations, regulatory agencies, or other parties. In *In re Rezulin Products Liability Litigation*, for example, plaintiffs proffered several experts to offer “opinions concerning the motive,

intent and state of mind of Warner-Lambert and others.^{129a} The court excluded this testimony on the grounds that such opinions would require plaintiffs experts “improperly to assume the role of advocates for the plaintiffs case” and because “it describes ‘lay matters which a jury is capable of understanding and deciding without the expert’s help.’”^{129b}

The fourth limitation is that, in addition to satisfying the standards on the admissibility of expert testimony imposed by Rules 702 through 705 of the Rules, expert testimony must not violate any of the other rules governing the admissibility of evidence at trial. A frequent obstacle to the admissibility of expert testimony is Rule 403, which provides: “Although relevant, evidence may be excluded if its probative value is substantially outweighed by the danger of unfair prejudice, confusion of the issues, or misleading the jury, or by considerations of undue delay, waste of time, or needless presentation of cumulative evidence.”¹³⁰

As the U.S. Supreme Court has noted: “Expert evidence can be both powerful and quite misleading because of the difficulty in evaluating it. Because of this risk, the judge in weighing possible prejudice against probative force under Rule 403 of the present rules exercises more control over experts than over lay witnesses.”¹³¹

Thus even if an expert witness is qualified, the testimony would be helpful, and the basis is proper, the trial court has the discretion to exclude the witness’s testimony if it would cause unfair prejudice, confuse the issues, mislead the jury, or waste time.

Preliminary Questions of Admissibility

An important practical issue with respect to the testimony of medical experts is how a litigant procedurally challenges the admissibility of expert testimony. Courts’ practices vary greatly. Some courts require motions concerning such matters to be filed well in advance of trial. Other courts permit challenges to an expert witness’s qualifications to be raised for the first time when the witness takes the stand.

Some courts have held that before excluding expert testimony based on Rule 702, 703, or 403 the trial court must hold a hearing to establish a sufficient factual record to support its decision. For example, in *In re Paoli R.R. Yard PCB Litigation* the U.S. Court of Appeals for the Third Circuit reversed a district court’s original order granting summary judgment in favor of the defendants because the trial court’s rulings excluding evidence pursuant to Rules 702 and 703 were not supported by a sufficiently detailed factual record.^{132,133} The Third Circuit also “reversed the district court’s Rule 403 determinations, holding that Rule 403 exclusions should not be granted pretrial absent a record which is ‘a virtual surrogate for a trial record.’”¹³⁴

On remand in *Paoli*, after a period of discovery, defendants again moved to exclude the opinions of plaintiffs’ experts and for summary judgment. The district court, pursuant to Rule 104(a) of the Rules, held 5 days of hearings.¹³⁵ At the hearing, three of the plaintiffs’ experts testified and 10 physicians and scientists testified for

the defense as to the reliability of plaintiffs’ experts’ opinions.¹³⁶ The district court “filed extensive opinions (totalling 330 pages) setting forth not only findings of fact but also its reasons for again excluding the vast bulk of plaintiffs’ expert evidence.”¹³⁷ In affirming in part and reversing in part the district court’s rulings, the Third Circuit implicitly approved the manner in which the district court conducted the Rule 104 hearing.¹³⁸

Similarly in *Hall v. Baxter Healthcare Corp.* the court held a hearing pursuant to Rule 104(a) that “spanned 4 intense days” at which “experts on both sides were questioned by counsel, the court, and the [court’s] technical advisors.”^{139,140} (The court appointed as “technical advisors” experts in the fields of “epidemiology, rheumatology, immunology/toxicology, and polymer chemistry.”) The issue in *Hall* involved the admissibility of the plaintiffs’ experts’ opinions that atypical connective tissue disease had been caused by the plaintiff’s silicone gel breast implants. In addition to holding an evidentiary hearing, the parties provided the court with videotaped summations and proposed questions to guide the court’s technical advisors in evaluating the experts’ testimony.¹⁴¹ The court’s technical advisors then submitted reports, and both sides were provided with an opportunity to question them.

In *Kumho Tire*, the U.S. Supreme Court stated that the “abuse of discretion” standard of review applied both to the “trial court’s decisions about how to determine reliability” and to “its ultimate conclusion.”¹⁴² The Supreme Court noted that “[o]therwise, the trial judge would lack the discretionary authority needed both to avoid unnecessary ‘reliability’ proceedings in ordinary cases where the reliability of an expert’s methods is properly taken for granted and to require appropriate proceedings in the less usual or more complex cases where cause for questioning the expert’s reliability arises.”¹⁴³

These decisions provide some guidance to trial courts grappling with the appropriate scope of a hearing to decide pretrial motions in a complex case.

