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Note

Medical Monitoring Funds: The Periodic Payment of Future Medical Surveillance Expenses in Toxic Exposure Litigation

by

AMY B. BLUMENBERG*

Pollution of ground water from hazardous waste sites,1 explosions at chemical plants, and other modern tragedies that release toxic substances into the environment have prompted the development of toxic tort litigation.2 Americans have been exposed to toxic substances in their homes,3

* Member, Third Year Class; B.A. 1987, Cornell University. The Author wishes to thank her mother, Selma Blumenberg, for her unwavering support of the Author's educational endeavors. The Author also wishes to thank the many individuals who provided her with information about their experiences litigating medical monitoring claims.

1. Some studies have estimated that over 90% of all hazardous chemical waste produced in the United States has been disposed of improperly. SENATE COMM. ON ENV'T AND PUB. WORKS, S. REP. NO. 848, 96th Cong., 2d Sess. 3 (1980) (citing Environmental Protection Agency (EPA) estimates). The EPA has also estimated that as many as 2000 of the 30,000-50,000 waste disposal sites in this country pose a potential public health or environmental threat. Jerold Oshinsky, Insurance Coverage Issues in Delayed-Manifestation Bodily Injury and Property Damage Claims Arising from Asbestos, Hazardous Substances, and Environmental Impairment Litigation, in FIFTH ANNUAL TOXIC TORT ADVOCACY INSTITUTE 214 (Sheila Birnbaum & David Gross eds., 1988).

2. Toxic substances are any chemical, biological, biochemical, or radioactive materials that cause immediate or long-term harm to people, animals, or the environment, such as asbestos, Agent Orange, benzene, diethylstilbestrol (DES), dioxin, formaldehyde, radiation, and vinyl chloride. Allan T. Slagel, Note, Medical Surveillance Damages: A Solution to the Inadequate Compensation of Toxic Tort Victims, 63 IND. L.J. 849, 849 n.1 (1988).


3. In a typical scenario, a residential drinking water supply is contaminated by the release of toxic substances from nearby industrial or dump sites. See, e.g., Merry v. Westinghouse Elec. Corp., 684 F. Supp. 847 (M.D. Pa. 1988); Ayers v. Jackson Township, 106 N.J.
at work,\textsuperscript{4} while serving in the military,\textsuperscript{5} and while going about their daily lives.\textsuperscript{6} Commentators overwhelmingly agree that the unique characteristics and complexities of toxic exposure litigation render traditional tort remedies inadequate to justly compensate victims of toxic exposure.\textsuperscript{7}


4. Exposure to asbestos in the workplace led to the filing of thousands of lawsuits against the manufacturer of asbestos. The Johns-Manville Corporation, the largest asbestos manufacturer, has been named as a defendant in over 20,000 lawsuits and predicts it will be named in a total of more than 50,000 by the year 2000. AEI Analysis, supra note 2. Cases dealing with asbestos-related employee claims include Herber v. Johns-Manville Corp., 785 F.2d 79 (3d Cir. 1986), and Mauro v. Owens-Corning Fiberglass, 225 N.J. Super. 196, 542 A.2d 16 (1988), aff'd sub nom. Mauro v. Raymark Indus., 116 N.J. 126, 561 A.2d 257 (1989).

Occupational exposure to hazardous substances other than asbestos has sparked litigation as well. See, e.g., Hagerty v. L & L Marine Servs., Inc., 788 F.2d 315, modified, 797 F.2d 256 (5th Cir. 1986) (seaman accidentally soaked with toxic chemicals while on duty as tankerman); Barth v. Firestone Tire & Rubber Co., 673 F. Supp. 1466 (N.D. Cal. 1987) (alleged exposure to benzene while working at tire manufacturing plant). Recently, former and current workers of the Rocky Flats nuclear weapons plant initiated litigation to secure, among other relief, the creation of a defendant-funded medical surveillance fund to monitor the health consequences of their occupational exposures to radioactive and nonradioactive hazardous substances. Building & Constr. Trades Dep't v. Rockwell Int'l Corp., 756 F. Supp. 492 (D. Colo. 1991). The Labor Department has determined that there are as many as 575,000 hazardous chemicals being used in U.S. workplaces. ILC Adopts Texts Concerning Safety in Use of Chemicals in the Workplace, Daily Rep. for Executives (BNA), at A-10 (June 26, 1990) [hereinafter ILC Adopts Texts].

5. Military personnel have been exposed to radiation emitted by nuclear bombs, both during actual wartime and during testing operations, and to chemicals such as the defoliant Agent Orange. AEI Analysis, supra note 2, at 7-8. See, e.g., In re Agent Orange Prod. Liab. Litig., 611 F. Supp. 1396, 1399-400 (E.D.N.Y. 1985), cert. denied, 487 U.S. 1234 (1986), aff'd in relevant part, 818 F.2d 179, 183 (2d Cir. 1987).

6. For example, a December 28, 1991 New York City subway fire trapped hundreds of people during rush hour for about forty minutes while smoke and reportedly toxic polychloride fumes flooded the area. Andrew Blum, Lifestyle Queries Roll Plaintiffs, NAT'L L.J., Mar. 11, 1991, at 3.

Toxic exposure victims often suffer immediate and direct physical injuries as a result of the exposure.\(^8\) Besides immediate visible health consequences, "environmental toxins tend to cause latent injuries—injuries that are not fully apparent at the time of or immediately after exposure."\(^9\) The potential long-term health consequences include cancer, dermatological injury, gastrointestinal disease, heart disease, respiratory illnesses, and musculoskeletal disorders.\(^10\) After exposure and prior to the manifestation of exposure-related symptoms, individuals may be advised to undergo periodic medical testing for exposure-related health problems.\(^11\) Legal commentators have urged legislators and courts to recognize a claim for presymptom, postexposure medical monitoring damages to provide individuals with the medical surveillance necessary to detect the onset of exposure-related diseases.\(^12\) In fact, the American Law Institute (ALI) recommended the recognition of a claim for medical surveillance as one of four major environmental tort liability reform measures in its two volume study, *Enterprise Responsibility for Personal Injury*, released in April 1991.\(^13\)

\(^8\) For example, in the days and weeks following a chemical explosion and fire at a wood treatment plant in Oroville, California, residents reported suffering from "burning eyes, nose and throat; skin rashes, hives, blisters and welts; severe sinus drainage and severe sinus headaches; nausea; cold sweats; and general malaise." Plaintiffs' Memorandum in Opposition to Motion for Partial Dismissal of the Second Amended Complaint, at 3, Corron v. Koppers Co., No. CIVS 88-0433, (E.D. Cal. June 15, 1990). See also Villari v. Terminix Int'l, Inc., 663 F. Supp. 727, 728 (E.D. Pa. 1987) (in the month after a pest control company employee spilled Aldrin in their basement, the Villari family suffered headaches, nausea, dizziness and general malaise).


\(^10\) 1 AMERICAN LAW INST., supra note 9, at 308; see also Ginsberg & Weiss, supra note 7, at 862 (mentioning various long-term mental and physical health effects as well as nonhealth related consequences, such as loss of income and community impact).

\(^11\) The need for ongoing medical surveillance is often supported by expert medical testimony. *See, e.g.*, Ayers, 106 N.J. at 599 n.12, 525 A.2d at 309 n.12 (plaintiffs' expert testifying that plaintiffs should undergo medical surveillance testing for a period ranging from one to three years after exposure to establish baseline data; then commence regular medical surveillance examinations at the onset of the risk of disease, estimated to be ten years after exposure; and continue annually thereafter).

\(^12\) *See, e.g.*, Ginsberg & Weiss, supra note 7; Trauberman, supra note 7; Elfenbein, supra note 7; Gara, supra note 7; McNamara, supra note 7; Strand, supra note 7. The terms "medical surveillance" and "medical monitoring" will be used interchangeably in this Note.

\(^13\) 2 AMERICAN LAW INST., supra note 9, at 381-82. The ALI reporters made the fol-
The individual and public health benefits of medical surveillance apparently have motivated an increasing number of courts to permit toxic exposure plaintiffs to pursue medical surveillance claims, even when no present injury exists. Despite this trend of recognizing medical monitoring "interrelated and mutually dependent proposals": (1) the use of science panels and court-appointed experts to assist courts with difficult causation issues; (2) the broad use of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) definition of the "discovery rule" for tolling statutes of limitations; (3) the award of proportionate compensation based on attributable fractions of disease; and (4) the award of medical monitoring damages to fund appropriate surveillance and investigation of the path followed by the disease within the exposed population.

14. A claim for medical surveillance is one theory of presymptom recovery pursued in toxic tort litigation. It must be distinguished from other toxic tort recovery theories such as increased risk of cancer and fear of cancer, which courts are less likely to support. Larry J. Ritchie, Claims for Fears in the 1990's (1989) (unpublished manuscript, on file with the Hastings Law Journal). The medical surveillance claim is designed to cover the cost of tests and services to allow early detection of latent diseases resulting from exposure to toxic substances. Id. In its April 1991 study the ALI declared that "treating medical surveillance costs as a compensable harm is not equivalent to reimbursing individuals for their fear of cancer nor for the pain and suffering associated with increased risk." 2 AMERICAN LAW INST., supra note 9, at 380. While the ALI supports medical monitoring claims, it does not "advocate compensating individuals who are stricken with 'cancerphobia.'" Id.

Courts have held that a plaintiff need not suffer a present injury in order to sustain a medical surveillance claim. Hagerty v. L & L Marine Servs., Inc., 788 F.2d 315, 319, modified, 797 F.2d 256 (5th Cir. 1986); Friends for All Children v. Lockheed Aircraft Corp., 746 F.2d 816, 827 (D.C. Cir. 1984). Courts also have held that the risk of contracting an exposure-related disease need not be quantifiable in order to sustain a medical surveillance claim. See, e.g., Ayers v. Jackson Township, 106 N.J. 557, 600, 525 A.2d 287, 309 (1987) (stating that "medical science may necessarily and properly intervene where there is a significant but unquantifiable risk of serious disease"). In order to sustain a claim for increased risk of cancer, however, courts will require the plaintiff to prove that the risk is not highly speculative. See, e.g., Id. at 598, 525 A.2d at 308 (rejecting plaintiffs' increased risk claim because risk of acquiring future diseases were unquantifiable). Fear of cancer claims are included in claims for emotional distress and usually require a present physical injury as well as a serious and reasonable fear of cancer. Ritchie, supra, at 12-14. In the absence of a present physical injury, however, at least one court has permitted plaintiffs to recover for fear of cancer when the evidence established that the fear was "genuine, serious and reasonable." Potter v. Firestone Tire & Rubber Co., 232 Cal. App. 3d 1114, 1130, 274 Cal. Rptr. 885, 904 (1990), petition for review granted, 806 P.2d 308, 278 Cal. Rptr. 836 (1991). For a thorough discussion of different toxic tort theories, see Ritchie, supra; DORE, LAW OF TOXIC TORTS, supra note 2, § 7.

15. The seminal case recognizing a claim for medical monitoring is Ayers, 106 N.J. 557, 525 A.2d 287 (discussed infra part II.C). See infra note 87 for a list of cases recognizing medical surveillance as an independent element of damages. Two federal courts sitting in diversity have recently indicated the probability that the Colorado and Pennsylvania Supreme Courts also will recognize a cause of action for medical monitoring. See In re Paoli R.R. Litig., 916 F.2d 829, 852 (3rd Cir. 1990), cert. denied, 111 S. Ct. 1584 (1991); Cook v. Rockwell Intl Corp., 755 F. Supp. 1468, 1477 (D. Colo. 1991) (stating that "c]ourts have generally accepted tort claims for medical monitoring").

toring claims, a handful of courts have refused to do so. Other courts make recovery for future medical surveillance difficult by requiring a plaintiff to prove either a manifest injury or that, as a result of the exposure, she has a reasonably probable or greater than average risk of developing a future disease.

In most of the cases recognizing medical monitoring claims, litigants pursued or courts awarded the traditional common-law lump sum of monetary damages. A few courts that have recognized a claim for medical surveillance expenses have adopted a more novel approach. According to these courts, the appropriate method of compensating toxic exposure victims for future medical monitoring necessitated by physical injury itself. See also infra note 57 (citing cases in which no present physical injury was required).

16. See, e.g., Ball v. Joy Mfg. Co., 755 F. Supp. 1344, 1372 (S.D. W. Va. 1990), aff'd sub nom. Ball v. Joy Technologies, Inc., No. 90-1537, 1991 U.S. App. LEXIS 17580 (4th Cir. Aug. 5, 1991) (recognizing the benefit of early diagnosis and treatment but refusing to recognize a medical monitoring tort claim because allowing medical monitoring recovery "could potentially devastate the court system as well as defendants"). See also Rheingold v. E.R. Squibb & Sons, No. 74 CIV 3420 (S.D.N.Y. Oct. 8, 1975), and Morrissy v. Eli Lilly & Co., 76 Ill. App. 3d 753, 394 N.E.2d 1369 (1979), in which the plaintiffs requested the creation of medical monitoring funds to provide medical treatment, as well as medical examinations. This point has been used to distinguish Rheingold and Morrissy from cases in which plaintiffs pursue "pure" medical monitoring claims, i.e., claims for diagnostic examinations and health studies but not for treatment. See In re Paoli, 916 F.2d at 851 n.25.

In her Note, Leslie Gara cites Rheingold and Morrissy, as well as the appeals court decision in Ayers, 202 N.J. Super. 106, 493 A.2d 1314 (1985), for the proposition that courts that refuse to recognize medical monitoring claims fail to distinguish between a plaintiff seeking compensation for a physical injury before the injury actually develops and a plaintiff requesting damages for the injury of having been exposed to a toxic substance at a level necessitating medical surveillance. Gara, supra note 7, at 285-86.

17. See, e.g., Herber v. Johns-Manville Corp., 785 F.2d 79, 83 (3d Cir. 1986). In Potter v. Firestone Tire & Rubber Co., 232 Cal. App. 3d 1114, 274 Cal. Rptr. 885 (1990), California's Sixth District Court of Appeal reversed a $142,975 medical monitoring award based partly on its conclusion that the court had no authority to uphold the award without proof that cancer was "reasonably certain" to occur. Id. at 1126, 274 Cal. Rptr. at 891-92. Two couples alleged that for seventeen years the defendant had improperly dumped toxic chemicals which leaked into their wells. The case now is pending before the California Supreme Court.

18. The general rule for recovery of future damages is that they must be reduced to their present worth and awarded in a single judgment. See Roger C. Henderson, Designing a Responsible Periodic-Payment System for Tort Awards: Arizona Enacts a Prototype, 32 Ariz. L. Rev. 21, 25 (1990) (stating that under the common-law system of awarding lump sum damages, "[t]he trier of fact determines all damages at the time of trial, whether they be past, present, or future"). In contrast, civil law systems previously have allowed payment of personal injury damages in periodic installments. Id. at 25 n.17.

ants' tortious conduct is to pay the expenses on a periodic basis out of a court-supervised trust fund or similar mechanism. The use of such an ongoing fund mechanism constitutes the periodic payment of damages awards—a method of paying damages that has gained popularity since the mid-1970s, particularly in the settlement context. Legislation in many states mandates periodic payments in specific types of lawsuits. For instance, many workers' compensation, medical malpractice, family support, and auto liability statutes mandate periodic payments. These statutes guide courts in implementing periodic payment plans in a variety of circumstances, but courts that have approved periodic payment of future medical surveillance expenses in toxic tort cases have, perforce, done so in the absence of legislative guidance. Consequently, these courts have relied on their equitable powers to fashion appropriate remedies.

20. In Ayers, the New Jersey Supreme Court recommended that trial courts appoint administrators to manage medical surveillance funds. While declining to upset the jury award of a lump sum, the New Jersey Supreme Court expressly stated that a court-supervised fund was the preferred method of compensating toxic tort victims for the cost of medical monitoring. Ayers, 106 N.J. at 610 & n.14, 525 A.2d at 314 & n.14. For other toxic exposure cases in which courts either expressly preferred medical monitoring funds over lump sum payments or permitted plaintiffs to pursue a fund remedy, see Barth v. Firestone Tire & Rubber Co., 673 F. Supp. 1466, 1476 (N.D. Cal. 1987); Burns v. Jaquays, 156 Ariz. 375, 381, 752 P.2d 28, 34 (Ct. App. 1988); Habitants Against Landfill Toxics v. City of York, [1985] 15 Envtl. L. Rep. (Envtl. L. Inst.) 20,937 (Pa. Ct. C.P. May 20, 1985). In Friends for All Children v. Lockheed Aircraft Corp., 746 F.2d 816 (D.C. Cir. 1984), a case involving a plane crash and not toxic exposure, the court affirmed the appropriateness of the trust fund mechanism over a lump sum award for medical surveillance. Id. at 835-36.

21. See JAMES ECK & JEFFREY UNGERER, STRUCTURING SETTLEMENTS 1 (1987). While the authors specifically examine periodic payment settlements to assist practitioners in designing and implementing structured settlement plans, much of the information is equally applicable to periodic payment judgments.

