overdoses of propoxyphene involve other drugs including alcohol and diazepam.

In the deaths we have attributed to propoxyphene there was in our opinion, and I am sure Dr. Hudson has read this and agrees with me, there was a sufficient quantity of the drug to cause death in the absence of the other drugs but the other drugs may have been contributory factors in the deaths.

Of the 183 deaths attributed to propoxyphene at least 145 or about 80 percent did not have enough alcohol or any other drug that we found to have caused death; in each sufficient propoxyphene to cause death was found, at least in our opinion.

In seven cases greater than 20 mg/dl of salicylate was found. This could come from a propoxyphene-aspirin containing product.

Of course, we have no way of knowing if somebody takes propoxyphene alone, or aspirin alone, or they take another product with it.

Most of our cases involved deaths of middle-aged individuals and not the younger drug abusers.

In fact, I do not recall any deaths in the young abusers, certainly not by injecting the drug.

Although propoxyphene was introduced in 1957, it was not until around 1970 that analytical procedures for adequately detecting and measuring it in the relatively low concentrations present in the blood of those fatally poisoned began to be reported.

Twelve articles of propoxyphene overdoses published from 1960–70 reported four fatalities. This is in the literature.

Eighteen articles published from 1971–75 reported 117 fatalities.

A survey published in 1976, reported 1,022 propoxyphene-associated cases in the years 1969 through July 1975.

There were only 2 in 1969, 7 in 1970, and 11 in 1971 for a total of 20 cases.

And, 1,002 cases were reported for the 3½ years 1972–July 1975.

This survey covered a 5-year period and covered approximately one-fifth of the United States. It was the same areas each year. In the same 9 years, 1970–78 we have discovered 228 fatal overdoses in North Carolina.

In spite of greatly improved analytical procedures which allow for the identification and quantification of not only the parent drug propoxyphene, but also its longer-lived pharmacologically active metabolite, nor-propoxyphene, many laboratories either do not detect the drug or are unable to quantitate it and its metabolite.

In establishing that the drug is a cause of death it is essential that about one microgram of propoxyphene be found in a milliter of blood and not be confused with the usually greater concentration of nor-propoxyphene, the metabolite.

A therapeutic dose of 130 milligrams (two 65-mg doses) of propoxyphene hydrochloride produces concentrations of the order of 0.1 mcg/ml of blood. This is about one-tenth what we consider a lethal blood concentration.

In a national proficiency testing program in 1978, and others are similar, which involved 273 laboratories, 120 laboratories reported that propoxyphene was identified and nor-propoxyphene was identified by 32.