SPECIAL CONSIDERATIONS

Use of Medical and Scientific Literature as Evidence

All state and federal courts in the United States allow medical literature to be used for some purposes at trial. The traditional rule was that learned treatises and articles could be used during cross-examination to impeach or contradict the testimony of a testifying expert; such materials could not, however, be admitted as substantive evidence because of the prohibition against hearsay.

“Virtually all courts have, to some extent, permitted the use of learned materials in the cross-examination of an expert witness.”¹⁴⁴ Courts vary greatly, however, on what threshold requirement must be met before such materials can be used for impeachment. Courts generally permit a treatise or article to be used for impeachment if the witness relied specifically on that treatise or article in forming his or her opinions.¹⁴⁵ Other courts permit a treatise or article

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to be used for impeachment in the absence of the witness's reliance if the witness acknowledges that the source is a recognized authority in the field. Still other courts permit such material to be used for impeachment even if the witness being impeached does not acknowledge the source as a recognized authority, if the authoritativeness of the source can be established through the testimony of other witnesses or by judicial notice.¹⁴⁶

The admissibility of medical and scientific literature as substantive evidence has been the focus of heated debate. Opponents of admissibility argue that (1) the field of medicine changes so rapidly that treatises quickly become dated, (2) the trier of fact may be unable to understand complex technical passages that may be presented out of context, (3) the author is not available for cross-examination, and (4) medical literature is unnecessary as substantive evidence when live expert witnesses are available.¹⁴⁷

On the other hand, proponents of the substantive admissibility of medical literature argue that (1) treatises generally are more up to date than live experts; (2) attorneys will be able to protect against confusion, the selective presentation of material, or passages being presented out of context; (3) cross-examination is not necessary when a live expert is available to explain the treatise or article; (4) the scrutiny of the peer review process lends a high degree of reliability to opinions or conclusions published in peer-reviewed scientific literature; and (5) the author of a treatise or medical article has no interest in the outcome of the particular case at issue.¹⁴⁸

The proponents of admissibility succeeded in recent years in having the absolute prohibition against the substantive admissibility of medical literature replaced with a more liberal standard in the Rules in about half of the states. Rule 803(18) of the Rules is representative of the prevailing standard.

Although Rule 803(18) creates an exception to the hearsay rule for medical literature, it addresses the concerns of the opponents of admissibility and contains provisions to alleviate some of these concerns. For example, Rule 803(18) requires that the statements in the medical literature sought to be admitted either be "relied upon by the expert witness in direct examination" or "called to the attention of an expert witness upon cross-examination." This requirement ensures that an expert witness is available to explain the passage introduced into evidence, thereby diminishing the concern about the author's unavailability for cross-examination. Rule 803(18) also requires that the proponent of the evidence demonstrate that the source is "established as a reliable authority" through either the testimony of the witness on the stand, another expert witness, or judicial notice. Finally, Rule 803(18) provides that "the statements may be read into evidence but may not be received as exhibits."¹⁴⁹ This provision helps to ensure that the jury does not give undue weight to medical literature vis-à-vis the testimony of live expert witnesses. This requirement also ensures that the jury will not rely on any portion of the treatise or article other than the passages admitted by the court.

The "Reasonable Degree of Medical Certainty" Standard

Some courts require that an expert hold opinions on causation and prognosis with "a degree of confidence in his conclusions sufficient to satisfy accepted standards of reliability."¹⁵⁰ "A doctor's testimony can only be considered evidence when he states that the conclusion he gives is based on reasonable medical certainty that a fact is true or untrue."¹⁵¹

Courts are in general agreement that expert testimony stating that a conclusion is "possible" does not meet the standard for admissibility with respect to the party who bears the burden of proof.¹⁵² "A doctor's testimony that a certain thing is possible is no evidence at all. His opinion as to what is possible is no more valid than the jury's own speculation as to what is or is not possible."¹⁵³

Courts differ, however, as to how much certainty is enough to constitute "a reasonable degree of medical certainty." Some courts have held that the standard requires only that the conclusion is more probably true than not; this formulation renders the phrase synonymous with "more probable than not." Such courts often permit experts to testify in terms of a "reasonable probability."¹⁵⁴ Other courts reject that standard. In *McMahon v. Young*, the court stated:

Here, the only evidence offered was that [plaintiff's condition] was "probably" caused [by defendant's conduct], and that is not enough. Physicians must understand that it is the intent of our law that if the plaintiff's medical expert cannot form an opinion with sufficient certainty so as to make a medical judgment, there is nothing on the record with which a jury can make a decision with sufficient certainty so as to make a legal judgment.^{155,156}