22. See Tom Elligett, The Periodic Payment of Judgments, 46 INS. COUNS. J. 130, 133 (1979) (stating that judgment debtors of modest means often are required to pay alimony periodically); id. at 134, nn.46-48 (discussing periodic payment provisions in no-fault automobile statutes); id. at 133 n.36 (discussing workers' compensation statutes); id. at 134 n.49 (noting medical malpractice actions); Henderson, supra note 18, at 27-28 (surveying the periodic payment statutes of over thirty states, most of which pertain only to medical malpractice actions); see also Michaela M. White, Strange Bedfellows: The Uneasy Alliance Between Bankruptcy and Family Law, 17 N.M. L. REV. 1, 31-32 (1987) (distinguishing between lump sum family support payments and family support payments paid periodically, and discussing the effect the form of payment has for bankruptcy law purposes).

23. One court has stated that "[w]ithout a comprehensive governmental response to the problem of compensating victims of toxic exposure, the only available remedy lies within the legal system." Ayers, 106 N.J. at 581, 525 A.2d at 299. Congress has recognized the need for ongoing medical surveillance in some circumstances. See The Occupational Safety and Health Act, 29 U.S.C. § 655(b)(7) (1988) (requiring employers to provide medical surveillance to "employees exposed to such hazards in order to most effectively determine whether the health of such employees is adversely affected by such exposure").

24. See Barth, 673 F. Supp. at 1476-78 (denying defendant's motion to dismiss plaintiff's medical monitoring claim on the ground that a claim lies in equity prior to the development of
This Note accepts the premise that future medical surveillance expenses should be compensated and examines the feasibility of using periodic payment plans such as structured settlements or court-supervised, defendant-funded monitoring funds to compensate plaintiffs for post-exposure, presymptom medical surveillance. Part I examines the development and recognition of the medical surveillance claim. The legal, practical, and public policy reasons supporting medical surveillance claims in toxic tort litigation are outlined to provide the reader with an understanding of the complex challenges toxic exposure victims face when they seek compensation for future medical surveillance. Part II examines the cases and legislation that have established periodic payments as an alternative to the traditional lump sum damages award in tort litigation. This Part also highlights the practical advantages and disadvantages of periodic payments, as well as the ethical and constitutional considerations involved. Part III examines the nexus between periodic payments and the claim for medical surveillance, including the reasons why the periodic payment of medical surveillance expenses may be more appropriate than awarding lump sum awards. This Part traces the outcome of previous efforts to establish court-supervised medical surveillance funds, foundations, or similar mechanisms, with special emphasis on the successful Fernald litigation settlement. Finally, in Part IV the author proposes a variety of considerations to guide practitioners in implementing and administering successful periodic payment plans for medical monitoring.

I. The Claim for Medical Surveillance

A. Traditional Tort Analysis Inadequately Addresses the Unique Characteristics of Toxic Tort Litigation

In its April 1991 tort reform study the ALI reported that, despite conservative estimates of approximately 10,000 environmentally related diagnosable symptoms); Ayers, 106 N.J. at 608-09, 525 A.2d at 314 (stating that "the use of a court-supervised fund to administer medical-surveillance payments . . . is a highly appropriate exercise of the Court's equitable powers"); see also 30A C.J.S. Equity § 599 (1965) (stating that "the court has a broad discretion in framing its decrees in order to adapt the relief to the circumstances of particular cases").


26. See, e.g., Gara, supra note 7, at 303 (concluding that "one of the failures of the tort system thus far has been the great obstacles placed between the victim of hazardous substance exposure and her ability to obtain compensation through the courts for the costs of required medical testing and monitoring").

In Barth, the court observed that:

[C]urrent medical science cannot state whether or how exposure to toxic chemicals affects individuals. It cannot yet detect the present effect of the exposure, and,
cancer deaths per year, there has been comparatively little litigation alleging personal injury as a result of exposure to hazardous substances. Between 1983 and 1986, for example, less than fifty million dollars was awarded to plaintiffs in environmental tort cases to reimburse them for the costs of personal injuries. In sharp contrast, approximately 4.8 billion dollars was paid to reimburse medical malpractice plaintiffs for personal injuries. This suggests that the number of toxic exposure cases in which plaintiffs sought compensation for ongoing medical monitoring, either exclusively or as a component of a larger personal injury award, is small. Legal commentators attribute this to the fact that traditional tort analysis inadequately addresses the unique characteristics of toxic tort litigation; the result is that severe technical, legal, and economic obstacles deter toxic tort victims from initiating litigation by making it difficult for toxic tort plaintiffs to win a reasonable recovery.

The common law tort system was developed to address conflicts raised by simple, straightforward traumatic injuries. Ordinary tort cases, such as automobile accidents, usually involve injuries that can be detected immediately, such as bruises and broken bones. Toxic tort injuries, however, may remain undetected for years because cancer and other exposure-related diseases have long latency periods, during which time the ailment cannot be clinically diagnosed. Because of the long latency periods, toxic exposure victims may fail to initiate an action because they do not know that they have been harmed by a toxic substance.

therefore, it cannot supply to the legal system information concerning the nature of present injury or of causation. In the absence of that information, the legal system now struggles to adapt.

Barth, 673 F. Supp. at 1469.


28. Id. at 355-56.

29. Id. at 356.

30. See generally 2 AMERICAN LAW INST., supra note 9, ch. 11 (discussing problems posed by latency periods, abridged evidence of exposure, and probabilistic evidence of causation). See also Ginsberg & Weiss, supra note 7, at 924-28; Trauberman, supra note 7, at 189-91; Strand, supra note 7, at 584-86. These commentators discuss various inadequacies of traditional tort analysis such as the difficulty environmental plaintiffs confront in identifying parties responsible for environmental damage, the risk that such parties are judgment-proof, the expense of retaining expert witnesses in specialized fields such as toxicology and epidemiology, and the cost and complexity of protracted multi-party litigation.

31. Slagel, supra note 2, at 851 (citing Strand, supra note 7, at 576-77).

32. Id. at 852 n.15. The latency period is the time between exposure and the appearance of symptoms. Michael Dore, A Commentary on the Use of Epidemiological Evidence in Demonstrating Cause-In-Fact, 7 HARV. ENVT'L. L. REV. 429, 429 n.2 (1983) [hereinafter Dore, Epidemiological Evidence in Demonstrating Cause-In-Fact]. Latency periods of 1 to 50 years have been cited by commentators. Id.
Two procedural obstacles that stem from the long latency periods of exposure-related illnesses may hinder recovery in toxic exposure cases. First, the exposure-related illness may not be discovered until long after the applicable statute of limitations has run, thus barring the plaintiff from recovery. In its 1986 amendments to the Comprehensive Environmental Response, Compensation, and Liability Act of 1980, (CERCLA or Superfund), Congress enacted a mandatory federal commencement date defined as "the date the plaintiff knew (or reasonably should have known) that the personal injury . . . [was] caused or contributed to by the hazardous substance . . . concerned." The ALI recently proposed that all jurisdictions apply the same "discovery rule" in legal settings in which the federal statute does not apply. Most jurisdictions have already adopted a version of the discovery rule that tolls the statute until the injury is discovered or should have been discovered.

The second procedural obstacle is the single controversy rule. The application of this rule may bar recovery for future harm when the initial suit seeks only compensation for the immediate consequences of the toxic exposure. If an exposed individual discovers physical injury after the initial litigation concludes, the rule operates to bar the individual from seeking compensation for physical injuries discovered after the first resolution. In recognizing this result as unjust, a few courts have determined that "neither the statute of limitations nor the single controversy rule should bar timely causes of action in toxic-tort cases instituted after discovery of a disease or injury related to tortious conduct." The trend among the states has been to create doctrines, generically called "second

34. Id. §§ 9658(a)(1), 9658(b)(4)(A); see also Sheila L. Birnbaum, Statutes of Limitations in Environmental Suits: The Discovery Rule Approach, TRIAL, Apr. 1980, at 38.
35. 2 AMERICAN LAW INST., supra note 9, at 364, 381. The term "discovery rule" generally refers to the rule that a cause of action will not accrue until the plaintiff knows, or with reasonable diligence, should have known of the alleged tort. The term is most often applied in the medical malpractice context but has been used in others as well. See BLACK'S LAW DICTIONARY 419 (5th ed. 1979).
36. Trauberman, supra note 7, at 191 & n.65. An example of a liberal discovery rule is the New Jersey statute, which tolls the statute until the victim has discovered both the injury and the facts suggesting that a third party might be responsible. Ayers v. Jackson Township, 106 N.J. 557, 583, 525 A.2d 287, 300 (1987).
37. The single controversy rule, also referred to as the single recovery rule, is the tort doctrine which requires that a party include in a single action all related claims against an adversary. DANIEL W. HINDERT ET AL., STRUCTURED SETTLEMENTS AND PERIODIC PAYMENT JUDGMENTS § 1, at 1-6 to 1-7 (1986 & Supp. 1988).
38. Ayers, 106 N.J. at 583, 525 A.2d at 300.
39. Id. at 584, 525 A.2d at 300; see also Hagerty v. L & L Marine Servs., Inc., 788 F.2d 315, 320-21, modified, 797 F.2d 256 (5th Cir. 1986) ("At least in the toxic chemical or asbestos cases, the [subsequent exposure-related disease] should be treated as a separate cause of action for all purposes. There should be no cause of action or beginning of the running of limitations until the diagnosis of the disease.").
injury rules," which, under certain circumstances, allow a new statute of limitations period to start running for subsequently manifested injuries.\textsuperscript{40} A court in New York recently adopted the second-injury rule for asbestos cases.\textsuperscript{41}

In addition to these two procedural barriers, toxic tort victims must overcome a host of practical obstacles. Those individuals who are aware of their exposure to hazardous substances may be unable to identify the parties against whom claims may be pursued. By the time an exposure-related harm manifests itself, parties that engaged in toxic dumping and other hazardous endeavors may be out of business and, therefore, out of reach of the courts.\textsuperscript{42} The covert, illicit practices of unscrupulous polluters also may prevent exposure victims from identifying potential defendants.\textsuperscript{43}

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\item[41.] In Fusaro v. Porter-Hayden Co., 145 Misc. 2d 911, 548 N.Y.S.2d 856 (Sup. Ct. 1989), the court permitted the plaintiff employee to seek compensation for mesothelioma (a cancer), which the employee had just recently developed, even though the same employee previously had sued the defendant asbestos suppliers for asbestosis. \textit{Id.} at 918, 548 N.Y.S.2d at 860. The court accepted the plaintiff's proof that the cancer and his earlier condition of asbestosis involved different disease processes in the body. \textit{Id.} at 915, 548 N.Y.S.2d at 859. The decision is on appeal. Rheingold & McGowan, supra note 40, at 4.

\item[42.] Ginsberg & Weiss, supra note 7, at 927.

\item[43.] \textit{Id.} at 925. The conduct of Monsanto, a producer of Agent Orange, illustrates the "covert, illicit practices" cited by Ginsberg and Weiss. In the course of litigating workers' claims for occupational exposure to dioxin, several memoranda surfaced that revealed Monsanto's refusal to fully and honestly respond to employee requests for chemical-exposure and occupational-disease data. In a November 1977 memorandum Monsanto directed its plant managers to "resist" employee and union requests for the data. John Riley, \textit{A Silver Bullet—Or Merely a Dud?: Lawyers Take Aim at Dioxin}, NAT'L L.J., July 23, 1984, at 1. The memorandum instructed operating personnel to issue evasive responses to employee questions and to refer employee inquiries to St. Louis where "as limited a response as deemed appropriate will be developed." \textit{Id.}

The secret investigation by Alyeska Pipeline Service Company is a more recent example of the illicit practices of polluters. In the face of international criticism stemming from lapses in Alyeska's environmental and safety programs, the company launched an aggressive campaign to silence critics and avoid embarrassing disclosures. Alyeska hired the Wackenhut Corporation, the nation's third largest private security company, to launch a secret investigation of
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The sheer expense of toxic tort litigation serves as a practical barrier for many toxic exposure victims. Individuals confronted with hazardous substances in their homes or at work are often of limited or modest financial means.\textsuperscript{44} Individuals who reside near industrial areas where hazardous substances are used or produced, and those who reside near toxic waste dumps, are usually ill-equipped financially to pursue their claims against well financed corporate or government defendants.\textsuperscript{45} As a result of these practical problems, toxic exposure victims may settle earlier and for less money than other plaintiffs.

The burden of proving legal causation is perhaps the most difficult obstacle confronting toxic exposure plaintiffs.\textsuperscript{46} Four potential causes of

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Charles Hamel, a former oil broker who was battling several oil companies in court. Alyeska believed that Mr. Hamel had become a conduit for leaked documents that incriminated the company. Alyeska was infuriated after incriminating documents turned up in the hands of regulators and the news media. During the course of the illicit investigation, Wackenhut agents bought sophisticated eavesdropping equipment and set up a sting operation. The agents used phony credentials from a fake environmental group to gain entry to Mr. Hamel's home, where they stole documents from his desk. See Keith Schneider, \textit{A Case of Heavy-Footed Gumshoes}, \textit{N.Y. Times}, Nov. 10, 1991, at E3.

Even as the author was researching and writing this Note, reports surfaced in the media that Dow Corning, the manufacturer of silicone breast implants, may have disregarded its own safety inspectors' memoranda outlining concerns about the long-term health effects of the breast implants, and withheld safety information from government regulators and consumers. See, e.g., Tamar Lewin, \textit{As Silicone Issue Grows, Women Take Agony and Anger to Court}, \textit{N.Y. Times}, Jan. 19, 1992, § 1, at 1, 13 (stating that a major portion of a San Francisco jury's $7.2 million damage award represented punitive damages against Dow Corning for fraud and misrepresentation of its safety studies).

\textsuperscript{44} According to one survey of the Los Angeles basin, a majority of the city's economically disadvantaged population live in the most polluted areas. \textit{Home Street, USA: Living With Pollution}, \textit{GREENPEACE}, Oct./Nov./Dec. 1991, at 8, 10. This same group also is disproportionately employed in the state's polluting industries. \textit{Id}.

In Chicago the Altgeld Gardens housing project is called "the toxic donut" because it is surrounded by landfills, incinerators and factories. \textit{Id}. at 13. The 150,000 residents of Chicago's southeast side live with 50 active or closed commercial hazardous waste landfills, 100 factories (including seven chemical plants and five steel mills), and 102 abandoned toxic waste dumps. \textit{Id}.

\textsuperscript{45} \textit{See} Ginsberg & Weiss, \textit{supra} note 7, at 924 (stating that, "for plaintiffs who cannot pay for medical treatment or alternative housing, a legal remedy permeated with uncertainty and delay may be equivalent to no remedy at all, and the lure of a prompt settlement, however inadequate, may be irresistible") (emphasis in original).

\textsuperscript{46} For a complete discussion of proof of causation problems in toxic tort litigation see 2 \textit{AMERICAN LAW INST.}, \textit{supra} note 9, ch. 11 (discussing the scientific and legal causation problems posed by environmental torts, and offering solutions); Rosenberg, \textit{supra} note 7, at 855-60 (illustrating how traditional causation standards make it impossible for plaintiffs to prove causation in mass exposure cases, and offering a "public law" alternative); \textit{see also} Ginsberg & Weiss, \textit{supra} note 7, at 922-24 (discussing difficulty of proving both that a particular toxin caused an illness and that defendant was the source of that toxin as opposed to other potential sources); Trauberman, \textit{supra} note 7, at 197-201 (same); Stephen M. Soble, \textit{Statute, A Proposal for the Administrative Compensation of Victims of Toxic Substance Pollution: A Model Act}, 14 \textit{HARV. J. LEGIS.} 683, 706 (1977) (discussing extensive scientific data required to
action are available to plaintiffs litigating environmental torts: trespass, nuisance, strict liability, and negligence. Early environmental tort law was based on the trespass and nuisance doctrines and was aimed primarily at protecting the property rights of private individuals. In the late 1950s and early 1960s courts began to apply these traditional doctrines to environmental claims; industrial emissions such as chemical dusts and fumes were declared trespasses when they caused damage to neighboring property, and nuisance claims were permitted when no physical entry existed.

More recently, environmental tort plaintiffs seeking redress for personal injury have relied on both strict liability and negligence theories. Some environmental tort plaintiffs have attempted to recover under a strict liability theory by arguing that their injuries resulted from defendants' "ultrahazardous" activities. However, most environmental tort plaintiffs rely on a negligence theory for recovery, requiring them to show by a preponderance of the evidence that the defendant's behavior was a substantial factor in causing their injuries. Scientific uncertainty about cancer and other exposure-related diseases with long latency periods exacerbates a toxic tort claimant's ability to establish such a cause-in-fact or substantial relationship between her injury and her exposure to a particular toxic substance.

show causation and noting that even full-scale studies do not guarantee success in proving causation; Gara, supra note 7, at 274 (latency period between exposure to toxin and development of disease is often lengthy, making it difficult to prove that a certain toxin at issue in a toxic tort case, as opposed to some other toxin, actually caused the plaintiff's injury); McNamara, supra note 7, at 342-43 (same); Slagel, supra note 2, at 853-54 (physiological mechanisms of diseases caused by toxic torts are often not well understood, making it difficult for plaintiff to establish cause-in-fact). These commentators highlight the difficulties that arise in proving causation in toxic tort cases. See also Joseph Sanders, The Bendectin Litigation: A Case Study in the Life Cycle of Mass Torts, 43 HASTINGS L.J. 301 (1992) (detailed analysis of the evolving legal treatment of causation in the litigation surrounding the drug Bendectin. While the Bendectin litigation was based on products liability law rather than toxic tort law, similar causation issues are involved.).

