

It is my understanding that most clinical tests are poorly executed.

For example, in the Journal of the AMA, November 6, 1967, an article entitled "Studies of Drug Usages," pages 406 to 510, a review of over 200 papers reporting on the efficacy of many of these agents—that is, drugs most used in hospitals—revealed that very few studies were well controlled. This is on page 510 of the Journal of the AMA.

I ask this article be inserted in the record at this point.

(The article referred to follows:)

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STUDIES OF DRUG USAGE IN FIVE BOSTON HOSPITALS

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A study of drug usage was conducted in five hospitals: two hospitals for patients with acute diseases, two for patients requiring long-term care, and one pediatric hospital. Partially due to the increased length of hospitalization, more drugs were used in long-term hospitals. The number of different drugs used to treat the same problem varied greatly. For some therapeutic indications, one particular drug was widely accepted by most hospitals; in others, there was a wide variance. More than one drug of the same pharmacological action was often prescribed for the same patient. Older patients and women received more drugs. Antibiotics were used in a high percentage of all hospital patients. There were many incomplete prescriptions and discrepancies between drug orders written by doctors and records of medications administered by nurses. These results indicate the need for an epidemiologic approach to therapeutics.

During the past few years the medical community has become aware of the need for more and better information concerning drug efficacy and adverse drug reactions. The importance of obtaining more data in these areas appears to be well recognized in England where the National Health Service has gathered statistics concerning the prescribing habits of British physicians over a four-year period (1959 to 1962). The British Ministry of Health is keeping records of all general practitioners, and these records are periodically checked for "over-prescribing." (1, 2) Public health authorities in West Germany and Canada show an increasing interest in drug epidemiology and have established agencies responsible for studies on drug use and adverse reactions. (3-5) The great majority of publications as well as the structure of the existing programs indicate that investigators are focusing their attention mainly or entirely on the problem of adverse reactions to drugs. (6-10)

However, an adverse reaction program requires the denominator factors for a meaningful interpretation of the numerator data. (11) More specific information may be obtained if adverse drug reactions are correlated with the vital statistics (age, sex, race, etc) of the study population. In a hospital study, the recording of these factors together with characteristics of the hospital itself, such as whether the hospital cares for patients with acute or chronic diseases, whether it is a private or municipal hospital, the number of ordering physicians, and the type of hospital formulary will provide what may be called the "drug profile" of a hospital.

The prescribing habits of the physicians involved should also be studied. It is estimated that in 1963 between 700 and 800 million prescriptions were written in the United States, approximately 12.8 prescriptions for each family.¹² This speaks for the enormous importance of collecting relevant data in regard to drug usage.

A drug survey was conducted in five hospitals in order to describe current drug practices and to point out some aspects of drug use which require further investigation in depth.

METHODS

Randomly chosen records of patients who were discharged or who died between Sept. 1, 1964, and Aug. 31, 1965, were studied in five hospitals in the Boston area. A total of 682 charts were reviewed. One of the hospitals cares for patients with chronic diseases (average stay, 307 days), one for patients requiring intermediate-