Frumer & Friedman § 16.04[04]; 2 Harper & James, Torts § 28.7 (1956); Rheingold at 976–77. Nevertheless, if direct communication is dispensed with, it would appear that a plaintiff must still prove reliance by the physician. See id. at 977.

Dr. Feinberg, the administering physician, testified that he had read the package insert (TR 610, 616). According to him, it presented no more than he had already been taught in his formal medical education and in his practice (TR 460–63, 617). But, as will be discussed *infra*, the evidence clearly indicates the greater incidence of febrile reactions resulting with the use of Quadrigen, so that the statement as it appears in the package insert is incorrect. Moreover, the statement regarding encephalitic reactions is, at the very least, an ambiguous one (TR 610–18).

However, whether these statements can be properly characterized as express warranties which were breached need not be reached in light of my subsequent decision with respect to the implied warranty of merchantability.

Implied Warranty

In Picker X-Ray Corp. v. General Motors Corp., 185 A.2d 919, 922 (D.C.Mun. Ct.App.1962), it was stated that:

> Implied warranty recovery is based upon two factors: (a) The product or article in question has been transferred from the manufacturer's possession while in a "defective" state * * *; and (b) as a result of being "defective" the product causes personal injury or property damage.

The critical problem, then becomes the meaning of the word "defective". One commentator has attempted to distinguish between pure and impure drugs, the former being "those sold as the manufacturer intended, but with the harm arising as a side effect because of some inherent quality" and the latter being defined as "those sold other than as the manufacturer intended, and containing deleterious impurities." Rheingold at 970. According to this article, additional considerations flow from a finding that the drug is pure. Id. at 983. The problem with this definition is that in the instant case it is unclear whether a pure or impure drug is involved. It can be argued that Quadrigen was pure because its ingredients were as the manufacturer intended. On the other hand, it can be as persuasively contended that the drug was impure because the endotoxin that was released from the bacterial cell into the fluid was "a deleterious impurity" and thus the drug was defective.

Another commentator suggests a more reasonable test: "[T]he issue as to whether a substance not intended to be present is natural or foreign is completely immaterial on the ground that a product is to be regarded as defective *if a reasonable man would not have sold it had he known of the presence of the substance in the product.* Keeton, Products Liability—Liability Without Fault and the Requirement of a Defect, 41 Texas L.Rev. 855, 861–62 (1963). (Emphasis added.)

The commentary to the Torts Restatement provides perhaps the best working definition of a defect: "the product is, at the time it leaves the seller's hands, in a condition not contemplated by the ultimate consumer, which will be unreasonably dangerous to him." Restatement (Second) of Torts § 402A, commenting at 351 (1965).

[12] Whatever definition is used, in my opinion the proof amply sustained the fact that Quadrigen was defective and that the defect was the proximate cause of the injury sustained by Eric Tinnerholm. Compare Stromsodt v. Parke-Davis & Co., 257 F.Supp. 991 (D. N.D.1966). I need not discuss the evidence with respect to the biological and clinical testing of Quadrigen by Parke-Davis and the National Institutes of Health at this time although such matter has been fully considered by me in reaching conclusions on the warranty issues. The matter of testing will be amply discussed in the negligence portion of this opinion. However, certain of the articles that have been written in the field and received in evidence, the deposition of Dr. Margaret Pittman of the Division of Biologics Standards (hereinafter referred to as "DBS") of the National Institutes of Health (hereinafter referred to as "NIH"), and testimony elicited at the trial are all important, have been considered by me in reaching this conclusion and will be discussed at some length herein.

[13] The occurrence of encephalopathics following administration of vaccines containing a pertussis component has been long known but the specific element that causes this explosive assault to the brain has not been discovered. See Berg, Neurological Complications of Pertussis Immunization, British Medical Journal 24 (July 5, 1958); Byers & Moll, Encephalopathies Following Prophylactic