47. See Ginsberg & Weiss, supra note 7, at 880-913.
48. See 1 AMERICAN LAW INST., supra note 9, at 309-10. Trespass prohibits unauthorized entry or physical invasion upon another's land, while nuisance prohibits the interference with a person's use or enjoyment of her property. Id.
49. Strict liability for "ultrahazardous" activity may be invoked only when an activity is considered "abnormally dangerous." 2 AMERICAN LAW INST., supra note 9, at 365 (citing RESTATEMENT (SECOND) OF TORTS § 520 (1977)).
50. Trauberman, supra note 7, at 197.

The ALI cites four types of uncertainty that one might encounter in proving hazardous substance causation: (1) trans-scientific uncertainty (arises when scientific issues are not amenable to scientific proof); (2) confidence interval uncertainty (results from gaps in statistical
Litigants must employ expert witnesses in toxicology, epidemiology, and related disciplines to prove that the claimed health disorders either were or were not caused by the claimants' exposure to specific toxic substances. The experts may present evidence to prove causation in a variety of forms such as cluster analysis, short-term molecular assays, animal bioassays, and epidemiological studies. Various courts have stressed their preference for epidemiological studies. Commentators have cautioned that public health agencies and others who gather and use epidemiological data can manipulate it to avoid finding health problems that may have resulted from exposure. Because the toxic tort plaintiff's burden...
den of proving causation is often insurmountable, commentators have proposed alternatives, including the application of modified principles of causation, which they believe would lessen the burden.\textsuperscript{55}

Besides the difficulties that confront environmental tort plaintiffs in general, those who seek recovery for future medical surveillance face additional challenges. For example, traditional tort doctrine requires that a plaintiff prove the existence of a present injury in order to recover damages for that injury. Courts have denied medical surveillance claims because at the time of litigation the claimant lacks visible physical injuries on which to base a damage award.\textsuperscript{56} Other courts have dispensed with

\textsuperscript{55} See, e.g., Ginsberg & Weiss, supra note 7, at 938 (proposing the use of a presumption of causation “if the claimant makes a prima facie showing that exposure to a toxic waste could have been a substantial factor in the causation of an injury or disease”); Soble, supra note 46, at 709-14, 742-48 (advocating modified causation requirements based on a Japanese model); Strawn & Legator, supra note 53, at 63 (proposing the acceptance of animal data as a surrogate for assessing the cause of exposure-related diseases in humans); Trauberman, supra note 7, at 263-65 (commenting that a toxic exposure victim should benefit from a rebuttable presumption of causation absent a showing that she “knowingly and voluntarily encountered” the risk).

Trauberman discusses three methods of modifying proof of causation requirements. The first method is to use sliding-scale burdens of proof that vary according to the risks and benefits of the activity allegedly responsible for the harm. The second method is to assess the risk of harm to a group of persons exposed to a chemical and provide fractional recoveries to the entire group. Trauberman rejects the first two approaches and, instead, advocates the adoption of the third approach, which utilizes a system of rebuttable presumptions. Trauberman, supra note 7, at 225-30. Soble proposes similar modifications of causation requirements. See Soble supra note 46, at 743-47.

The ALI proposes a different causation modification. Under the ALI proposal, if the state of scientific knowledge at the time of the environmentally risky activity gave no signal that the activity posed a substantial risk to human health, then strict liability could not be imposed. However, strict liability could be imposed regardless of the state of knowledge if the defendant failed to employ available technology that could have eliminated or reduced the risk in question. 2 AMERICAN LAW INST., supra note 9, at 368. According to the ALI, this method would deter defendants from failing to apply available safety precautions, while reducing what some commentators refer to as the “overdeterrence” stemming from the threat of absolute strict liability. \textit{Id.}

For a general discussion of how courts can best guide litigants in their use of epidemiological data, see Dore, supra note 32 (concluding that courts can solve the problems inherent in the use of epidemiological data by instituting stringent and consistent controls on such use).\textsuperscript{56} See Potter v. Firestone Tire & Rubber Co., 225 Cal. App. 3d 213, 232, 274 Cal. Rptr. 885, 896 (1990), \textit{petition for review granted}, 806 P.2d 308, 278 Cal. Rptr. 836 (1991). The trial court had awarded the plaintiffs the cost of periodic medical monitoring. In rejecting the trial
the present-injury requirement in recognizing claims for future medical surveillance.\textsuperscript{57} Commentators note that courts could resolve the present-injury dilemma by recognizing that an individual who is forced to undergo medical testing as a result of a defendant's conduct has suffered a present, compensable injury, i.e., exposure to a level necessitating medical surveillance.\textsuperscript{58} These and other difficulties faced by a toxic tort claimant support the need for the legal system to depart from traditional tort analysis and to recognize a claim for postexposure, presymptom medical surveillance.

B. Legislative Responses Fail to Adequately Address Medical Surveillance Needs

CERCLA\textsuperscript{59} and the Resource Conservation and Recovery Act (RCRA)\textsuperscript{60} constitute the primary legislation dealing with hazardous waste and other toxic substances. This legislation, which is directed toward regulation of hazardous waste and disposal, provides no adequate remedy for compensating toxic exposure victims for personal injuries.\textsuperscript{61} RCRA's stated purpose was to monitor hazardous wastes from "cradle-to-grave," while CERCLA was designed as a "comprehensive" package aimed at "removing—or at least containing—the hazardous remnants of past practices."\textsuperscript{62} Although it is generally recognized that CERCLA provides no private remedy for personal injury,\textsuperscript{63} federal district courts

\begin{itemize}
\item court's award, the appellate court declined to dispense with the physical-injury requirement, even though it recognized that "some courts have circumvented the problem of an absence of physical injury by simply holding that no physical injury is required." \textit{Id.}


\item \textit{See generally} Ginsberg & Weiss, \textit{supra} note 7, at 930 (advocating recognition of a medical surveillance claim based on the view that having to undergo medical testing is, in itself, a present, compensable injury, but arguing that compensation should be through the use of an administrative fund, rather than a judicial remedy); Soble, \textit{supra} note 46 (same); Trauberman, \textit{supra} note 7 (same); Gara, \textit{supra} note 7 (advocating recognition of a medical surveillance claim in toxic tort litigation); Slagel, \textit{supra} note 2 (same).


\item \textit{See Superfund Section 301(e) Study Group for the Senate Comm. on Env't and Pub. Works, 97th Cong., 2d Sess., Injuries and Damages From Hazardous Wastes—Analysis and Improvement of Legal Remedies} (Comm. Print 1982) (discussing problems such as statutes of limitation, apportionment of liability among defendants, and proof of causation that hinder compensation of hazardous waste victims).

\item McNamara, \textit{supra} note 7, at 340 (quoting 40 C.F.R. § 260 (1980), and Ayers v. Jackson Township, 106 N.J. 557, 580, 525 A.2d 287, 298 (1987)).

\item \textit{Id.}
\end{itemize}
are divided over the issue of whether medical monitoring costs can be recovered as a "necessary cost of response" under CERCLA. 64

Courts that have recognized medical monitoring claims under CERCLA have found that medical testing expenses incurred to assess the effect of the toxic exposure on the public, versus on an individual's health, are recoverable response costs. 65 In denying a motion to dismiss a claim for medical monitoring under CERCLA, the court in Brewer v. Ravan stated, "[T]o the extent that plaintiffs seek to recover the cost of medical testing and screening conducted to assess the effect of the release or discharge on public health or to identify potential public health problems presented by the release, . . . they present a cognizable claim under [CERCLA]." 66 Evidently, the Brewer court distinguished medical expenses incurred to treat personal injuries from those medical expenses incurred to assess the effect of the release or discharge on the public health. According to the Brewer court, the former did not qualify as "necessary costs of response" under CERCLA, but the latter did. 67

Despite the Brewer line of cases, the trend among the federal courts appears to be to reject recognition of a medical monitoring claim under CERCLA. For instance, in Ambrogi v. Gould, Inc. 68 the court determined that, "[a]fter reviewing the language of CERCLA, the legislative history and the case law, we believe that costs of medical screening and/or future medical monitoring are clearly not 'necessary costs of response' under [CERCLA]." 69 The court in Keister v. Vertac Chemical Corp. 70 held that medical monitoring costs are not recoverable under CERCLA because they do not qualify as costs of "removal" or "remedial" action. 71

67. Id. In reaching its conclusion, the Brewer court cited an earlier decision, Jones v. Inmont Corp., 584 F. Supp. 1425, 1429-30 (S.D. Ohio 1984), in which the court made a similar distinction between medical services to treat personal injuries and medical screening to assess the public health effects of a particular discharge or release. Id.

Other cases in which district courts have recognized monitoring as response costs under CERCLA include Cook v. Rockwell Int'l Corp., 755 F. Supp. 1468, 1474 (D. Colo. 1991) (following Brewer rationale in denying defendants' motion to dismiss plaintiffs' CERCLA claims to recover costs of medical testing to monitor environmental effects of radiation releases, but granting motion to dismiss for all other medical testing costs under CERCLA); Lykins v. Westinghouse Elec. Corp., 27 Env't Rep. Cas. (BNA) 1590 (E.D. Ky. 1988) (adopting Brewer rationale).
71. Id. at 20,678. Other cases in which district courts have refused to allow recovery of medical monitoring costs under CERCLA include Woodman v. United States, 764 F. Supp. 1467, 1470 (M.D. Fla. 1991) (emphasizing that medical monitoring costs for individual plain-
In October 1986 Congress passed the Superfund Amendments Reauthorization Act (SARA),\(^2\) which contained sweeping revisions of CERCLA, including the establishment of a new taxing mechanism and requirements for more stringent cleanup standards, site evaluations, and health risk evaluations.\(^3\) SARA authorized the creation of a new Agency for Toxic Substances and Disease Registry (ATSDR), whose job is to perform health assessments on every waste disposal site on the National Priorities List to investigate the possibility of disease arising out of hazardous waste sites.\(^4\) While the information generated by the ATSDR eventually might be used by toxic exposure litigants in pursuing their claims, the legislation does not provide compensation for toxic exposure victims' medical monitoring.

The need for workplace medical surveillance has recently been addressed in different fora. The International Labor Organization (ILO) at a June 1990 conference adopted the texts of a convention and a recommendation concerning the safe use of chemicals in the workplace.\(^5\) The recommendation emphasized the need for employers to limit workers' exposure to hazardous chemicals and stated that employers should be responsible for medical surveillance of prospective health hazards.\(^6\) Four democratic legislators recently proposed the Comprehensive Occupational Safety and Health Reform Act, which would encourage employers and employees to take an active role in identifying potential hazards before injuries and illnesses occur, rather than focusing on inspections and the threat of civil fines as the current Occupational Safety and Health Act (OSHA) does.\(^7\) The OSHA reform legislation would require

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\(^5\) ILC Adopts Texts, supra note 4, at A-10.

\(^6\) Id.

the National Institute for Occupational Safety and Health to submit recommendations for revisions of permissible exposure limits for toxic substances at least once every three years.\textsuperscript{78} The legislation also would require the promulgation of standards for exposure monitoring and medical surveillance of employees.\textsuperscript{79} The new standards would require employers to supply some type of surveillance and monitoring programs to control and mitigate the health effects of exposures.\textsuperscript{80} In another workplace medical monitoring victory a bankruptcy court approved a settlement that established a voluntary employees' beneficiary association (VEBA) to provide lifetime diagnostic medical surveillance benefits to employee participants.\textsuperscript{81} The VEBA was funded with a lump sum payment from the employer's bankruptcy estate.\textsuperscript{82} The Internal Revenue Service ruled that reimbursements for medical expenses incurred by VEBA participants were tax deductible. Although these and similar workplace medical monitoring developments certainly are positive, they do not replace the need for comprehensive recognition of all toxic exposure victims' right to medical surveillance.\textsuperscript{83}

C. Public Policy Considerations Support a Claim for Postexposure, Presymptom Medical Surveillance

Under traditional tort doctrine, a plaintiff in a typical personal injury case may recover reasonable medical expenses, past and future, which she incurs as a result of a demonstrated injury.\textsuperscript{84} The "avoidable consequences rule" requires the plaintiff to submit to medically advisable treatment since failure to do so may bar future recovery for a condition.

\textsuperscript{78} Id.

\textsuperscript{79} Id.

\textsuperscript{80} Job Safety: OSHA to Continue Broadening Scope of Worker Protection, DAILY REP. FOR EXECUTIVES (BNA), at S-34 (Jan. 17, 1991).


\textsuperscript{82} Id.

\textsuperscript{83} Id.

\textsuperscript{84} Charles T. McCormick, HANDBOOK ON THE LAW OF DAMAGES § 90 (1935); see, e.g., Hagerty v. L & L Marine Servs., Inc., 788 F.2d 315, 319, modified, 797 F.2d 256 (5th Cir. 1986).
the plaintiff could have alleviated or avoided. The extension of these two tort doctrines—the allowance of prospective medical expense damages and the avoidable consequences rule—provides the foundation for permitting a claim for future medical surveillance expenses. Based on this foundation, a steadily increasing number of courts have recognized medical surveillance expenses as an independent element of damages. These courts have relied heavily on public policy considerations in justifying claims for postexposure, presymptom medical surveillance.

Friends for All Children v. Lockheed Aircraft Corp. is an early case recognizing the need for such a claim. Friends for All Children, the legal guardian for Vietnamese orphans who survived an airplane crash, alleged that as a result of the decompression of the plane compartment and the crash itself, the children suffered from a neurological disorder called Minimal Brain Dysfunction (MBD). Although this was not a toxic tort case, the court, in determining whether or not to grant a preliminary injunction, faced many of the same considerations that arise in toxic tort litigation. Friends for All Children requested a preliminary injunction to require the defendant to pay for diagnostic examinations and medical treatment pending the outcome of the trials on the merits. The district court declared that the preliminary injunction was "extraordinary relief," and relied on several public policy factors in granting it. First, the plaintiffs had no adequate remedy at law because the extreme delay

85. The avoidable consequences rule is the tort doctrine that requires plaintiffs to take any available remedial steps in order to mitigate damages. McCormick, supra note 84, § 33. See also Hagerty, 788 F.2d at 319.
86. Slagel, supra note 2, at 862-63.
87. Cases in which medical surveillance expenses were recognized as an independent element of damages include Hagerty, 788 F.2d at 319 (stating that "the reasonable cost of those checkups [to ensure early detection and treatment of exposure-related disease] may be included in a damages award to the extent that, in the past, they were medically advisable and, in the future, will probably remain so"); Herber v. Johns-Manville Corp., 785 F.2d 79, 83 (3d Cir. 1986) (stating that "New Jersey recognizes the cost of preventative monitoring occasioned by a tort as an independent element of damages"); Friends for All Children v. Lockheed Aircraft Corp., 746 F.2d 816, 826 (D.C. Cir. 1984) (stating that "when a defendant negligently invades this interest [in avoiding expensive diagnostic examinations] . . . it is elementary that the defendant should make the plaintiff whole by paying for the examinations") (footnote omitted); Johnson v. Armstrong Cork Co., 645 F. Supp. 764, 769 (W.D. La. 1986); Ayers v. Jackson Township, 106 N.J. 557, 606, 525 A.2d 287, 312 (1987) (holding that "the cost of medical surveillance is a compensable item of damages where the proofs demonstrate . . . that such surveillance . . . is reasonable and necessary"); Askey v. Occidental Chem. Corp., 477 N.Y.S.2d 242, 247, 102 A.D.2d 130 (App. Div. 1984) (stating that "[t]he future expense of medical monitoring, could be a recoverable consequential damage provided . . . that such expenditures are 'reasonably anticipated' to be incurred by reason of [plaintiffs'] exposure").
88. 746 F.2d 816 (D.C. Cir. 1984).
89. Id. at 819.
90. The case before the court was a test case. Other trials would likely follow pending the resolution of the test case.
91. Friends for All Children, 746 F.2d at 822.
of the complex litigation would render an ultimate damage award inadequate to remedy the immediate medical surveillance needs of the plaintiffs; second, the societal interest in fostering public health would be undercut by leaving undiagnosed the children’s potentially deteriorating medical condition; requiring the defendant to pay for diagnostic examinations increased the possibility of early detection and treatment, which could reduce the amount of compensatory damages the defendant would have to pay in the long run; and finally, the injunction would serve the public interest because the examination would produce hard medical data on the children’s condition, which would aid in the resolution of the litigation.

On appeal, the appellate court rejected Lockheed’s implicit claim that having to undergo diagnostic examinations does not in itself constitute an injury. The appellate court held that tort law should compensate plaintiffs for diagnostic examination without proof of actual injury. The court determined that:

A cause of action allowing recovery for the expense of diagnostic examinations . . . will, in theory, deter misconduct . . . . The cause of action also accords with commonly shared intuitions of normative justice which underlie the common law of tort . . . . The [defendant], through his negligence, caused the plaintiff . . . to need specific medical services—a cost that is neither inconsequential nor of a kind the community generally accepts as part of the wear and tear of daily life.