Regardless of which standard they apply, courts generally look to the substance of an expert's testimony rather than the form in determining whether the witness has testified with the requisite degree of certainty. In *Matott v. Ward* the Court of Appeals of New York stated:

Granted that "a reasonable degree of medical certainty" is one expression of . . . a standard [of a witness's degree of confidence in his or her conclusions] and is therefore commonly employed by sophisticates for that purpose, it is not, however, the only way in which a level of certainty that meets the rule may be stated. [T]he requirement is not to be satisfied by a single verbal straightjacket alone, but, rather, by any formulation from which it can be said that the witness' "whole opinion" reflects an acceptable degree of certainty. To be sure, this does not mean that the door is open to guess or surmise.^{157,158}

Discovery of the Expert Witness's Opinions

The Rules' elimination of many of the common law restrictions regarding the admissibility of expert testimony was premised on the belief that the adversarial system is capable of exposing the deficiencies in an expert's opinions.

The drafters of the Rules recognized, however, that advance knowledge of the expert's opinions and the bases of the opinions is "essential for effective cross-examination."¹⁵⁹

In civil cases, Rule 26 of the Rules "provides for substantial discovery in this area, obviating in large measure the obstacles which have been raised in some instances to discovery of findings, underlying data, and even the identity of the experts."¹⁶⁰ The majority of states also provide for ample discovery of the opinions of testifying experts. However, a few states, such as New York and Oregon, severely restrict pretrial discovery of the identities and opinions of testifying experts.

Under the Federal Rules of Civil Procedure, discovery of expert testimony is governed by Rule 26(a)(2) and Rule 26(b)(4). Rule 26(a)(2)(A) requires a party to disclose to other parties "the identity of any person who may be used at trial to present evidence under Rules 702, 703, or 705 of the Federal Rules of Evidence."¹⁶¹ Rule 26(a)(2)(B) then requires a more extensive disclosure than that required under the old Rules:

[T]his disclosure shall, with respect to a witness who is retained or specially employed to provide expert testimony in the case or whose duties as an employee of the party regularly involve giving expert testimony, be accompanied by a written report prepared and signed by the witness. The report shall contain a complete statement of all opinions to be expressed and the basis and reasons therefor; the data or other information considered by the witness in forming the opinions; any exhibits to be used as a summary of or support for the opinions; the qualifications of the witness, including a list of all publications authored by the witness within the preceding 10 years; the compensation to be paid for the study and testimony; and a listing of any other cases in which the witness has testified as an expert at trial or by deposition within the preceding 4 years.¹⁶²

Thus the Rules place an affirmative disclosure obligation on the party who intends to call the expert as a witness at trial; it is no longer incumbent on other parties to obtain such information through interrogatories.

In *Sylla-Sawdon v. Uniroyal Goodrich Tire Co.*, for example, the Eighth Circuit affirmed the district court's decision to limit an expert's testimony where, instead of submitting a report that complied with the court's scheduling order (which was quite similar to the Federal Rules of Civil Procedure), the expert submitted an affidavit that lacked the specificity mandated by the court's scheduling order and a curriculum vitae (CV).¹⁶³ The district court had limited the expert's testimony to matters set forth in his affidavit and his CV.¹⁶⁴ The court held that "[t]he failure to comply with the Scheduling Order is not excused because [the opposing party] elected to depose [the expert]."¹⁶⁵

Rule 26(b)(4)(A) expressly authorizes a party to depose "any person who has been identified as an expert whose opinions may be presented at trial," thereby harmonizing the rule with what has been the customary practice.¹⁶⁶ The Rules also provide that "the court shall require that the party seeking discovery pay the expert a reasonable fee for time spent in responding to discovery."¹⁶⁷

The Rules also contain a provision governing discovery of nontestifying retained experts. Rule 26(b)(4)(B) provides that "opinions held by an expert who has been retained or specially employed by another party in anticipation of litigation or preparation for trial and who is not expected to be called as a witness at trial" can be discovered only "upon a showing of exceptional circumstances under which it is impracticable for the party seeking discovery to obtain facts or opinions on the same subject by other means."¹⁶⁸

In criminal cases, Rule 16 of the Federal Rules of Criminal Procedure contains the major provisions governing the discovery of an expert witness's opinions. Rule 16(a)(1)(E) provides:

At the defendant's request, the government shall disclose to the defendant a written summary of testimony the government intends to use under Rules 702, 703, or 705 of the Federal Rules of Evidence during its case-in-chief at trial. . . . The summary provided under this subdivision shall describe the witnesses' opinions, the bases and the reasons for those opinions, and the witnesses' qualifications.¹⁶⁹

