

the lack of nor-propoxyphene toxicity data as a problem in analyzing the effects of this drug.

Nor-propoxyphene is toxicologically significant because of its prolonged retention. Nor-propoxyphene has a half-life in the body of about 38-40 hours. This is between three and four times the half-life of the parent drug, propoxyphene. As the patient takes the drug every few hours, the desired effect, whether it be euphoria or pain relief, is dissipated in the first several hours. The propoxyphene is being rapidly metabolized while the toxic nor-propoxyphene metabolite is constantly building up because of its long half-life.

Accidental propoxyphene overdoses in Oregon consistently reflect nor-propoxyphene levels between 2-10 times propoxyphene levels. In accidental deaths, total gastric (stomach content) levels are generally low, indicating that a large amount of drug was probably not ingested at once. These results are in contradistinction to the suicide case in which we find higher blood propoxyphene/nor-propoxyphene ratios and a large amount of propoxyphene in the stomach.

#### REPORTED DEATHS ARE A SMALL PERCENTAGE

Large numbers of propoxyphene deaths are not unique to the state of Oregon in 1978. There is no question in my mind that the 589 propoxyphene-related deaths reported through the DAWN network in 1977 represents but a small percentage of the deaths from this drug nationwide.

It should be recognized that medical-legal death investigation systems in most states in this country remain in an abysmal state. Many states and communities still operate under an elected coroner system which results in a wide variety of untrained individuals attempting to investigate all types of unexplained death. For example: In one neighboring state, elected coroners include a newspaper editor, funeral directors, ambulance attendants and prosecuting attorneys. Each of these individuals is responsible for directing the death investigation program in his or her particular county, and that authority is autonomous. Not only are they inadequately trained to investigate such deaths, but they do not have access to the sophisticated instrumentation required to do drug analyses; and autopsies are done on an infrequent and inconsistent basis, depending upon the coroner's budget, whims and training. I can guess at how many propoxyphene-related deaths occur in communities with such a set-up, and this constitutes much of the nation. Suffice to say, many are missed.

I would estimate that there are about 3,000 to 4,000 propoxyphene-related deaths annually in the United States. I arrive at this estimate by taking incidence figures from sound and well-run state-wide medical examiner systems such as North Carolina and Oregon and local jurisdictions such as Dallas, Phoenix, Miami and San Francisco. There are, of course, others.

#### PUBLIC AND PHYSICIAN EDUCATION HAS DECREASED PROPOXYPHENE-RELATED DEATHS IN OREGON

During the past few years, the Oregon State Medical Examiner's Office has attempted, on an episodic basis, to alert the public and physicians to the dangers of this medication through press coverage and publications to physicians. The dramatic increase in these deaths early last year, including eight in a two-week period in Portland, prompted a "media blitz." Several articles appeared in newspapers throughout the state, and some of this attained nationwide attention. I appeared on several local television news shows and talk shows and recorded radio interviews throughout Oregon and in some neighboring states. Information was disseminated to Oregon physicians through the State Medical Examiner's Newsletter and the Oregon State Health Division's Communicable Disease Summary. The state recorded eight propoxyphene-related deaths during the six months following this "blitz." This is in contrast to the two preceding six-month periods in which the state recorded 21 and 18 propoxyphene-related deaths respectively.

I feel we have demonstrated that public and physician education can help decrease the numbers of these deaths, but this is not the answer to the problem. I expect the decrease to be temporary and the problem to recur as the publicity subsides. I view widespread publicity as a short-term deterrent with some long-range beneficial effect in educating the physician-prescribing community.

Oregon's attempts at bringing the attention of the federal government to this problem have met with frustration. My letters to two officials of the FDA written