The court also noted that the expense of medical services could deter exposed individuals from seeking treatment when it stated that “medical expenses running into the thousands of dollars would likely constitute a formidable obstacle to families of moderate means.”

Ayers v. Jackson Township was the first toxic exposure case in which a state’s highest court upheld a jury verdict awarding the plaintiff future medical surveillance costs. The plaintiffs were residents who sued their township for damages sustained when their well water was contaminated. Toxic pollutants had leached into the local aquifer from the township landfill. The original jury verdict compensated the plaintiffs for the future cost of medical surveillance to monitor for the onset of

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92. Id. at 826.
93. Id. at 825. The court discussed a hypothetical in which Jones, a pedestrian, is hit by Smith, a motorbike rider. Doctors recommend that Jones undergo a battery of tests to determine whether he has suffered any internal injuries. Even if the tests prove that Jones sustained no physical injuries, he should be able to recover the cost of the diagnostic exams, the need for which was proximately caused by Smith’s negligence. Id.
94. Id. at 825.
95. Id. at 836.
97. The Ayers case has been discussed widely by legal commentators. See, e.g., McNamara, supra note 7, passim.
cancer and other diseases. The appellate division set aside the award of medical surveillance expenses after determining that the claim was too speculative to warrant recognition. According to the appellate division, it was “impossible to say that [the] defendant ha[d] so significantly increased the ‘reasonable probability’ that any of the plaintiffs will develop cancer so as to justify imposing upon [the] defendant the financial burden of lifetime medical surveillance for early clinical signs of cancer.”

The New Jersey Supreme Court criticized the appellate division's reversal of the medical surveillance award because, under the appellate division ruling, any plaintiff who obtains regular or periodic medical surveillance to detect adverse health consequences of her toxic chemical exposure personally bears the expense. The supreme court cited the “important public health interest in fostering access to medical testing for individuals whose exposure to toxic chemicals creates an enhanced risk of disease,” particularly in light of the value of early diagnosis and treatment for cancer patients. The court emphasized that the expense of regular medical testing could deter individuals from receiving necessary medical treatment:

Although some individuals exposed to hazardous chemicals may seek regular medical surveillance whether or not the cost is reimbursed, the lack of reimbursement will undoubtedly deter others from doing so. An application of tort law that allows post-injury, pre-symptom recovery in toxic tort litigation for reasonable medical surveillance costs is manifestly consistent with the public interest in early detection and treatment of disease.

The court also cited other public policy considerations, such as the deterrence value of allowing medical surveillance claims. Once polluters were subject to significant liability, they would be more willing to incur the expense of proper disposal rather than the expense of protracted litigation and payment of medical surveillance claims. Finally, the court determined that “it is inequitable for an individual, wrongfully exposed

98. The original jury verdict also provided compensation for emotional distress caused by knowledge of ingesting contaminated water and the deterioration of quality of life during the period when the residents were deprived of running water. A claim for “enhanced risk” of cancer was denied by the trial court. This denial was affirmed by the appellate division and the New Jersey Supreme Court on the grounds that it was too speculative. Ayers, 106 N.J. at 578, 525 A.2d at 297.
100. Id., 493 A.2d at 1322 (citation omitted).
102. Id. at 603, 525 A.2d at 311.
103. Id. at 604, 525 A.2d at 311.
104. Id. at 604, 525 A.2d at 311-12.
to dangerous toxic chemicals . . . to have to pay his own expenses when medical intervention is clearly reasonable and necessary.”

Legal commentators, as well as a number of courts, have long advocated the recognition of a claim for presymptom, postexposure medical surveillance based on public policy grounds. Commentators cite the following as some of the potential benefits of requiring toxic tortfeasors to pay for the ongoing medical surveillance of exposure victims: (1) The provision of medical monitoring services to those who would otherwise be unable to afford them; (2) the production of information regarding the health consequences of human exposure to particular toxic substances; and (3) the deterrence of future toxic torts as a result of potentially costly liability for ongoing medical surveillance.

The legal system is playing catch-up with the medical and scientific communities by recognizing the individual and public benefits of early diagnosis of toxic exposure-related diseases. As the legal community adapts by permitting toxic exposure victims to pursue medical surveil-

105. Id. at 604-05, 525 A.2d at 312.

106. See, e.g., 2 American Law Inst., supra note 9, at 376-77 (stating that “both traditional tort and modern public health rationales support awarding [medical monitoring] damages”); Gara, supra note 7, at 267-72 (arguing that forcing hazardous substance actors to pay for the medical surveillance of the toxic victims promotes the goals of deterring future tortious conduct and mitigating the potential harm suffered by exposure victims); McNamara, supra note 7, at 353-54; Slagel, supra note 2, at 856-57. See also Strand, supra note 7, at 610-12 (asserting that a social deterrence objective should be the basis for toxic tort compensation).

107. Periodic testing, if conducted as part of a formal settlement or judgment program, can be used not only to monitor the health of exposure victims but also to gather data on the health consequences of exposure to particular toxins. This data then can be used to prove causation in subsequent litigation involving the toxic substance. See Gara, supra note 7, at 270-71.

108. Because the legal and practical barriers to recovery discourage toxic tort victims from vindicating their rights, toxic substance manufacturers and disposers have little economic incentive to prevent or control exposure to toxic substances. Slagel, supra note 2, at 856-57. See also Strand, supra note 7, at 598-99 (stating that current regulations set out in CERCLA and RCRA actually reduce the deterrence factor; because toxic producers and disposers are protected from future liability as long as they comply with current regulations, there is little incentive for toxic firms to adopt additional protective measures).

109. In their July 30, 1990 memorandum in response to Rockwell's motion to dismiss, the Cook plaintiffs highlighted this point when they stated, “Medical testing and preventive monitoring are a traditional form of medical surveillance for purposes of prevention, early detection and treatment of disease before it becomes manifest.” Plaintiffs' Memorandum in Response to Defendant's Motion to Dismiss at 8-9, Cook v. Rockwell Int'l Corp., 755 F. Supp. 1468 (D. Colo. 1991) (No. 90-B-181) (citations omitted). In supporting this proposition, the plaintiffs cited numerous medical studies that supported the need for medical testing and preventive monitoring of heart disease. Id. The plaintiffs continued:

Moreover, in a growing trend, medical science has come to rely increasingly on sophisticated epidemiological and health surveys of populations at risk of disease and on other scientific studies to estimate risk potential for disease, for purposes of prevention, early detection and to enhance the prospects for cure and treatment.

Id. at 10 (citations omitted).
lance claims, the players will have to decide whether medical monitoring damages should be paid in a lump sum at the conclusion of the litigation or periodically out of a court-supervised fund or similar mechanism.

II. A Framework for Periodic Payments

The common law system provides for a single lump sum payment for all past, present, and prospective losses stemming from an injury in a typical tort case. Critics of the traditional lump sum award believe that periodic payment plans are a more appropriate means of dispensing future damages awards to plaintiffs, particularly when used in personal injury cases. Proponents of periodic payments envision a variety of plans, limited only by the creativity of the parties responsible for designing them.

In most tort cases an award of money damages is final because, absent express legislation to the contrary, the single recovery rule mandates that damages be paid in a single unalterable sum. While the source of the principle prohibiting a court, on its own authority, from entering a periodic payment judgment is unclear, some commentators attribute the

110. In Structured Settlements and Periodic Payment Judgments, Daniel W. Hindert, Joseph J. Dehner, and Patrick J. Hindert distinguish the phrases "structured settlement" and "periodic payment." HINDERT ET AL., supra note 37, § I, at 5. While the phrase "structured settlement" has often been used to refer to periodic arrangements, the authors prefer "periodic payment" for the following reasons: (1) it applies to judgments, as well as settlements; (2) it does not require the use of an annuity, whereas "structured settlements" have been associated primarily with life insurance annuities; (3) the Internal Revenue Code uses the phrase "periodic payment" in addressing tax consequences of such arrangements; and (4) the Model and Uniform Periodic Payment of Judgments Acts use the term "periodic payment." Id. See also Charles F. Krause, Structured Settlements for Tort Victims, 66 A.B.A. J. 1527, 1527 (1980). Krause uses the term "structured settlements" to indicate voluntary, rather than compulsory periodic payment plans. Id. at 1529. However, "periodic" payments and "structured" payments or awards are more often used as synonyms. Elligett, supra note 22, at 130 n.3.


113. See infra section II.C. (discussing the mechanics of periodic payments).

114. See, e.g., Frankel v. United States, 321 F. Supp. 1331, 1341 (E.D. Pa. 1970), aff'd sub nom. Frankel v. Heym, 466 F.2d 1226 (3d Cir. 1972) (stating that although a periodic award would be more just, the court was precluded from making a periodic award in the absence of express legislative authorization); cf. Elligett, supra note 22, at 132 (stating that the need for legislation permitting periodic payments is generally recognized).
doctrine to practicality and risk. Notwithstanding the general rule, judicial and legislative precedents for implementing periodic payments exist that illustrate departures from the single recovery rule.

A. Judicial Departures From the Single Recovery Rule

In the English case of Jenkins v. Richard Thomas & Baldwin Ltd., the court reluctantly departed from the single recovery rule when it permitted the reopening of a damages award. The plaintiff was an injured employee who the defendant employer had agreed to employ as a grinder after the trial. The court considered the plaintiff's future earnings as a grinder in assessing the damages award. Immediately after trial, the defendant refused to hire the plaintiff as a grinder. The court reopened the case to adjust the damages award because the plaintiff was able to show that the damages had been wrongly assessed.

American courts have strayed from the traditional lump sum damages awards in a scant handful of cases. In a 1972 case, Holden v. Construction Machinery Co., the Iowa Supreme Court affirmed the trial court's decision to retain jurisdiction over the case and to periodically assess the amount of damages owed by the defendant, rather than granting specific performance in a breach of contract case. The plaintiff, Herle H. Holden, and the defendant, Warren Holden, were brothers who owned a manufacturing business. The brothers made a contract, which provided that, while Warren would retain two more shares of the company stock, Herle would receive equal compensation as an employee of the company. When Warren breached the contract in 1968, Herle sued for specific performance. The trial court denied Herle's request for specific performance—employment with the company—because of the brothers' strained relationship. Instead, it awarded Herle damages equal to Warren's income from the company. Because the court could not determine with an acceptable degree of precision the amount of future damages, it retained jurisdiction to assess annually the amount owed to Herle. The Iowa Supreme Court, by affirming the periodic assess-

115. HINDERT ET AL., supra note 37, § 1, at 7-8. Judges may be wary of the need for ongoing supervision and may be reluctant to deal with practical matters, such as deciding when the payments are to be made and for how long. Judges also may be unwilling to order plaintiffs to bear the risk that a defendant may become insolvent prior to meeting her obligation to the plaintiff. Id.


118. 202 N.W.2d 348 (Iowa 1972). For a discussion of this case, see Kolbach, supra note 112, at 140-41.

119. Holden, 202 N.W.2d at 364.

120. Id.
ment and payment of damages, recognized the limits of the lump sum method.

While the *Holden* court awarded periodic payments in a breach of contract setting, at least two American courts have permitted periodic payment of personal injury judgments in the absence of statutory guidance. In *M & P Stores v. Taylor*, a customer sued a store owner for negligently failing to maintain safe premises. After the jury was discharged, the defendant objected to the form of the $36,000 verdict. The jury had determined that the $36,000 was to be paid in $150 monthly installments over twenty years. Although the Oklahoma Supreme Court viewed the verdict as improper, it held that the trial court properly permitted the periodic payment plan because no timely objections were filed prior to the dismissal of the jury. In *McGhee v. McGhee*, the defendant fraudulently induced a woman to marry him. The Idaho Supreme Court, relying on equity jurisdiction, upheld the trial court's order that the defendant pay damages in installments.

Because settlements are private contractual agreements, they have not been restricted by the single recovery rule. While there is no record of the first periodic payment settlement, one theory proposes that the first periodic payment settlement occurred when an injured plaintiff, faced with an insolvent defendant, took a promise from the defendant to pay over time, rather than pursuing the claim in bankruptcy.

The first reports of periodic payments to settle personal injury cases arose in the 1960s as Richardson Merrill, the manufacturer of Thalidomide, settled claims filed on behalf of Canadian children born with birth defects. Because Richardson Merrill had no insurance for the claims, it settled by agreeing to pay the victims over the course of their lifetimes, rather than through one-time cash payouts.

Use of periodic payment settlements in the United States has increased steadily over the past two decades, and is now commonplace in personal injury practice. Commentators attribute the increased use to

122. The court felt the jury should not have rendered a periodic payment verdict on its own initiative. *Id.* at 808-09.
123. 82 Idaho 367, 353 P.2d 760 (1960).
124. *Id.* at 764, 353 P.2d at 764.
125. HINDERT ET AL., supra note 37, § 1, at 13.
126. *Id.* § 1, at 13-14.
127. *Id.* § 1, at 14.
128. The payments were backed by annuities scheduled to increase in amount each year by two percent. *Id.*
129. That structured settlements are commonplace is evidenced by the existence of the National Structured Settlements Trade Association. Structured settlement specialists are employed by insurance companies and attorneys involved in negotiating structured settlements. In addition, computer software is available to assist attorneys in setting up structured settlement plans. *See* Michael A. Hanna, *Computer Knowledge: Not Just for Your Staff Any More,*
two factors: first, several Internal Revenue Service rulings awarded tax-free status to the full amount of periodic payment settlements, which meant that plaintiffs would suffer no tax disadvantage in accepting periodic payments; second, the increase in the size of personal injury awards encouraged defendants and their insurance companies to examine alternatives to the lump sum damage award.130

B. Legislative Departures From the Single Recovery Rule

Early legislative attempts to require periodic payments in all tort cases involving bodily injury failed to gain widespread support. For instance, through eight tentative drafts, the 1980 Model Periodic Payment of Judgments Act131 was referred to as a "Uniform Judgments Act." The change from the designation "uniform act" to "model act" in the final draft indicates the lack of significant support for the proposed legislation in most jurisdictions.132 The prefatory note to the 1990 Uniform Periodic Payment of Judgments Act highlights the fact that periodic payment statutes did become more popular subsequent to the 1980 Model Act: "The Conference approved the Model Periodic Payment of Judgments Act in 1980. At that time approximately 14 states had adopted some type of [periodic payment legislation] . . . . Today over 30 states have adopted some type of periodic-payment legislation."133

Currently, most states have passed statutes permitting or requiring periodic payments in specific types of cases, such as alimony and child support,134 no-fault automobile liability,135 medical malpractice,136 and


130. Hindert et al., supra note 37, § 1, at 16.1.


133. 1990 Unif. Periodic Payment of Judgments Act, Prefatory Note, 14 U.L.A. 5, 14-16 (West Supp. 1991). For a complete discussion and listing of the states and the specific statute citations, see Hindert et al., supra note 37, § 10 & app. C.

134. The typical family support statutes provide for periodic payment of spousal and child support. These statutes permit courts to retain jurisdiction to modify the periodic payments upon proof of changed circumstances, such as remarriage or death. See Hindert et al., supra note 37, § 1, at 9; White, supra note 22, at 32 n.216.

135. See Elligett, supra note 22, at 133 (observing that "a form of periodic payments is now used under many no-fault automobile insurance statutes"). If an accident victim seeks the allowable no-fault benefits directly from her insurer, the benefits may be paid periodically. Hindert et al., supra note 37, § 1, at 10. See also Kolbach, supra note 112, at 148 n.75.
workers' compensation. At least sixteen states' periodic payment statutes pertain to personal injury actions in general. However, no state has enacted periodic payment legislation specifically dealing with medical surveillance claims in toxic tort litigation. When courts have created medical surveillance funds to compensate toxic exposure victims on a periodic basis, they have done so in the absence of legislative guidance. Some of these courts have relied on the equitable power of courts to adapt the relief granted to the circumstances of the particular case. And, while periodic payment plans are now commonplace in other areas of litigation, there have been relatively few set up for medical surveillance purposes.

C. The Mechanics of Periodic Payments

Various periodic payment plans have been implemented by statute and suggested by commentators. This section examines a few of the ways in which these periodic payment plans differ. Usually, losses al-

(noting that at least six states allow for payments of benefits as loss accrues under no-fault automobile accident compensation plans).

136. At least twenty state statutes provide for periodic payments in actions against health care providers. See Henderson, supra note 18, at 27-28 & nn.24-43 (listing 20 states and citing specific statutes that provide for periodic payments in medical malpractice actions); Larry S. Milner, Comment, The Constitutionality of Medical Malpractice Legislative Reform: A National Survey, 18 LOY. U. CHI. L.J. 1053, 1067 n.96 (1987) (listing 17 state statutes providing for periodic payments in actions against health care providers). For a complete analysis of a periodic payment statute limited to medical malpractice actions, see Henderson, supra note 18, discussing Arizona's statute and recommending that it be used as a prototype.