Rule 16(b)(1)(C) requires the defendant to make a similar disclosure at the government's request "[i]f the defendant requests disclosure under subdivision (a)(1)(E) of this rule and the government complies."¹⁷⁰ These subdivisions of Rule 16 were added as part of the 1993 amendments; they represent a major expansion of federal criminal discovery. The Advisory Committee explained that "[t]he amendment is intended to minimize surprise that often results from unexpected expert testimony, reduce the need for continuances, and to provide the opponent with a fair opportunity to test the merit of the expert's testimony through focused cross-examination."¹⁷¹

Rule 16 also contains provisions governing discovery of reports of examinations and tests. Rule 16(a)(1)(D) provides:

Upon request of a defendant the government shall permit the defendant to inspect and copy or photograph any results or reports of physical or mental examinations, and of scientific tests or experiments, or copies thereof, which are within the possession, custody, or control of the government, the existence of which is known, or by the exercise of due diligence may become known, to the attorney for the government, and which are material to the preparation of the defense or are intended for use by the government as evidence in chief at the trial.¹⁷²

Rule 16(b)(1)(B) imposes a similar, although somewhat different, disclosure requirement on the defendant "[i]f the defendant requests disclosure under subdivision (a)(1)(C) or (D) of this rule, upon compliance with such request by the government." The defendant's disclosure requirement includes only "results or reports of physical or mental examinations and of scientific tests or experiments made in connection with the particular case."¹⁷³ The defendant is required to produce only materials "which the defendant intends to introduce as evidence in chief at the trial or which were prepared by a witness whom the defendant intends to call at the trial when the results or reports relate to that witness' testimony."¹⁷⁴

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Rule 12.2 imposes a notification requirement on a criminal defendant if the defendant “intends to rely upon the defense of insanity at the time of the alleged offense,” or “[i]f a defendant intends to introduce expert testimony relating to a mental disease or defect or any other mental condition of the defendant bearing upon the issue of guilt.”^{175,176}

Ethical Considerations

Two ethical considerations relating to the use of expert witnesses warrant mention. First, paying a contingent fee to an expert witness is not permitted in most jurisdictions. The American Bar Association (ABA) Model Code of Professional Responsibility includes a disciplinary rule that states: “[A] lawyer shall not pay, offer to pay, or acquiesce in the payment of compensation to a witness contingent upon the content of his testimony or the outcome of the case.”¹⁷⁷ The ABA Model Rules of Professional Conduct do not expressly prohibit the payment of a contingent fee to an expert witness, but Model Rule 3.4 prohibits offering “an inducement to a witness that is prohibited by law.”¹⁷⁸ The Comment to Rule 3.4 also notes that “the common law rule in most jurisdictions is that . . . it is improper to pay an expert witness a contingent fee.”¹⁷⁹

The second ethical consideration relates to ex parte contacts with expert witnesses in civil proceedings. ABA Formal Opinion 93-378, which was issued in November 1993, concluded:

*[A]lthough the Model Rules do not specifically prohibit a lawyer in a civil matter from making ex parte contact with the opposing party's expert witness, such contacts would probably constitute a violation of Rule 3.4(c) if the matter is pending in federal court or in a jurisdiction that has adopted an expert-discovery rule patterned after Federal Rule 26(b)(4)(A). Conversely, if the matter is not pending in such a jurisdiction, there would be no violation.*¹⁸⁰

The Committee noted that neither the Model Rules nor the Model Code contains “an automatic bar to lawyers initiating contact with the opposing parties’ experts.”¹⁸¹ The Committee characterized Rule 26(b)(4)(A) of the Federal Rules of Civil Procedure and similar state provisions as the “exclusive procedures for obtaining the opinions, and the bases therefore, of the experts who may testify for the opposing party.”¹⁸² Because Rule 26(b)(4) and similar state rules make no provision for informal discovery of expert witnesses’ opinions, the Committee concluded that “in those jurisdictions a lawyer who engages in such ex parte contacts would violate Rule 3.4(c)’s prohibition against knowingly disobey[ing] an obligation under the rules of a tribunal.”¹⁸³

CONCLUSION

The next decade promises to be a dynamic period with respect to the law governing medical testimony and expert witnesses. The U.S. Supreme Court’s decisions in *Daubert* and *Kumho Tire* provide general guidance regarding

the proper role of the trial court in ensuring the reliability of expert testimony. The full impact of those landmark decisions and their practical effect on the practice of litigation involving medical experts, however, remain to be determined.