137. Workers' compensation statutes typically require periodic payments. Future payments are subject to increase, decrease, termination, or revival. HINDERT ET AL., supra note 37, § 1, at 9. These statutes may contain provisions for converting periodic payments to lump sums in exceptional circumstances. See, e.g., MONT. CODE ANN. §§ 39-71-740, 39-71-741 (1991), discussed in Teresa Thompson, A Checklist for Drafting a Petition for Lump-Sum Conversion of Permanent Partial Workers' Compensation Benefits, 47 MONT. L. REV. 177 (1986). The Montana statute is typical in that it mandates the payment of benefits in biweekly installments. An injured worker may petition to have her award converted to a lump sum by submitting a written request demonstrating that her ability to sustain herself financially is more probable with a whole or partial lump sum payment. Thompson, supra, at 177-78.


Examples of periodic payment plans may be found in foreign countries, as well. France, Australia, New Zealand, and Great Britain all have statutes mandating periodic payments in some circumstances. HINDERT ET AL., supra note 37, § 1, at 10-11.

139. See supra note 25 and accompanying text.

140. One structured settlement specialist indicated that, while he has set up structured settlements on many occasions, he has yet to see a structured settlement implemented for medical surveillance purposes. Telephone Interview with H.R. Brandell, Settlement Advisors, Inc. of Englewood, Colo. (Nov. 12, 1991).

141. See, e.g., 1990 UNIF. PERIODIC PAYMENT OF JUDGMENTS ACT, 14 U.L.A. 5 (West
ready incurred are paid in full in a lump sum and future losses are paid under a plan.142 Periodic payment plans may be used in dispensing judgments or settlements, and may be administered as a trust or financed with annuities.143 The plans can be discretionary or mandatory.144 If discretionary, plans differ as to who may elect to use a periodic plan, and whether all of the parties involved in the litigation must agree to the plan.145 Section 6(3) of the 1980 Model Periodic Payment of Judgments Act established a $100,000 threshold of net damages; if this threshold was met, the Act mandated periodic payments.146 If the total amount was less than $100,000, then the Act required a lump sum payment, unless the claimant or the beneficiaries elected to receive periodic installments.147

Because periodic payments are mandatory under most states' workers' compensation statutes,148 injured workers under these statutes have no right to reject periodic payments. In fact, many of the workers' com-
pensation statutes restrict the availability of lump sum settlements or commutations of scheduled payments for which claimants might opt as alternatives to periodic payments. Many state statutes also mandate periodic payments in actions against health care providers and in marital dissolutions.

The termination of payments for future losses upon death, with a partial lump sum payment to the beneficiaries and a partial reversion to the insurer, is a common feature of periodic payment plans. The 1980 Model Act contained this type of provision:

[T]he liability for payment of any installments for medical or other costs of health care or noneconomic loss not yet due at the death of a person entitled to receive these benefits terminates upon the death of that person. The liability for payment of any other installments or portions thereof not yet due at the death of the person entitled to receive them likewise terminates. . . .

Section 11 of the 1990 Uniform Periodic Payment of Judgments Act similarly provides that "liability to a claimant for periodic payments not yet due for medical expenses terminates upon the claimant's death." Termination provisions of this type have been criticized because, upon the tort victim's death, payments terminate, rather than remaining a part of her estate as with lump sum awards. With a lump sum award of damages, the property right vests upon payment so the tort victim's heirs can take any leftovers. With a periodic payment award, however, the tort victim does not have a vested property right in future monetary damages until the costs accrue; since no costs can accrue after the tort victim dies, the tortfeasor is liable for no further payments. The victim's heirs, therefore, do not benefit from leftovers.

The long-term financial strength of the obligated parties directly affects the financial security of the claimants who may depend on periodic payments for their support over many years. Some prominent life insurance companies that issued annuities to fund periodic payment plans have been criticized for investing irresponsibly. The perceived finan-

149. Kolbach, supra note 112, at 146 n.64 (citing WILLIAM R. SCHNEIDER, THE LAW OF WORKMEN'S COMPENSATION 1296 (1922); HERMAN SOMERS & ANNE SOMERS, WORKMEN'S COMPENSATION 161 (1954)).
150. See supra notes 22, 136 and accompanying text.
151. Elligett, supra note 22, at 131.
153. 1990 UNIF. PERIODIC PAYMENT OF JUDGMENTS ACT § 11, 141 U.L.A. 5, 166 (West Supp. 1991). The 1990 Uniform Act does provide, however, that, in actions other than for wrongful death, periodic payments for economic losses not yet due at death, other than payments for medical expenses, must be paid to the estate of the decedent. Id.
154. See Corboy, supra note 132, at 1526.
156. Executive Life of New York, a life insurance company that funded many periodic
cial instability of these companies has raised questions about the long-term security of periodic payments, particularly structured settlements funded with annuities. Today, periodic payment statutes and plans contain a variety of security provisions that protect the claimant from the possible future insolvency of the obligor or the obligor's assignee. One approach to improving prospects for long-term security has been to require companies that fund periodic payment plans to meet minimum financial standards. Both the 1980 Model Periodic Payment of Judgments Act and the 1990 Uniform Periodic Payment of Judgments Act contain extensive security provisions, including the requirement that only "qualified insurers" be used.

An alternative method of protecting periodic payment recipients is to grant them preferred creditor status so that they may continue to receive their periodic payments even if the party responsible for paying becomes insolvent. Typically, a tort claimant has only general creditor status and therefore fares poorly once the obligor becomes insolvent. The Arizona periodic payment statute contains a security provision that grants the plaintiff-judgment creditor rights superior to general creditors.

Another important way in which periodic payment proposals vary is in whether or not they allow for the adjustment of the amount of the damages award. With a lump sum award, the plaintiff's future losses are estimated and adjusted for certain factors such as inflation. The plaintiff then receives a fixed amount in a lump sum. Even if circumstances change so that the original sum either fails to compensate the plaintiff adequately, or compensates her for more than her actual future losses,

157. See Jefferies, supra note 155, at 28.

the damages award will not be adjusted. Some periodic payment plans merely award an unalterable sum to be paid in installments over a period of time, rather than in a lump sum. Drafters of the 1980 Model Act voted to delete provisions that allowed an award for periodic payments to be modified after the judgment was entered. The 1990 Uniform Act also contains no provision for modifying periodic payment awards after judgment is entered. Some supporters of periodic payments have criticized this type of periodic payment plan as being inflexible and no better than lump sum awards. By contrast, "contingent" or "variable" periodic payment plans allow periodic payment awards to be modified after judgment (or settlement) to reflect changes in circumstances that arose after the judgment (or settlement) was entered.

D. Why Periodic Payments?

Before examining periodic payment plan options for medical surveillance, a general discussion of the advantages and disadvantages of periodic payments is warranted. The use of periodic payments is hailed by

161. See Kolbach, supra note 112, at 142-43 (discussing a pattern of over- and undercompensation for personal injuries resulting from the use of unalterable lump sum awards).

162. This type of plan has been criticized because, rather than dealing with the uncertainty issue in calculating future losses, an unalterable sum paid over a period of time forces the victim to spread her consumption over her expected lifetime. See, e.g., Rea, supra note 112, at 148.

163. Kolbach, supra note 112, at 139 n.17.

164. See id. The Washington and New York state statutes are examples of statutes that mandate periodic payments but do not permit modification of damages awards based on future events. Washington is one of only a handful of states that does not limit periodic payments for bodily injury to negligence actions against health care providers. WASH. REV. CODE ANN. § 4.56.260 (West 1988). Under an earlier version of the Washington statute, a Washington court could require a fixed sum to be paid over time as an annuity in any civil action in which the court determined that the plaintiff was totally and permanently disabled. WASH. REV. CODE ANN. § 4.56.240 (West 1988) (repealed 1986). See Flora, supra note 138, at 171. New York now mandates periodic payment of judgments for future damages in personal injury, injury to property, and wrongful death cases when the award exceeds $250,000. N.Y. CIV. PRAC. L. & R. §§ 5041-5049 (McKinney 1991). Articles 50A (§§ 5031-5039) and 50B (§§ 5041-5049) of the New York statute require that substantial personal injury awards be funded by annuity contracts. This provision has been severely criticized since many of the insurance companies that sold annuity contracts invested the money unwisely. See, e.g., Kelner & Kelner, Life Insurance Industry, supra note 156, at 3 (discussing risks inherent in annuity contracts and fact that Executive Life of New York invested over one half of its assets in junk bonds); Joseph Kelner & Robert S. Kelner, Trends, supra note 143, at 3 (stating that New York periodic payment provisions "have proven to be an actuarial nightmare for practicing attorneys and for judges who must administer them").

165. Barbara Balzer Kolbach advocates variable periodic payment plans in her Comment. See Kolbach, supra note 112, at 139. State spousal and child support statutes typically use variable periodic payment plans. See White, supra note 22, at 32 n.216.

166. For a more thorough look at the advantages and disadvantages of periodic payments, see Eck & Ungerer, supra note 21, chs. 5 & 6 (highlighting reasons why a plaintiff and defendant would select a structured settlement); Hindert et al., supra note 37, § 1.04
supporters as the answer to the weaknesses inherent in a lump sum award of damages. Pitfalls of lump sum payments frequently cited by commentators include the possibility that a lump sum will inaccurately compensate a tort victim for future losses;\(^{167}\) that, if a lump sum damage award exceeds the tort victim’s actual losses, society eventually pays for such windfalls in higher insurance costs;\(^{168}\) that tort victims will mismanage large sums of money paid in lump sums;\(^{169}\) and that income tax payments on lump sum awards reduce a tort victim’s actual compensation.\(^{170}\) Proponents of periodic payments argue that periodic payments insure that tort victims use money from damage awards for future care and income, rather than for other purposes.\(^{171}\) Professors Keeton and O’Connell, in a 1965 book on no-fault auto insurance, discussed the fact that tort victims rarely invest the awards they recover, thus failing to provide for their long-term needs.\(^{172}\) According to one commentator, “[m]ismanagement, squandering, and dissipation are not uncommon.”\(^{173}\) A 1947 study by the Railroad Retirement Board reported that settlements for work-related injuries were not typically disposed of by injured workers and survivors “to offer assurance of a stable substitute for the loss of wages incurred in the severe and fatal injuries.”\(^{174}\)

Other commentators reject the assumption that tort victims squander their money. These commentators declare that it is paternalistic to

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\(^{167}\) See Krause, supra note 110, at 1528 (discussing the inaccurate calculation of future lost earnings: “[T]he method of calculation of the present value of future losses does not result in an award that reflects the true present value of the lost contributions over a projected future period.”).

\(^{168}\) See Elligett, supra note 22, at 146 (citing one insurance company’s savings of 35% to 45% when periodic payments were used instead of lump sum awards); Krause, supra note 110, at 1528 (citing significant benefits to insurers when damages are paid in periodic payments rather than lump sums).

\(^{169}\) See HINDERT ET AL., supra note 37, § 1, at 21; Elligett, supra note 22, at 131 (citing the potential for plaintiffs’ wasting their lump sum awards and, therefore, becoming wards of the state as one argument, albeit paternalistic, favoring periodic payments); Krause, supra note 110, at 1527; Kolbach, supra note 112, at 144 (“The inexperienced plaintiff, probably confronted with the largest single amount of money he or she has ever possessed, typically exhausts the award before the loss itself is remedied.”).

\(^{170}\) Elligett, supra note 22, at 147 (explaining that interest on lump sum awards is taxed while periodic payments are tax exempt); Krause, supra note 110, at 1528 (stating that the tax consequences of lump sum awards might be elusive and lead to dissipation of the compensation).

\(^{171}\) See supra note 169.


\(^{173}\) Krause, supra note 110, at 1527.

\(^{174}\) 1 U.S. RAILROAD RETIREMENT BOARD, WORK INJURIES IN THE RAILROAD INDUSTRY 1938-1940, at 175 (1947), discussed in Kolbach, supra note 112, at 144.
force periodic payments on tort victims to prevent them from misman-
aging their damages awards. In rejecting the argument that victims will
squander lump sums of money, a personal injury attorney stated:

I rarely make such an arrangement [for periodic payments] to protect
an adult client from his own supposed weaknesses, because I rarely see
evidence that a client who has received a million dollars in damages
thinks that he is now well-off and can afford the things he could not
afford before.175

Another commentator argued that "[t]he court might be interested in the
way the victim allocates his award because paternalistically it wishes to
make decisions for the victim because it fears that the victim will become
eligible for welfare benefits if the award is 'misused.' "176

Lump sum awards can result in windfalls for tort victims and their
survivors. When future losses turn out to be less than the amount
awarded, the tort victim gets a windfall. Further, when tort victims die
before the age used to calculate lost earnings, medical expenses, and
other future losses, the victim's survivors achieve a windfall.177 Critics of
the windfall rationale for periodic payments argue that there has been no
parallel concern when claimants' losses exceed the amount of the dam-
ages award.178 A contingent or variable periodic payment scheme would
correct this asymmetry by permitting the adjustment of damage awards
that inadequately compensate tort victims for their losses.179

A major advantage of periodic payments is that they provide a
plaintiff with an opportunity for federal income tax savings, which does
not exist with a lump sum award.180 Under Internal Revenue Code Sec-
tion 104(a)(2), personal injury damages received as a lump sum are ex-
cluded from a claimant's gross income, but the interest realized from
investing the lump sum is not.181 With periodic payments, the claimant
can receive installment payments that increase over time to account for

175. Corboy, supra note 132, at 1524.
176. Rea, supra note 112, at 143.
177. See 1980 MODEL PERIODIC PAYMENT OF JUDGMENTS ACT § 11 commissioners' comment, 14 U.L.A. 141, 167 (West 1990) (stating that "[s]ince death precludes the accrual of losses for such items of damage [medical or other health care costs and noneconomic loss such as pain and suffering], it was felt that these items would be a windfall to the recipient"); see also CAL. CIV. PROC. CODE § 667.7(f) (West 1987) (stating that the legislature's intent is to eliminate "the potential windfall from a lump-sum recovery which was intended to provide for the care of an injured plaintiff over an extended period who then dies shortly after the judgment is paid, leaving the balance of the judgment award to persons and purposes for which it was not intended").
178. See Corboy, supra note 132, at 1526. In criticizing the windfall rationale of the commissioner's comment to § 11 of the 1980 Model Act, Corboy states, "If symmetry were a goal, the drafters would provide a means for reopening the judgment on behalf of the plaintiff as well as for the defendant . . . . " Id.
179. See, e.g., Kolbach, supra note 112, at 139 n.17, 142-43
180. HINDERT ET AL., supra note 37, § 1, at 22.
181. Id.
inflation and accrued interest. These larger sums will be tax free, at least at the federal level.\textsuperscript{182}

Critics of periodic payments cite administrative inefficiency as one reason for rejecting proposals calling for continued review of cases.\textsuperscript{183} Proponents of periodic payments counter that the administrative difficulties can be managed effectively and that the cost of administering periodic payment plans is reasonable compared to the benefits.\textsuperscript{184} In Germany the burden on courts was actually reduced, rather than exacerbated, by the introduction of periodic payments into the established damage system.\textsuperscript{185} The New Jersey Supreme Court expressed a practical approach to the administration of periodic payments in the context of medical monitoring funds when it stated, "Although there may be administrative and procedural questions in the establishment and operation of such a fund, we encourage its use by trial courts in managing mass-exposure cases."\textsuperscript{186} In a footnote, the court stated:

It is beyond the scope of this opinion to set down guidelines for trial courts in establishing and administering such funds. A court-appointed administrator will be required. The cost of administration should be borne by defendants. A procedure should be established for the submission and review of claims for payment, and to determine the availability of collateral source benefits. We are confident that satisfactory procedures can be developed by trial courts on a case-by-case basis.\textsuperscript{187}

It is evident that proponents and critics of periodic payments differ in their views as to whether periodic payments are a viable alternative to lump sum payments and who benefits from periodic payment plans.\textsuperscript{188} It

\textsuperscript{182} Henderson, supra note 18, at 32 n.81.

\textsuperscript{183} See, e.g., Rea, supra note 112, at 144 (stating that "[t]he process by which courts determine fault and the extent of damages is extremely costly, but requiring a continual review of the cases would be much more so").

\textsuperscript{184} Kolbach, supra note 112, at 152-53.

\textsuperscript{185} Id. at 152 (citing John Fleming, Damages: Capital or Rent?, 19 U. TORONTO L.J. 295, 320 (1969)).


\textsuperscript{188} Kolbach argues that variable periodic payments would benefit plaintiffs and defendants in both contract and tort actions, as well as the general public who would be spared increased taxes and insurance costs resulting from claimants' mismanagement of lump sum payments. Kolbach, supra note 112, at 143, 146. Other commentators agree that periodic
remains undisputed, however, that periodic payment judgments and settlements are more common on the legal landscape than ever before. Therefore, a look at the ethical and constitutional considerations that periodic payments raise may prove useful.

E. Ethical Considerations Raised by Periodic Payments

Even proponents of periodic payments recognize that they pose distinct ethical dilemmas for attorneys. Many plaintiff's attorneys oppose periodic payment judgments and settlements because of the new responsibilities and potential new professional liability.\(^{189}\) While an attorney whose client receives a lump sum award is not ordinarily responsible for advising her client of the tax and financial management aspects of the award, an attorney whose client receives a periodic payment is responsible for valuating the award to determine its adequacy and for exploring tax, financial, medical, estate, and other issues with her client.\(^{190}\) Ethical Consideration 7-8 of the Model Code of Professional Responsibility requires a lawyer to inform and advise a client about all "relevant considerations."\(^{191}\) Considerations that may be relevant in discussing periodic payments include tax consequences, the effect inflation will have on the future value of a periodic payment award, the method in which future payments will be made, and the degree of risk involved. Thus, an attorney who considers periodic payments a personal inconvenience is still obligated to thoroughly explore the potential advantages and disadvantages of a periodic payment plan in light of an individual client's needs.\(^{192}\)

The tension between an attorney's personal interest and her client's interest has been thrust into the spotlight recently as the following question has arisen: When periodic payments are implemented, on what amount should a lawyer's fee be based?\(^{193}\) A periodic payment award pays benefit plaintiffs, defendants, insurers, and society in general. See HINDERT ET AL., supra note 37, § 1; Elligett, supra note 22, at 149-50. In contrast, Corboy argues that periodic payment plans "would benefit only one segment of the public, would actually worsen the condition of accident victims, and [have] as [their] only real purpose the facilitation of ever-diminished costs of operation for liability insurers." Corboy, supra note 132, at 1526.

189. See David Austern, The Ethics of Structured Settlements, 22 TRIAL, Nov. 1986, at 17. Periodic payments introduce a new level of complexity into a well established system of negotiating and litigating personal injury claims; until forms begin to standardize and knowledge broadens, complexity will continue to dissuade some attorneys from supporting periodic payments. See HINDERT ET AL., supra note 37, § 1, at 25.

190. See HINDERT ET AL., supra note 37, § 1, at 24-25.


192. This obligation applies to plaintiff, defense, and insurance counsel.

193. Plaintiff attorneys frequently enter into contingent fee arrangements with their clients. While periodic payment plans do not preclude the use of contingent fee arrangements, an attorney may encounter difficulty calculating the amount of the fee and determining the timing
"involves two sums, the present value and the future value of the annuity used to fund the package."194 Plaintiffs frequently retain attorneys on a contingent fee basis. A standard agreement would provide the attorney with a one third contingent fee, although variations are not uncommon. If the case settles, and a structured settlement is implemented, the plaintiff's attorney might be tempted to take her entire fee out of the initial payment and "cash out" of the case, leaving all remaining periodic payments solely to the client.195 State bar associations recently have indicated that the collection of the entire contingent fee from the initial down payment cannot be predicated upon the future value of the total settlement award.196 The various codes of ethics do not require that a contingent fee be collected either as a lump sum or as a percentage of each periodic payment.197 Attorneys are free to specify the method to be used for computing contingency fees in the agreements they enter into with their clients. In the absence of an express agreement, it is unlikely that an attorney will be permitted to charge a contingent fee based on the future payments of a structured settlement rather than on its present value. Florida Bar v. Gentry198 involved a lawyer who was placed on probation for doing just that. The Minnesota Supreme Court in Cardeñas v. Ramsey County199 held that, absent an express written agreement to the contrary, a lawyer's fees should be received periodically as the client receives future payments.

The 1990 Uniform Periodic Payment of Judgments Act and state periodic payment provisions address the attorney fee issue. Section 7(e) of the 1990 Uniform Act and the Comment following the section set out detailed guidelines for calculating contingent fee awards when all or part of a judgment or settlement is to be paid periodically.200 Section 6146(b) of the California Business and Professions Code states:

of payment. An attorney should not place her interest in receiving a lump sum fee above her client's interest in receiving the most advantageous damage award.

For commentary on the issue of attorney's fees and periodic payments, see HINDERT ET AL., supra note 37, § 1, at 24-25; Austern, supra note 189, at 17; Lawrence A. Dubin, Pay Me Now or Pay Me for Years, NAT'L L.J., Apr. 9, 1990, at 13.


197. Id. See, e.g., BUS. & PROF. CODE § 6147 (West 1990) (same).

198. 475 So. 2d 678 (Fla. 1985) (holding that the attorney's conduct violated ethical rules prohibiting lawyers from charging illegal or clearly excessive fees).

199. 322 N.W.2d 191, 194 (Minn. 1982); see Austern, supra note 189, at 17.

If periodic payments are awarded to the plaintiff pursuant to [California Code of Civil Procedure] Section 667.7 . . . [which mandates periodic payments in actions against health care providers], the court shall place a total value on these payments based upon the projected life expectancy of the plaintiff and include this amount in computing the total award from which attorney's fees are calculated under this section.201

As periodic payments become more commonplace, attorneys will have to educate themselves about periodic payments to avoid the risk of professional sanctions and malpractice lawsuits brought by their clients. Fortunately, standardized forms, practice manuals, and computer software are available to assist practitioners in learning about, and designing, periodic payment plans.202

F. Can Periodic Payment Plans Withstand Constitutional Scrutiny?

As the use of periodic payments becomes more widespread, courts and commentators have begun to address the constitutional issues that arise through their use. The case of Holden v. Construction Machinery Co.203 is a rare example of a court ordering periodic payments for future damages in the absence of a statutory provision for periodic payments. The New Jersey Supreme Court in Ayers v. Jackson Township,204 in recommending medical surveillance funds as an alternative to lump sums for future medical expenses, relied on the equitable power of courts to fashion appropriate remedies, not on any express statutory grant of authority to order periodic payments. In the areas of spousal and child support, workers' compensation, medical malpractice, and no-fault automobile liability, statutes dictate whether periodic payments are mandatory or permissive.205 Opponents of the statutes mandating periodic payments have challenged their validity on due process and equal protection grounds, because these statutes require periodic payments in some tort actions but not in others.206 The use of periodic payments in principle has been upheld, although a few courts have struck down particular state statutes.207

201. CAL. BUS. & PROF. CODE § 6146(b) (West 1990).
202. ECK & UNGERER, supra note 21, and HINDERT ET AL., supra note 37, are thorough practice manuals. See also supra note 129 (noting some of the computer programs presently available to assist attorneys).
203. 202 N.W.2d 348 (Iowa 1972). See supra text accompanying notes 118-120.
205. See supra notes 134-137.
206. The judicial decisions primarily have addressed the constitutionality of statutes requiring periodic payments in medical malpractice actions. Each decision focuses on particular features of the challenged legislation and has applied different standards to reach each result. HINDERT ET AL., supra note 37, § 10, at 41.
207. Id. Cases in which courts have upheld the constitutionality of states' medical malpractice statutes requiring periodic payments include Fein v. Permanente Medical Group, 38 Cal. 3d 137, 695 P.2d 665, 211 Cal. Rptr. 368 (1985), appeal dismissed, 106 S. Ct. 214 (1985);
In *American Bank & Trust Co. v. Community Hospital*,\(^{208}\) the California Supreme Court upheld the constitutional validity, under both federal and state constitutions, of the state's 1975 Medical Injury Compensation Reform Act. The Act provided that, upon request, a negligent health care provider could elect to pay awards of future damages in excess of $50,000 on a periodic basis. In an earlier decision the Court of Appeal for the First District held that the statute violated state and federal guarantees of equal protection and due process.\(^{209}\) In reaching its conclusion, the California Court of Appeal determined that the statute unconstitutionally singled out personal injury plaintiffs with claims in excess of $50,000 for distinctive treatment.\(^{210}\) The court found no rational relation to an appropriate governmental interest which would support differential treatment. The California Supreme Court reversed the court of appeal decision. The court observed that a plaintiff has no vested property right in a particular measure of damages, and that the legislature has broad authority to modify the scope and nature of damages.\(^{211}\) The court rejected the plaintiff's argument that the statute was not rationally related to legislative purpose. The court observed that the legislation was rationally related to the intended purpose of reducing skyrocketing medical malpractice premiums and health care costs, as well as assuring the availability of funds to malpractice victims as they were needed.\(^{212}\) According to the court, a statute that created a privileged class of tort defendants, i.e., negligent health care providers, did not violate equal protection, because the statute was a reform measure

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\(^{210}\) *Id.* at 235, 163 Cal. Rptr. at 521.

\(^{211}\) *American Bank & Trust Co.*, 36 Cal. 3d at 368, 683 P.2d at 676, 204 Cal. Rptr. at 677.

\(^{212}\) *Id.* at 369, 683 P.2d at 676, 204 Cal. Rptr. at 677.
and the Equal Protection Clause does not prohibit the legislature from implementing reforms one step at a time.\textsuperscript{213}

\textit{State ex rel. Strykowski v. Wilkie}\textsuperscript{214} is another case in which the court upheld the constitutionality of the state's medical malpractice statute requiring periodic payments in certain actions. The Wisconsin Supreme Court upheld the validity of a statutory provision requiring payment into a "future medical expenses fund" of medical malpractice awards exceeding $25,000.\textsuperscript{215} Future medical expenses would be paid periodically out of the fund to the plaintiff until the award were exhausted or the plaintiff died.\textsuperscript{216} The court refused to apply strict scrutiny and concluded that the legislation was neither unreasonable nor a denial of equal protection.\textsuperscript{217}

In \textit{Carson v. Maurer}\textsuperscript{218} the New Hampshire Supreme Court, applying a "substantial relationship" test, struck down a statute providing that, at the request of either party, a trial court could enter a judgment on a periodic payment basis if the award exceeded $50,000 in future damages. The court determined that the statute unreasonably discriminated in favor of health care defendants while unduly burdening seriously injured medical malpractice plaintiffs, thus violating equal protection guarantees.\textsuperscript{219} In reaching its holding, however, the court concentrated on the specific provisions in the statute, and not on the general concept of periodic payment.\textsuperscript{220}

Another constitutional consideration raised by legislation mandating periodic payments is whether the legislation invades the province of the jury and infringes on judicial power.\textsuperscript{221} These considerations arise

\begin{itemize}
\item \textsuperscript{213} \textit{Id.} at 371, 683 P.2d at 677, 204 Cal. Rptr. at 678 (noting the prevailing sentiment that periodic payments would eventually be mandated in all tort cases, not just medical malpractice cases).
\item \textsuperscript{214} 81 Wis. 2d 491, 261 N.W.2d 434 (1978).
\item \textsuperscript{216} \textit{Wis. Stat. Ann.} § 655.015. Another provision of the statute required awards in excess of one million dollars to be paid in maximum annual installments of $500,000. \textit{Id.} § 655.27(5)(a).
\item \textsuperscript{217} \textit{Strykowski}, 81 Wis. 2d at 507-13, 261 N.W. at 442-44. Three dissenters argued that because the periodic payment provisions benefited only the insurer, the statute lacked fundamental fairness and violated the equal protection provisions of the U.S. and Wisconsin constitutions. \textit{Id.} at 540, 261 N.W. at 457. See Flora, \textit{supra} note 138, at 164.
\item \textsuperscript{218} 120 N.H. 925, 424 A.2d 825 (1980); see \textit{Hindert et al., supra} note 37, § 10, at 42 (citing former N.H. Rev. Stat. Ann. § 507-C:7 (IV)).
\item \textsuperscript{219} \textit{Carson}, 120 N.H. at 944, 424 A.2d at 838.
\item \textsuperscript{220} \textit{See Hindert et al., supra} note 37, § 10, at 42 (listing the six statutory provisions that were deemed unconstitutional by the \textit{Carson} court). The court also determined that, because the statute singled out seriously injured medical negligence victims, i.e., those with over $50,000 in future damages, it offended basic notions of fairness and justice. \textit{Carson}, 120 N.H. at 944, 424 A.2d at 838.
\item \textsuperscript{221} \textit{See Hindert et al., supra} note 37, § 10, at 45-47; Henderson, \textit{supra} note 18, at 34-
\end{itemize}
because, while the judge and jury typically enjoy substantial discretion in calculating damages awards, some periodic payment statutes impose pre-determined inflation factors or formulae to be applied in the calculation of the award. At least two commentators who have examined the issue have determined that periodic payment statutes that are carefully drawn will withstand constitutional challenges that they interfere with a claimant's right to a jury trial or infringe on judicial power. The preceding review of cases in which the constitutionality of periodic payment statutes was challenged illustrates that the use of periodic payments is sufficiently important to the public interest to withstand constitutional scrutiny.

III. The Nexus Between Medical Surveillance and Periodic Payments

Periodic payment plans offer new opportunities for environmental litigants generally, and toxic exposure litigants specifically. As a result of an increasing number of courts recognizing medical surveillance claims and the more frequent use of periodic payment judgments and settlements, an individual exposed to a toxic substance is more likely today to seek the creation of a medical monitoring trust fund or similar mechanism than ever before.

A. The Periodic Payment of Medical Monitoring Expenses: A Look Back

A number of courts have ordered and approved defendant-funded programs for medical surveillance in toxic exposure cases. Other cases dealing with the role of the jury and the judge in awarding periodic payments judgments.

222. See Henderson, supra note 18, at 34-35.

223. See HINDERT ET AL., supra note 37, § 10, at 48; Henderson, supra note 18, at 34 (stating that "one can convincingly argue that a legislatively determined inflation factor or formula, applied after the verdict by the court, would not improperly invade the province of the jury") (citation omitted).

224. See, e.g., 2 AMERICAN LAW INST., supra note 9, at 375-81 (advocating the periodic payment of medical surveillance expenses rather than lump sum awards in toxic exposure cases); Lawrence Cohen, Structured Settlements Applied to Environmental Claims, MICH. LAW. WKLY., Feb. 18, 1991, at S3 (discussing an Environmental Protection Agency study conclusion that structured settlements could promote environmental cleanup); Dennis Connolly & David Miller, Structured Settlements in Environmental Litigation, FOR THE DEFENSE, May 1990, at 2 (advocating the use of structured settlement arrangements such as medical trust funds in toxic exposure cases).

courts have upheld the plaintiffs’ right to pursue their medical monitoring fund claims by denying defendants’ motions to dismiss.226

The New Jersey Supreme Court in Ayers v. Jackson Township set forth a strong argument favoring court-supervised, defendant-funded medical monitoring programs over lump sum damage awards in toxic exposure cases.227 On appeal, the defendant, not the plaintiffs, argued that, if the court were to uphold the jury award of medical surveillance damages, a court-supervised fund was more appropriate than a lump sum payment.228 The New Jersey Supreme Court, while declining to upset the jury award of a lump sum, expressed its preference for the use of a fund. The court highlighted the following advantages of the fund mechanism when used in mass exposure cases: First, “the indeterminate nature of damage claims in toxic-tort litigation suggests that the use of court-supervised funds to pay medical-surveillance claims as they accrue, rather than lump-sum verdicts, may provide a more efficient mechanism for compensating plaintiffs.” Second, a fund can provide a method for offsetting the defendant’s liability by payments from collateral sources. Third, a fund limits the defendant’s liability to the amount of expenses actually incurred, thus preventing any monetary windfalls for the plaintiffs. Finally, in litigation against public entities, the fund mechanism

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227. 106 N.J. at 608-10, 525 A.2d at 313-14. The cases favoring a fund mechanism tend to involve exposure by many individuals to the same deleterious substance or condition. See, e.g., Friends for All Children, 746 F.2d 816 (action on behalf of 149 Vietnamese orphans injured in plane crash); Barth, 673 F. Supp. 1466 (class action brought on behalf of all employees exposed to toxic chemicals at work); In re Agent Orange, 611 F. Supp. 1396 (class action brought on behalf of thousands of Vietnam veterans and their families, including an estimated 15,000 named plaintiffs); In re Three Mile Island, 557 F. Supp. 96 (class action on behalf of thousands of residents within 25 mile radius of the Three Mile Island nuclear reactor); In re Fernald Litig., No. C-01-85-0149 (S.D. Ohio 1985) (estimated 30,000 class members eligible to participate in the medical monitoring program set up by the Fernald Settlement Fund).

228. Ayers, 106 N.J. at 607, 525 A.2d at 313. Compare Barth, 673 F. Supp. at 1468, in which the plaintiffs, not the defendants, requested the use of a fund rather than a lump sum payment.
will foster the legislative objective of limiting the liability of public entities. According to the court, the restriction on plaintiffs' use of compensatory damages was justified in mass-exposure, toxic-tort litigation because of the public interest involved.

The potential benefits of periodic payment plans, in general, were discussed previously. Periodic payment plans for medical surveillance confer similar benefits on litigants, courts, and society. For example, when an individual receives a lump sum award for future medical surveillance, there is no guarantee that she, in fact, will use the money to secure medical examinations. In contrast, a medical monitoring fund ensures that the money is used for medical monitoring by either reimbursing the claimant for medical testing she secures on her own or by providing her with the actual medical examinations.

The periodic payment of medical surveillance expenses also can offer advantages that are unique to toxic exposure cases. An example of a unique and important function is that, when large numbers of individuals are involved, a medical monitoring program can identify and inform individuals who were exposed to toxins but are unaware of the deleterious health consequences. The plaintiff in Barth v. Firestone Tire & Rubber Co., for example, envisioned a medical monitoring fund that would locate previous Firestone employees and inform them that they were exposed to toxic substances during their employment.

Additionally, a medical monitoring fund can pool and share knowledge about the health consequences of exposure to specific toxic substances. This would be impractical if each exposed individual received a lump sum because there would be no way to ensure uniform diagnostic procedures or to collect the results.