Endnotes

1. *Daubert v. Merrell Dow Pharms.*, 509 U.S. 579, 592 (1993).
2. *Nat Harrison Assoc's., Inc. v. Byrd*, 256 So. 2d 50, 53 (Fla. Dist. Ct. App. 1971).
3. *Id.*
4. 2 J. Wigmore, *Evidence* §686, at 962 (Chadbourn rev. 1979).
5. The American Bar Association Section of Litigation published an excellent treatise entitled *Expert Witnesses*, which was written in part and edited by Professor Faust F. Rossi. The treatise includes three parts—a careful review of the relevant law of evidence, a section that provides general guidance for the litigator on the practical aspects of working with experts, and a section that provides practical guidance on specific types of experts.
6. *Salem v. United States*, 370 U.S. 31, 35 (1962). In *General Electric Co. v. Joiner*, 522 U.S. 136, 118 S.Ct. 512, 515 (1997) the United States Supreme Court clarified that “abuse of discretion” is the appropriate standard that an appellate court should apply in reviewing a trial court’s decision to admit or exclude expert testimony under *Daubert*.
7. *Hagler v. Gilliland*, 292 So. 2d 647, 648 (Ala. 1974).
8. *Id.*
9. *Dyas v. United States*, 376 A. 2d 827, 832 (D.C.) (quotation omitted), *cert. denied*, 434 U.S. 973 (1977).
10. Fed. R. Evid. 702.
11. *Supra* note 1, at 579, 600.
12. *Breidor v. Sears, Roebuck & Co.*, 722 F. 2d 1134, 1139 (3d Cir. 1983).
13. *Supra* note 1, at 589–590.
14. *Id.*
15. *See id.* at 594–595.
16. *Id.* at 594–595.
17. *Id.*
18. *Id.*
19. *Id.*
20. *Id.*
21. *Kumho Tire Co. v. Carmichael*, 526 U.S. 137, 119 S.Ct. 1167, 1175–1176 (1999).
22. *Id.* at 1175.
23. *Id.* at 1176.
24. *Supra* note 12.
25. *Ellis v. Miller Oil Purchasing Co.*, 738 F. 2d 269, 270 (8th Cir. 1984).
26. *Id.* at 270.
27. *Id.*
28. *Linkstrom v. Golden T. Farms*, 883 F. 2d 269, 270 (3d Cir. 1989), quoting *In re Japanese Elec. Prods.*, 723 F. 2d 238, 279 (3d Cir. 1983), *rev'd on other grounds*, 475 U.S. 574 (1986).
29. *Carroll v. Otis Elevator Co.*, 896 F. 2d 210, 212 (7th Cir. 1990).
30. *Id.* at 212.
31. *Supra* note 1 (quoting 3 J. Weinstein & M. Berger, *Weinstein's Evidence* ¶702[02], at 702-18[1988]).
32. *See American Tech. Resources v. United States*, 893 F. 2d 651, 656 (3d Cir.), *cert. denied*, 495 U.S. 933 (1990).