229. Ayers, 106 N.J. at 608-10, 525 A.2d at 314-15. The reported outcome of Ayers is that plaintiffs were awarded medical monitoring damages in lump sums; thus, there is no guarantee that they spent the money for medical surveillance purposes. See 2 American Law Inst., supra note 9, at 379 n.59.

230. Id. No discussion was made of whether such a restriction is justified in toxic tort cases involving fewer individuals.

231. See supra section II.D.

232. The medical monitoring program in the Fernald case, for example, provides the actual medical examinations to the plaintiffs, rather than cash payments. See infra section III.B.

233. 673 F. Supp. 1466, 1476 (N.D. Cal. 1987). At least 5000 Firestone employees were exposed to toxic substances without their knowledge or consent from 1963 until 1981 when Firestone closed the plant. Id. at 1468. Daniel Berger, an attorney who seeks medical monitoring funds on behalf of plaintiffs, advocates the notification function as an advantage of the fund mechanism. Telephone Interview with Daniel Berger, Attorney, Berger & Montague of Philadelphia, Pa. (Jan. 14, 1992).

234. The ALI recognized this function when it reported that "a socially beneficial role for medical monitoring is to finance serious scientific study of the potential impact of health hazards on exposed groups [of individuals]." 2 American Law Inst., supra note 9, at 379.

235. A number of the specialists with whom the Author spoke supported the need for uniformity in medical testing, particularly in mass exposure cases. E.g., Telephone Interview
The Three Mile Island (TMI) Public Health Fund illustrates the information-gathering advantage that medical monitoring funds have over lump sum awards for future medical expenses. A March 28, 1979 accident at the TMI nuclear power facility near Harrisburg, Pennsylvania released radioactive material into the atmosphere. Plaintiffs began filing lawsuits in the United States District Court for the Middle District of Pennsylvania within days of the nuclear accident. The lawsuits sought compensatory, punitive, and injunctive relief. The cases were joined into one class action with three plaintiff classes. Class III consisted of individuals living within a twenty-five-mile radius of TMI, who sought the fair and reasonable cost of securing medical detection services to monitor for the future manifestation of exposure-related injury.

A proposed settlement reached on February 17, 1981 provided for the creation of a five million dollar Public Health Fund to finance studies of the long-term health effects of the TMI accident and to promote evacuation planning for the future. The bulk of the settlement, twenty million dollars, was directed toward the economic damages claims asserted by Classes I and II, the businesses and individuals who suffered economic loss as a result of the TMI accident. The medical component of the TMI Public Health Fund was aimed primarily at funding objective epidemiological studies, and not at providing exposed individuals with ongoing medical screening.

Specifically, the February 17, 1981 Stipulation and Agreement of Settlement stated that the Public Health Fund monies could be used for:


The Fernald Settlement Fund will not reimburse individuals for medical testing performed at a facility other than the Fernald Medical Program Facility. Thus, if an individual moves away from Fernald, she is forced to travel back to the Facility for medical testing or forego reimbursement. According to Fernald trustee, William T. Hayden, however, individuals who no longer live near the Fernald Medical Program Facility will be scheduled on a priority basis when they visit the Fernald area. Telephone Interview with William T. Hayden, supra.

237. Id.
238. Id. at 97; see Stipulation and Agreement of Settlement at 8, Three Mile Island (No. 79-0432).
239. Telephone Interview with Daniel Berger, supra note 233; Telephone Interview with Allan Kanner, TMI Plaintiffs' Attorney, Kanner & Assoc. of Philadelphia, Pa. (Nov. 17, 1991). Allan Kanner indicated that, while he would have liked the plaintiffs to receive periodic medical testing, the defendants would not have agreed to a settlement that provided medical testing to plaintiffs. According to Mr. Berger, because the settlement agreement covered everyone within 25 miles of the facility, and because the levels of radiation most plaintiffs were exposed to were extremely low, it was logistically and economically impractical to institute a medical surveillance program. Instead, settlement funds were used for epidemiological studies to identify the incidence of radiation-related disease in the exposed population. The information gathered from the epidemiological study might eventually be useful in other radiation litigation.
(b) funding of studies or analyses relating to the possible health related effects (and related studies and analyses) resulting from the TMI Accident and related events and approved, now or hereafter, by the TMI Advisory Board on Health Research Studies ....

(c) funding of public education programs involving the general public residing or working within twenty-five miles of TMI or the medical community within or serving that region on the subjects of [cancer and cancer detection; evacuation procedures; or public education of any nature to reduce stress];

(e) funding general research into the effects of low level radiation on human health and related studies and analyses.240

In its 1989-1990 Annual Report, the TMI Public Health Fund reported the status of various research projects it had funded, including a radiation monitoring study; a study of noble gas doses, the major radioactive releases from the TMI accident; a study of nonradioactive but harmful chemicals that might have been released by the accident; and an epidemiological study.241 The results of the TMI Public Health Fund’s epidemiological study were published in the September 1990 issue of the American Journal of Epidemiology.242 Clearly, the information generated by the various TMI Public Health Fund studies could not have been gathered and made available to such a wide audience of scientists, medical specialists, and TMI-area residents if the TMI plaintiffs had received individual settlement awards for medical monitoring.

Funded settlements also were used in the Love Canal and Agent Orange litigations. From 1942 to 1953 Hooker Chemical and Plastics Company, now the Occidental Chemical Corporation, dumped an estimated 21,800 tons of chemicals into the Love Canal,243 located only 1,500 feet from the Niagara River. After Hooker sold the property to the Niagara Falls school district in 1953, a school was built directly on top of the waste site and a residential neighborhood sprung up around it. Over the years, rainwater and melting snow seeped into the canal and forced

240. Stipulation and Agreement of Settlement at 13-14, Three Mile Island (No. 79-0432).
241. THREE MILE ISLAND PUBLIC HEALTH FUND, 1989-1990 ANNUAL REPORT 2-6 [hereinafter TMI ANNUAL REPORT].
242. See Hatch et al., Cancer Near the Three Mile Island Nuclear Plant: Radiation Emissions, 132 AM. J. EPIDEMIOLOGY 397 (Sept. 1990). The epidemiological studies’ main findings also were set out in the TMI Public Health Fund’s 1989-1990 Report as follows: There were no statistically significant associations between exposure to accident releases or to routine emissions from the TMI plant and the incidence of leukemia or childhood cancer; but, there was a statistically significant trend in the TMI area for childhood cancer in relation to outdoor background gamma radiation from cosmic and terrestrial sources. TMI ANNUAL REPORT, supra note 241, at 11-12.
243. The canal was named after William T. Love, the 19th century industrialist who originally planned to use it as a means of transportation and a source of inexpensive hydroelectric power. After Love abandoned his plan, the canal was used as a swimming hole by residents. Gerald B. Silverman, Love Canal: A Retrospective, 20 Env’t Rep. (BNA) 835, 836 (1989).
chemical waste to the surface. The contamination spread laterally into the yards and basements of adjoining homes, as well as into the ground water, soil, and indoor air of homes adjacent to the canal. In 1979 state and federal officials declared the Love Canal site an unsafe place to live and relocated residents. With federal aid, the state also purchased many of the contaminated homes from residents.

Current and former Love Canal residents filed several hundred personal injury and property damage cases in the state supreme court in Niagara Falls against Occidental, as well as against the city, county, and school board. The first wave of cases settled in 1983 for twenty million dollars. Under the settlement process, each plaintiff was given the opportunity to present her case to the judge before an award was made. Support for the settlement was strong—all but seven plaintiffs backed it. Under a 1983 Love Canal settlement agreement, a court allocated awards ranging from $2000 to $400,000 per plaintiff, based on individual injuries. The settlement also set up a one million dollar medical trust fund to handle future medical problems.

In 1979 a class action was commenced charging the United States government and a major portion of the chemical industry with deaths and injuries to thousands of veterans who were exposed to Agent Orange and other phenoxy herbicides in Vietnam. After five years of extensive litigation, a tentative settlement was reached on the eve of trial in 1984. The court granted final approval of the settlement in 1985. Of the total two hundred million dollars remaining after payment of attorney’s fees and expenses, a class assistance foundation, initially funded at forty-five million dollars, was organized to provide services to exposed veterans.

244. Id. at 838.
246. Id.
247. Besides the residents’ suits on personal injury and property damage claims, the following litigation developed: A federal Superfund case against Occidental and other defendants in the U.S. district court in Buffalo, New York; an insurance case filed by Occidental against its carriers in the state supreme court in Niagara Falls; and a case filed by Occidental against New York state in the state court of claims in Buffalo to recover any money collected by New York in the federal Superfund action. Silverman, supra note 243, at 846.
248. Id. at 848. The first wave involved 1337 plaintiffs. The second and third waves of cases were filed on behalf of approximately 900 new plaintiffs between 1985 and 1987. Id.
249. Id. at 849.
250. Id. Because parts of the Love Canal settlement are confidential, details about the medical trust fund are unavailable. Telephone Interview with Richard J. Lippes, Love Canal Plaintiffs’ Attorney, Allen, Lippes & Shonn of Buffalo, N.Y. (Nov. 1, 1991). Mr. Lippes did indicate that a trust fund board of directors was established with Love Canal residents holding half of the positions.
and their families, particularly to veterans with children who have birth defects.\textsuperscript{253} To the extent feasible, financially and technically, the foundation was supposed to provide grants or contract for services to meet the health, educational, vocational, and psychological needs of class members who filed claims with the settlement fund.\textsuperscript{254}

B. The Fernald Medical Monitoring Program

More recently, a comprehensive medical surveillance program was established pursuant to a settlement agreement in the \textit{Fernald} class action litigation.\textsuperscript{255} During the operation of the United States Department of Energy's Feed Material Production Center in Fernald, Ohio by National Lead of Ohio and National Lead Industries, Fernald area residents were exposed to a variety of uranium compounds and other hazardous substances. Plaintiffs sought an order requiring the defendants to establish a fund to pay the medical monitoring costs of all class members and to fund epidemiological studies to determine the adverse health effects of the radiation exposure. An advisory summary jury trial was conducted in 1989 to facilitate pretrial settlement. The summary jury returned a nonbinding verdict in favor of the plaintiffs, awarding them a total of one hundred thirty-six million dollars, including eighty million dollars for a medical monitoring fund.\textsuperscript{256}

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\textsuperscript{253}. \textit{In re Agent Orange}, 611 F. Supp. at 1400.  \\
\textsuperscript{254}. \textit{Id.} at 1441. According to Stephen J. Schlegel, the chief managing partner of the plaintiffs' class action committee in the \textit{Agent Orange} litigation, veterans can obtain free Agent Orange physical examinations, including fat biopsies to test for dioxin concentration, from Veterans Administration hospitals. These exams are provided pursuant to veterans' assistance acts, not as a result of litigation. At least some veterans who underwent the Agent Orange examinations at Veterans Administration hospitals encountered resistance when they attempted to get the results of the exams. When Mr. Schlegel endeavored to obtain the physical examination results on behalf of some of his clients, he was told that because the results are included in the government's periodic reports, they are not released to individual veterans. Because an important aspect of medical monitoring is the individual patient's knowledge of whether and how the toxic exposure impacted his or her health, the Veterans Administration's provision of free Agent Orange physical exams may be considered an incomplete remedy because the results of the exams are not released to the patients. Telephone Interview with Stephen Schlegel, Attorney, Clausen, Miller, Gorman, Caffrey & Witous of Chicago, Ill. (Nov. 21, 1991).  \\
\textsuperscript{255}. The class action was originally filed on January 23, 1985 and was certified on September 8, 1986. One subclass contained all owners of real property within a five mile radius of the Feed Material Production Center in Fernald, Ohio between Jan. 1, 1952 and Dec. 18, 1984. A second subclass contained individuals who resided or worked within the five mile radius for any continuous two year period prior to December 18, 1984. Telephone Interview with William T. Hayden, \textit{supra} note 235.  \\
\end{flushright}
Under the terms of a settlement agreement which the parties reached subsequent to the summary jury trial, the defendants agreed to pay a total of seventy-three million dollars to the plaintiff class. The court appointed three special masters, or trustees, to receive and manage all of the settlement proceeds that formed the Fernald Settlement Fund.\(^\text{257}\) The trustees were authorized to develop and administer a medical monitoring program to provide class members with medical examinations and to conduct epidemiological studies.\(^\text{258}\)

Pursuant to a court-approved agreement between the Fernald Settlement Fund trustees and the University of Cincinnati, a pilot medical monitoring program was conducted in September and October 1990.\(^\text{259}\) The fifty-one adult class members who participated in the pilot program were provided with physical examinations in accordance with a court-approved examination protocol.\(^\text{260}\) Shortly after completion of the pilot program, the Fernald Medical Monitoring Program was fully implemented.

The Program provides uniform diagnostic examinations to Fernald Settlement Fund claimants at the Fernald Program Facility at Mercy Hospital, a Fernald area hospital.\(^\text{261}\) Child and adolescent medical examinations are provided pursuant to a contract with Children’s Hospital Medical Center of Cincinnati.\(^\text{262}\) The Program director provides the Fernald Settlement Fund trustees with monthly reports and quarterly summaries. Because the health of thousands of Fernald area residents will be monitored at the same medical facility by the same staff and with the same procedures, the information gathered may paint a useful picture of the specific health consequences, if any, that result from the plaintiffs’ exposure to uranium and other toxic substances.

As of June 1991, the trustees had received more than 5600 applications to participate in the Medical Monitoring Program.\(^\text{263}\) As of May 1991, 1175 class members had received medical examinations.\(^\text{264}\) The Program director of the Medical Monitoring Program, Dr. Robert Wones of the University of Cincinnati Medical Center, reported that

\(^\text{257}\) Order Appointing Special Masters/Trustees. Fernald, (No. C-1-85-0149). The Special Masters/Trustees were Raymond R. Suskind, a medical doctor, Paul A. Nemann, an attorney, and J. Kermit Smith, a real property assessment specialist. William T. Hayden, an attorney, became a trustee on August 15, 1990, following Mr. Nemann’s death.

\(^\text{258}\) Id.


\(^\text{260}\) Id.


\(^\text{262}\) Id. at 2.


\(^\text{264}\) Id.
class members were extremely satisfied with the treatment they had received.\textsuperscript{265}

The \textit{Fernald} Medical Monitoring Program illustrates that toxic exposure victims who seek the periodic payment of medical surveillance expenses can succeed.\textsuperscript{266} The success of the \textit{Fernald} Medical Monitoring Program can be attributed to various interdependent factors. First, the judge in the \textit{Fernald} litigation recognized a claim for medical surveillance, and was willing to retain jurisdiction over the \textit{Fernald} Settlement Fund. Additionally, a summary jury verdict in favor of the plaintiffs encouraged defendants to settle promptly. The University of Cincinnati Medical School was able to set up a special medical monitoring facility at a hospital conveniently located in the Fernald area. \textit{Fernald} plaintiffs also overwhelmingly supported the concept of periodic medical monitoring. Three very capable trustees were appointed to administer the settlement fund. Finally, the trustees benefitted from consultation with legal, 

\textsuperscript{265} In a June 6, 1991 Quarterly Progress Report to the trustees Dr. Wones reported that, of the 196 satisfaction questionnaires received from class members, 129 rated the program "excellent," 63 rated the program "very good," and 4 rated the program "good." \textit{Id.} app. 1.

\textsuperscript{266} In a number of cases in which toxic exposure victims sought the creation of medical monitoring funds, the plaintiffs eventually settled with the defendants without obtaining medical surveillance relief. For example, after the federal district court denied class certification and remanded the case to state court for determination of state substantive issues, Barth v. Firestone Tire & Rubber Co., 673 F. Supp. 1466 (N.D. Cal. 1987), settled on January 13, 1992 with the plaintiffs receiving no specific medical monitoring relief. Telephone Interview with Haj Tada, Attorney, McCutcheon, Doyle, Brown & Enersen of San Francisco, Cal. (Feb. 11, 1992). The \textit{Barth} court never decided the merits of the plaintiffs' medical monitoring claim. Telephone Interview with Haj Tada, \textit{supra} (Dec. 12, 1991).

The plaintiffs in Burns v. Jaquays Mining Corp., 156 Ariz. 375, 752 P.2d 28 (Ct. App. 1988), settled with the defendants in 1989, approximately ten years after the initiation of the lawsuit. The average settlement award was $100,000 per plaintiff, with older plaintiffs receiving an average of $40,000 and younger plaintiffs receiving an average of $200,000. Although their attorney, Mark Harrison, recommended to his clients that they use the money to set up a medical monitoring fund, the plaintiffs opted to take their settlements in lump sums. Telephone Interview with Mark Harrison, Attorney, Harrison, Harper, Christian & Dichter, of Phoenix, Ariz. (Nov. 21, 1991). After the court denied defendants' motion to dismiss and motion for summary judgment relating to plaintiffs' medical monitoring claims in \textit{Habitants Against Landfill Toxicants}, a confidential settlement was reached in the case. The specific terms of the settlement are unavailable. Telephone Interview with Richard J. Lippes, \textit{supra} note 250.

medical, and scientific experts who had been involved in prior toxic exposure litigation.

IV. A Recipe for Success: The Ingredients of a Successful Medical Monitoring Fund

The exact combination of factors that resulted in the Fernald Medical Monitoring Program will not exist in other toxic exposure cases because each case presents unique legal, medical, and scientific circumstances. While there is no single formula for success, the Author suggests that a careful assessment of the following considerations will assist practitioners in seeking, implementing, and administering successful medical monitoring fund programs.