33. *Federal Crop Ins. Corp. v. Hester*, 765 F. 2d 723, 728 (8th Cir. 1985).
34. *Supra*, note 29.
35. *Shea v. Phillips*, 98 S.E. 2d 552 (Ga. 1957).
36. *Rodriguez v. Jackson*, 574 P. 2d 481, 485 (Ariz. Ct. App. 1977) but see *Harris v. Robert C. Groth, M.D., Inc.*, 663 P. 2d 113 (Wash. 1983).
37. See *McNeill v. United States*, 519 F. Supp. 283, 287 (D.S.C. 1981).
38. In *Falcon v. Cheung*, 848 P. 2d 1050, 1054 (Mont. 1993), for example, the court disqualified an expert who had never practiced medicine in Montana, had never practiced at a rural hospital in another state, and therefore was unfamiliar with the standard of practice in rural Montana.
39. *Frost v. Mayo Clinic*, 304 F. Supp. 285, 288 (D. Minn. 1969).
40. *Baerman v. Reisinger*, 363 F. 2d 309, 310 (D.C. Cir. 1966).
41. *Swanson v. Chatterton*, 160 N.W. 2d 662 (Minn. 1968); *Hartke v. McKelway*, 526 F. Supp. 97, 101 (D.D.C. 1981), *aff'd*, 707 F. 2d 1544 (D.C. Cir.), *cert. denied*, 464 U.S. 983 (1983).
42. *Fitzmaurice v. Flynn*, 356 A. 2d 887, 892 (Conn. 1975).
43. *Hartke supra* note 41.
44. *Id.* at 101.
45. *Id.*
46. *Northern Trust Co. v. Upjohn Co.*, 572 N.E. 2d 1030, 1041 (Ill. App. Ct.), *appeal denied*, 580 N.E. 2d 119 (1991), *cert. denied*, 502 U.S. 1095 (1992).
47. *Id.*
48. *Id.*
49. *Smith v. Pearre*, 625 A. 2d 349, 359 (Md. Ct. App.), *cert. denied*, 632 A. 2d 151 (Md. 1993).
50. *Id.*
51. *Id.*
52. *Hedgecorth v. United States*, 618 F. Supp. 627, 631 (E.D. Mo. 1985).
53. *Id.*
54. *Owens v. Concrete Pipe and Prods. Co.*, 125 F.R.D. 113, 115 (E.D. Pa. 1989).
55. *Id.*
56. *Id.*
57. See *Backes v. Valspar Corp.*, 783 F. 2d 77, 79 (7th Cir. 1986); *Roberts v. United States*, 316 F. 2d 489, 492-493 (3d Cir. 1963).
58. *Gideon v. Johns-Manville Sales Corp.*, 761 F. 2d 1129, 1136 (5th Cir. 1985).
59. *Id.*
60. *Id.*
61. *Jackson v. Waller*, 10 A. 2d 763, 769 (Conn. 1940).
62. *Jenkins v. United States*, 307 F. 2d 637, 643-644 (D.C. Cir. 1962).
63. *Id.* at 643, 645.
64. *Id.* at 644.
65. *Id.* at 646.
66. *Mannino v. International Mfg. Co.*, 650 F. 2d 846, 850 (6th Cir. 1981).
67. *Zenith Radio Corp. v. Matsushita Elec. Indus. Co.*, 505 F. Supp. 1313, 1333 (E.D. Pa. 1980), *aff'd in part and rev'd in part*, 723 F. 2d 238 (3d Cir. 1983), *rev'd on other grounds*, 475 U.S. 574 (1986).
68. *Flanagan v. Lake*, 666 A. 2d 333 (Pa. Super. Ct. 1995).
69. *Id.* at 335.
70. *Perkins v. Volkswagen of Am., Inc.*, 596 F. 2d 681, 682 (5th Cir. 1979).
71. *Rimer v. Rockwell Int'l. Corp.*, 641 F. 2d 450, 456 (6th Cir. 1981) (permitting a pilot to testify about experiences as a pilot, experiences of other pilots, and a forced landing that he made as a result of a fuel siphoning problem in a plane similar to that at issue in the case, but excluding pilot's opinion that the plane's fuel system had been defectively designed).
72. Fed. R. Evid. 703.
73. Notes of Advisory Committee on 1972 Proposed Rules, Fed. R. Evid. 703.
74. *Supra* note 72.
75. *Soden v. Freightliner Corp.*, 714 F. 2d 498, 505 (5th Cir. 1983).
76. *In re "Agent Orange" Prod. Liab. Litig.*, 611 F. Supp. 1223, 1244 (E.D.N.Y. 1985), *aff'd*, 818 F. 2d 187 (2d Cir. 1987), *cert. denied*, 487 U.S. 1234 (1988).
77. *Id.* at 1243-1244
78. *Id.* at 1247.
79. *Id.* at 1246.
80. The U.S. Court of Appeals for the Third Circuit, for example, adopted the liberal approach to Rule 703 in *DeLuca v. Merrell Dow Pharmaceuticals, Inc.*, 911 F. 2d 941, 952 (3d Cir. 1990). In that case the court determined that an expert who had relied on his own reanalysis of published epidemiological data was basing his opinions on the same epidemiological data that the defendant's expert used in formulating her opinions. *Id.* at 953. The court held that Rule 703 did not require the plaintiff's expert to accept the conclusions of the authors of the studies upon whose data he relied. The court concluded that there was no basis for excluding the plaintiff's expert's opinion under Rule 703. In *In re Paoli R.R. Yard PCB Litigation*, 35 F. 3d 717, 747-749 (3d Cir. 1994), *cert. denied*, 115 S.Ct. 1253 (1995), however, the Third Circuit overruled *DeLuca* and its liberal approach to Rule 703. The court stated, "Judge Weinstein's view is extremely persuasive, and we are free to express our agreement with it because we think that our former view is no longer tenable in light of *Daubert*." *Id.* at 748. Although the Supreme Court's holding in *Daubert* was based on Rule 702 and not Rule 703, the Third Circuit nonetheless held that "[i]t makes sense that the standards are the same, because there will often be times when both Rule 702 and Rule 703 apply." *Id.* Thus after *Paoli*, U.S. Courts of Appeals are in agreement that "it is the judge who makes the determination of reasonable reliance." *Id.*
81. *Supra* note 76.
82. *Id.*
83. *Lynch v. Merrell-National Lab.*, 830 F. 2d 1190, 1196-1197 (1st Cir. 1987).
84. *Johnston v. United States*, 597 F. Supp. 374, 401 (D. Kan. 1984) (quoted in *In re Agent Orange*, 611 F. Supp. at 1250).
85. *Taenzler v. Burlington N.*, 608 F. 2d 796, 798 n.3 (8th Cir. 1979).
86. *Richardson v. Richardson-Merrell, Inc.*, 857 F. 2d 823 (D.C. Cir. 1988), *cert. denied*, 493 U.S. 882 (1989).
87. *Id.* at 829.
88. *Id.*
89. *Id.*
90. *Id.* at 830.
91. *Id.* at 832.
92. *Id.* at 831.
93. See *Brock v. Merrell Dow Pharms., Inc.*, 874 F. 2d 307, 313 (5th Cir. 1989), *modified on reh'g*, 884 F. 2d 166 (5th Cir. 1989), *cert. denied*, 494 U.S. 1046 (1990); *supra* note 83.
94. Fed. R. Evid. 702.
95. *Id.*
96. *Porter v. Whitehall Labs., Inc.*, 9 F. 3d 607 (7th Cir. 1993).
97. *Id.* at 614-615.
98. *Id.* at 614.
99. *Id.*

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100. *Chikovsky v. Ortho Pharm. Corp.*, 832 F. Supp. 341 (S.D. Fla. 1993).
101. *Id.* at 345.
102. *Id.*
103. *Id.* at 346.
104. *Id.*
105. *See Glaser v. Thompson Med. Co.*, 32 F. 3d 969, 975 (6th Cir. 1994) (reversing lower court's decision to exclude expert testimony based on studies that had undergone peer review, were published in reputable medical journals, and had "clearly explained, solid scientific methodologies"); *Sorensen v. Shaklee Corp.*, 31 F. 3d 638, 649 (8th Cir. 1994) (affirming lower court decision excluding expert opinion where "the experts. . . reasoned from an end result in order to hypothesize what needed to be known but what was not"; no reliable evidence that alfalfa tablets contained ethylene oxide or that ethylene oxide causes mental retardation); *see also Wheat v. Pfizer, Inc.*, 31 F. 3d 340, 343 (5th Cir. 1994) (in affirming summary judgment, court stated that proffered testimony was a hypothesis that lacked an empirical foundation and had not been subjected to peer review and publication and was therefore inadmissible).
106. *Davis v. Virginian Ry., Co.*, 361 U.S. 354, 357-358 (1960).
107. *Id.*
108. *Stokes v. Children's Hosp., Inc.*, 805 F. Supp. 79, 82-83 (D.D.C. 1992), *aff'd without op.*, 36 F. 3d 127 (D.C. Cir. 1994).
109. *Id.* at 82 (quoting *supra* note 106).
110. *Id.* (quoting *Levy v. Schnabel Found. Co.*, 584 A. 2d 1251, 1255 [D.C. 1991]).
111. *Frye v. United States*, 293 F. 1013 (D.C. Cir. 1923).
112. *Id.* at 1014.
113. *United States v. Addison*, 498 F. 2d 741, 743-744 (D.C. Cir. 1974).
114. *See Gianelli, The Admissibility of Novel Scientific Evidence: Frye v. United States, a Half Century Later*, 80 Colum. L. Rev. 1197, 1208 (1980).
115. *Massachusetts v. Lykus*, 327 N.E. 2d 671, 678 (Mass. 1975).
116. *Supra* note 1.
117. *Id.* at 594.
118. *Id.*
119. *Flanagan v. Florida*, 625 So. 2d 827 (Fla. 1993). *See Fielder v. Magnolia Beverage Co.*, 757 So. 2d 925, 937 (Miss. 1999) (continued vitality of Frye test in Mississippi); *California v. Leahy*, 882 P. 2d 321 (Cal. 1994) (reaffirming use of general acceptance test of admissibility of scientific evidence in California); *Arizona v. Bible*, 858 P. 2d 1152, 1183 (Ariz. 1993) (continuing to apply general acceptance test in Arizona "notwithstanding legitimate criticism of Frye"), *cert. denied*, 114 S.Ct. 1578 (1994); *Washington v. Cissne*, 865 P. 2d 564, 569 (Wash. Ct. App. 1994) (acknowledging that Washington courts continue to employ Frye when determining admissibility of evidence based on novel scientific procedures), *review denied*, 877 P. 2d 1288 (Wash. 1994).
120. Rule 704(b) includes a specific limitation that is applicable only to cases in which an expert witness is testifying with respect to "the mental state or condition of a defendant in a criminal case." This rule precludes an expert witness from stating "an opinion or inference as to whether the defendant did or did not have the mental state or condition constituting an element of the crime charged or of a defense thereto." Fed. R. Evid. 704(b).