A. Legal Considerations

In determining whether to seek the creation of a medical monitoring fund, a practitioner first must determine whether her jurisdiction recognizes a claim for medical surveillance. While the trend among courts appears to support recognition,267 at least two courts recently have refused to recognize a medical monitoring tort claim.268 The practitioner's task, of course, will be easier if her jurisdiction does recognize the claim. A court's refusal to recognize the claim, however, does not preclude a toxic exposure claimant from achieving a periodic medical surveillance plan through an out-of-court settlement.

Even if the jurisdiction recognizes a medical monitoring tort claim, judges may hold widely differing views of what constitutes "medical monitoring." A claim for medical monitoring can encompass various components, including, but not limited to the following: Individualized medical monitoring of exposed claimants; scientific studies to determine the specific effects of the toxic exposure on the exposed individuals; or general epidemiological studies of the effects of the toxin(s) with no particular emphasis on the exposed population.269 The medical monitoring

267. See, e.g., In re Paoli R.R. Litig., 916 F.2d 829, 850-52 (3d Cir. 1990) (holding that Pennsylvania Supreme Court would recognize medical monitoring tort claim), cert. denied, 111 S. Ct. 1584 (1991); Cook v. Rockwell Int'l, 755 F. Supp. 1468, 1476-77 (D. Colo. 1991) (concluding that Colorado Supreme Court would probably recognize a medical monitoring tort claim, and stating that courts generally have accepted such claims).


269. The Fernald Settlement Fund, for instance, encompasses three distinct medical surveillance components: the Medical Monitoring Program, which operates a medical testing facility and provides eligible individuals with periodic medical examinations; a cytogenetics program, which will determine whether there is an increase in somatic cell mutations in
component of the Three Mile Island settlement was limited to funding epidemiological studies and evacuation planning; there was no provision for individualized medical testing.\textsuperscript{270}

The practitioner must determine if the relevant jurisdiction characterizes medical monitoring as a claim for compensatory damages or as a claim for equitable relief as in Barth v. Firestone Tire & Rubber Co.\textsuperscript{271} If medical monitoring is characterized as equitable relief, the practitioner must be prepared to present legal arguments demonstrating why her client qualifies for equitable relief. Consequently, the practitioner must prove that there is not an adequate legal remedy and that the plaintiff would suffer irreparable harm if the relief were denied.\textsuperscript{272}

A practitioner next must determine whether she can meet the threshold burden of persuading the judge to permit the plaintiffs to pursue medical monitoring relief. The threshold inquiry may differ from jurisdiction to jurisdiction. At a minimum, the practitioner should be prepared to show a reasonable probability that her clients will suffer exposure-related harm in the future, and that medical monitoring is reasonably necessary to properly diagnose the warning signs of the disease.\textsuperscript{273}

A practitioner might look to a recent Third Circuit Court of Appeals decision that set out the elements necessary to establish a medical monitoring claim:

1. Plaintiff was significantly exposed to a proven hazardous substance through the negligent actions of the defendant.
2. As a proximate result of exposure, plaintiff suffers a significantly increased risk of contracting a serious latent disease.
3. That increased risk makes periodic diagnostic medical examinations reasonably necessary.

Fernald area residents; and an epidemiological program to study the causes of deaths among Fernald area residents since 1952 and to determine significant differences, if any, between the Fernald resident population in comparison to the frequency of deaths from various causes in the United States, in Ohio, and in the Hamilton and Butler Counties area of Ohio. See Fifth Report of Special Masters/Trustees, July 25, 1991, In re Fernald Litig., No. C-1-85-0149 (S.D. Ohio Sept. 29, 1989); Fourth Report of Special Masters/Trustees, Mar. 26, 1991; Third Report of Special Masters/Trustees, Dec. 19, 1990; Second Report of Special Masters/Trustees, Sept. 23, 1990; First Report of Special Masters/Trustees, May 30, 1990. The Fernald Medical Monitoring Program is limited to medical surveillance and contains no remedial provisions. If, as a result of diagnostic exams, a Fernald claimant discovers that she has developed an exposure-related illness, she may not recover the expenses for treating the illness from the fund. Telephone Interview with William T. Hayden, supra note 235.

\textsuperscript{270} See supra notes 238-242 and accompanying text.
\textsuperscript{271} 673 F. Supp. 1466 (N.D. Cal. 1987).
\textsuperscript{272} See id. at 1477-78.
4. Monitoring and testing procedures exist which make the early
detection and treatment of the disease possible and beneficial.274

Additionally, the practitioner should be prepared to present competent
expert testimony to prove these factors.275

If the practitioner prefers to litigate in federal rather than state
court, she must determine if any applicable federal statutes would permit
an exposed individual to pursue an assertedly state medical monitoring
claim in federal court. A hazardous waste case in federal court that in-
cludes CERCLA claims, for example, also may include state common
law claims.276 A plaintiff's reliance on certain statutes, however, may
either help or hinder her medical monitoring claim. For instance, in the
federal jurisdictions that have recognized medical surveillance costs as
necessary response costs under CERCLA,277 the practitioner should as-
sert a medical monitoring claim under CERCLA, as well as under com-
mon law principles. The practitioner should be wary, however, that
CERCLA provides opportunities to mire a medical monitoring claim in
technical legal arguments.278 Other statutes, such as workers' compen-
sation statutes, also provide opportunities for sidetracking medical moni-
toring fund claims. A plaintiff's attorney should be prepared to prove
that the statute in question does not provide a medical monitoring fund
remedy and, therefore, does not preempt the medical monitoring
claim.279

An attorney who represents toxic exposure victims might consider
requesting provisional relief from the party or parties whose conduct re-
resulted in the release of toxic substances. This type of relief, if granted,

1988)).

275. Id. (citing Ayers v. Jackson Township, 106 N.J. 557, 606, 525 A.2d 287, 312 (1987)).

seeking medical monitoring claim under CERCLA and state common law); Werlein v. United
States, 746 F. Supp. 887 (D. Minn. 1990) (plaintiffs seeking relief under three federal environ-
mental statutes and under state common law).

277. See supra notes 65-67 and accompanying text.

278. For instance, Daniel Berger, who has pursued numerous medical monitoring funds
on behalf of plaintiffs, has seen defense attorneys make a variety of technical legal arguments,
such as arguing that CERCLA preempts state common law claims or that CERCLA prevents
private common law actions while the federal cleanup is underway. These arguments rarely
succeed but do serve to delay the litigation. Telephone Interview with Daniel Berger, supra
note 233 (Nov. 21, 1991).

279. Telephone Interview with Peter Kunstler, Attorney, Century City, California (Janu-
ary 9, 1992). In discussing Barth v. Firestone Tire & Rubber Co., 673 F. Supp. 1466 (N.D.
Cal. 1987), Mr. Kunstler indicated that the major sticking point was California Labor Code
§ 3602 (West 1989), the exclusivity provision of the California workers' compensation statute.
According to Mr. Kunstler, if the toxic exposure occurred at the workplace, the employer will
always assert a workers' compensation exclusivity argument, which forces the plaintiff em-
ployees to prove that medical monitoring is not a remedy covered under the workers' compensation
statute. Id.
would provide immediate medical monitoring services to exposure victims prior to the conclusion of a lawsuit. Courts usually are reluctant to order defendants to provide relief to plaintiffs prior to the conclusion of a lawsuit, but some precedent does exist. For instance, in *Friends for All Children v. Lockheed Aircraft Corp.*, the court granted the plaintiff's request for a mandatory preliminary injunction requiring the defendant to create a fund to pay for diagnostic examinations. If the incident that caused the release of toxic substances is widely publicized, the responsible party might voluntarily provide provisional relief to avoid a public relations debacle. An example of this is the Southern Pacific Railroad's voluntary payment of out-of-pocket medical expenses for people who suffered ill effects, such as difficulty breathing and skin irritations, from the chemical spill that devastated California's upper Sacramento River in July 1991.

B. Medical and Scientific Considerations

The scope of relief is necessarily a medical and scientific issue that should be determined by medical and scientific experts. To determine the appropriate scope of relief, experts must assess a plethora of factors including, but not limited to, the following: The nature of the toxins to which the plaintiffs were exposed; the known or suspected health effects of the toxins; the nature of the potential exposure-related diseases; and the chance that early detection will benefit the exposure victim.

The circumstances of each case will directly influence medical and scientific determinations. For example, a full scale medical surveillance program may not prove necessary if medical experts and scientists determine that the levels of exposure were too slight to pose serious health risks. Alternatively, a preliminary health study of the exposed population might identify critical subgroups who would benefit the most from periodic medical screening. When the Hawaii milk supply was tainted with the chemical heptachlor in the early 1980s, the babies of women

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280. 746 F.2d 816, 831 (D.C. Cir. 1984) (holding that preliminary injunction requiring defendant to create medical monitoring fund was proper when delay inherent in trying the case would result in irreparable injury).


282. *Cook v. Rockwell Int'l Corp.*, 755 F. Supp. 1468 (D. Colo. 1991), illustrates the confusion that results when judges try to rule on these types of medical and scientific issues. Judge Babcock first held that a medical monitoring claim compensates plaintiffs for diagnostic treatment and "does not compensate a plaintiff for testing others to determine the odds that a particular person might contract a disease." *Id.* at 1478. Nine months later, after reconsidering the issue, Judge Babcock reaffirmed his holding that "generalized population based scientific studies are not cognizable in a medical monitoring cause of action," but held that a population-based health study would be considered part of a medical monitoring claim as long as it was limited to pooling the data derived from the medical tests of exposed plaintiffs. *Cook*, 778 F. Supp. 513, 514 (D. Colo. 1991).
who drank the contaminated milk faced an increased risk of birth defects. A number of studies, including one funded by a multimillion dollar class action settlement, specifically investigated the health effects of heptachlor on the at-risk population.\textsuperscript{283}

Another important medical and scientific consideration is whether early detection of an exposure-related disease will benefit the claimant. For instance, if breast cancer could result from the toxic exposure, then a medical monitoring fund will benefit the claimant because early detection improves the prospects for treating breast cancer.\textsuperscript{284} On the other hand, if the exposed claimant risks lung cancer, then medical experts might discount the value of periodic medical exams on the belief that the prospects for treating lung cancer, even when detected at an early stage, are slim.\textsuperscript{285}

Lawyers and judges must rely on medical experts and scientists to determine how frequently the exposed individuals should be tested and what diagnostic procedures are warranted. For example, in Burns v. Jaquays Mining Corp.,\textsuperscript{286} the plaintiffs' medical expert, Dr. Michael Gray, testified that the surveillance should include physical exams, blood and urine tests, electrocardiograms, periodic chest x-rays, CT scanning techniques, and/or magnetic resonance imaging and pulmonary function testing. Dr. Gray also recommended periodic rectal and gastrointestinal exams for individuals who were over age forty at the time of their initial exposure to asbestos.\textsuperscript{287} The University of Cincinnati Medical School submitted a protocol for the Fernald Medical Monitoring Fund, which was approved by the court and subsequently implemented.\textsuperscript{288} The protocol provides for a two part comprehensive medical history and initial physical examination of all eligible and interested adults,\textsuperscript{289} including blood and urine tests, chest x-rays, EKG's, spiromgrams, pap smears, mammograms, and an examination of all organ systems.

C. Practical and Administrative Considerations

Like the medical and scientific considerations, the number and variety of practical and administrative considerations appear limitless because of the unique circumstances of each case and the unique needs of

\textsuperscript{283} See 1 AMERICAN LAW INST., supra note 9, at 327 n.69; Gara, supra note 7, at 299. A University of Hawaii researcher discovered a rise in birth defects among babies of women who drank the contaminated milk. Ronald A. Taylor, Is the Food You Eat Dangerous to Your Health?, U.S. NEWS & WORLD REP., July 15, 1985, at 64.

\textsuperscript{284} Telephone Interview with Allan Kanner, supra note 239.

\textsuperscript{285} Id.


\textsuperscript{287} Id.

\textsuperscript{288} A copy of the Medical Monitoring Program Protocol is on file at the Hastings Law Journal office in San Francisco, Cal.

\textsuperscript{289} Separate medical monitoring procedures were set out for children.
individual toxic exposure victims. A major factor in determining the feasibility of and designing a medical monitoring program is the number of exposed individuals and the number of defendants. If large numbers of individuals are involved, judges might favor a formal medical monitoring program for administrative efficiency. For example, the Fernald Medical Monitoring Fund services a plaintiff class estimated at thirty thousand members; the sheer number justifies the appointment of three Special Masters/Trustees and the maintenance of a fully equipped medical facility with full-time medical staff, an extensive computer system, and community outreach capabilities.\(^2\) This type of comprehensive medical program simply would not be feasible with a smaller group of claimants. That is not to say, however, that medical monitoring funds are possible only in mass exposure cases. If the exposure affected smaller groups of individuals, less extensive medical monitoring funds still may be implemented.\(^3\) Rather than maintaining a full-time medical staff to provide examinations, for example, a more modest medical monitoring plan might provide claimants with references to specific medical facilities and then reimburse the claimants for the cost of the exams.

Additional practical and administrative considerations include what form the medical monitoring fund should take and who should supervise it. If a court is involved, the judge may wish to appoint a trustee to administer the fund. The judge may appoint a magistrate to address questions as they arise, or she may wish to remain directly involved in supervising the fund. If children are involved, a judge may order the creation of a special trust fund or conservatorship to protect the money and ensure that the children receive the proper medical exams. If the medical monitoring award is a result of a private out-of-court settlement, the defendant might purchase an annuity to fund the plaintiff's future medical exams.

Provisions will have to be made regarding how long the medical monitoring fund is to operate, and what happens to the remaining money, if any, at the time the fund terminates. The advice of medical experts might be useful in determining the length of time a fund should operate. For instance, if the exposure-related disease for which the exams test is known to manifest itself within twenty-five years of exposure, testing beyond that time period may not be medically necessary.

Medical economists can estimate the cost of future medical services so that judges and practitioners can ensure that a sufficient amount of


\(^3\) H.R. Brandell, a structured settlement specialist, believes that an effective periodic payment plan for medical monitoring is possible even if only one or two individuals are involved. Telephone Interview with H.R. Brandell, supra note 140.
“seed money” is obtained for the fund. Then, a trustee or fund administrator can take responsibility for managing the fund assets. The Fernald Settlement Fund trustees invested the money in short term United States Treasury bills, notes, and other obligations secured by the United States Government. They also established the Fernald Medical Foundation, Inc., a tax exempt trust pursuant to Section 501(c) of the Internal Revenue Code to fund the Medical Monitoring Program. The tax exempt status will result in direct cash savings to the plaintiff class.

D. The Human Factor

The individual needs and characteristics of toxic exposure victims are perhaps the most important factors for judges and attorneys to consider. If the exposed individual opposes the concept of periodic medical monitoring, or simply lacks enthusiasm for the idea, then even the most dedicated counsel will have difficulty convincing her client that a medical monitoring plan is superior to a lump sum award. According to one practitioner, exposure victims are like alcoholics and drug users in that they often deny that their health is at risk and that they need assistance. Other practitioners cite the fact that given the choice between a lump sum award for medical monitoring or the creation of a medical monitoring fund, most will opt for the lump sum even if it is discounted to present value.

The age of the exposure victim may determine whether a medical monitoring fund claim will be successful. For example, judges might be more likely to approve of a fund mechanism if children are involved. Exposed parents with small children might be more supportive of an ongoing fund mechanism if they believe their children’s health will be better cared for with a medical monitoring fund than with a lump sum award. Older individuals might be more likely to prefer a lump sum because the long latency periods of exposure-related diseases mean that an older person will benefit less from early diagnosis than a younger person. The fact that many older individuals live on fixed incomes might influence them to reject periodic payments in favor of a lump sum that

293. Id. at 8-9.
295. Telephone Interview with Mark Harrison, supra note 266 (stating that, although he recommended a medical monitoring fund to his clients, they opted for a lump sum award); contra Telephone Interview with Richard J. Lippes, supra note 250 (stating that parents of young children and more sophisticated plaintiffs might prefer a medical monitoring fund to a lump sum award).
they can enjoy while they are alive. Practitioners must carefully consider these and other factors when litigating medical monitoring fund claims.

Conclusion

For many Americans, exposure to toxic substances has become a sad reality of life. The medical and scientific communities already have recognized the need for presymptom, postexposure medical diagnosis to detect and treat exposure-related diseases as soon as possible. The legal community has responded more slowly to the problems faced by toxic exposure victims. Most of the courts that recently have ruled on claims for medical surveillance, however, have recognized the value of postexposure, presymptom medical surveillance. Recognition of this claim by all courts would go a long way toward healing the wounds inflicted when individuals are unwittingly exposed to toxic substances.

While the lump sum award is the most common method for paying damages awards in both the settlement and judgment contexts, the periodic payment of medical surveillance expenses through the use of court-supervised, defendant-funded programs is preferable in certain cases. A practitioner must carefully weigh legal, medical and scientific, practical and administrative, and human considerations in determining whether her client will benefit from the creation of a medical monitoring fund or comparable periodic payment mechanism.