121. *Owen v. Kerr-McGee Corp.*, 698 F. 2d 236, 240 (5th Cir. 1983).
122. *Henson v. Indiana*, 535 N.E. 2d 1189, 1192 (Ind. 1989).
123. *West Virginia v. McCoy*, 366 S.E. 2d 731 (W. Va. 1988).
124. *Id.* at 737.
125. *Id.*
126. *Id.* (quoting *Kansas v. McQuillen*, 689 P. 2d 822 [Kan. 1984] [C.J. Schroeder, dissenting]).
127. *Id.*
128. *Minnesota v. Meyers*, 359 N.W. 2d 604 (Minn. 1984).
129. *Id.* at 609.
- 129a. *In re Rezulin Products Liability Litigation*, 309 F. Supp. 2d 531, 545-46 (S.D.N.Y. 2004).
- 129b. *Id.* (quoting *Andrews v. Metro North Commuter R. Co.*, 882 F. 2d 705, 708 (2d Cir. 1989)).
130. Fed. R. Evid. 403.
131. *Supra* note 1, at 579, 595 (quoting Weinstein, *Rule 702 of the Federal Rules of Evidence is Sound: It Should Not be Amended*, 138 F.R.D. 631, 632 [1991]).
132. *In re Paoli R.R. Yard PCB Litig.* ("Paoli I"), 916 F. 2d 829 (3d Cir.), *cert. denied*, 499 U.S. 961 (1991).
133. *Id.* at 855-859.
134. *In re Paoli R.R. Yard PCB Litig.*, 35 F. 3d 717, 735 (3d Cir. 1994) (quoting Paoli I, 916 F. 2d at 859-860).
135. *Id.* at 736.
136. *Id.*
137. *Id.* at 732.
138. *Id.* at 738-741.
139. *Hall v. Baxter Healthcare Corp.*, 947 F. Supp. 1387 (D. Or. 1996).
140. *Id.*
141. *Id.*
142. *Supra* note 21 at 1167, 1176.
143. *Id.*
144. McCormick, *Evidence* §321, at 900 (3d ed. 1984).
145. *Id.*
146. *Id.*
147. *See* 6 J. Wigmore, *Evidence* §1690 (1979); J. King, *The Law of Medical Malpractice in a Nutshell* 100-103 (1977); F. Rossi, *Expert Witnesses* 135-136 (1991).
148. *Id.*
149. Fed. R. Evid. 803(18).
150. *Matott v. Ward*, 399 N.E. 2d 532, 534 (N.Y. 1979).
151. *Palace Bar, Inc. v. Fearnot*, 381 N.E. 2d 858, 864 (Ind. 1978).
152. *See Cohen v. Albert Einstein Med. Ctr.*, 592 A. 2d 720 724 (Pa. Super. Ct. 1991), *appeal denied*, 602 A. 2d 855 (Pa. 1992).
153. *Supra* note 151.
154. *See Parker v. Employees Mut. Liab. Ins. Co.*, 440 S.W. 2d 43, 46 (Tex. 1969).
155. *McMahon v. Young*, 276 A. 2d 534, 535 (Pa. 1971).
156. *Id.*
157. *Supra* note 150.
158. *Id.*
159. Notes of Advisory Committee on 1972 Proposed Rules, Fed. R. Evid. 705.
160. *Id.*
161. Fed. R. Civ. P. 26(a)(2)(A).
162. Fed. R. Civ. P. 26(a)(2)(B).
163. *Sylla-Sawdon v. Uniroyal Goodrich Tire Co.*, 47 F. 3d 277 (8th Cir. 1995), *cert. denied*, 116 S.Ct. 84 (1995).
164. *Id.* at 284.
165. *Id.*
166. Fed. R. Civ. P. 26(b)(4)(A).
167. Fed. R. Civ. P. 26(b)(4)(C).
168. Fed. R. Civ. P. 26(b)(4)(B).
169. Fed. R. Crim. P. 16(b)(1)(E).
170. Fed. R. Crim. P. 16(b)(1)(C).

171. Notes of Advisory Committee on 1993 Amendment, Fed. R. Crim. P. 16.
172. Fed. R. Crim. P. 16(a)(1)(D).
173. Fed. R. Crim. P. 16(b)(1)(B).
174. *Id.*
175. Fed. R. Crim. P. 12.2(a).
176. Fed. R. Crim. P. 12.2(b).
177. ABA Model Code DR 7-109(C).
178. ABA Model Rule 3.4(b).
179. Comment 3 to ABA Model Rule 3.4.
180. ABA Formal Opinion 93-378 (Nov. 8, 1993).
181. *Id.*
182. *Id.*
183. *Id.*

