

responses—questions answered “YES” are followed up in detail and questions not understood are explained further. Responses are made by keyboard entries.

Thus far, results with the program has been encouraging. Over 300 patients have been interviewed by computer. A general medical history and specialty histories dealing with symptoms of allergy and gynecology have been developed and tried clinically. Endocrinology, neurology, psychiatry, gastroenterology and pediatric histories are currently under development.

Teletype machines have also been used as interviewing terminals connected to the computer by telephone line. With this technique, the computer is dialed from the phone on the teletype and when telephone connection is established, questions are printed by the teletype under computer control. Patient responses are made by the teletype keyboard to the computer, which in turn responds with the presentation of another question. Thus far, 60 allergy histories have been taken by teletype. Remote interviewing (teletypes on long distance phone lines to the computer in Madison) have been conducted on a demonstration basis from the Mayo Clinic in Rochester, Minnesota, New York City, Chicago, and Los Angeles. It is hoped that, with such techniques, computer-based patient interviewing can be made available to physicians and their patients in areas removed from computer facilities.

B. The Computer in the Laboratory.—The demands for laboratory services have been increasing rapidly over the past decade. Automated instrumentation which can perform certain laboratory tests have helped meet the increased demands, but there still remain the problems of calculating, processing, and communicating the mass of information produced by the laboratory. In order to continue to meet the increasing work load and still maintain the high quality of laboratory information, the use of high speed digital computers is being investigated in many laboratories.

The use of LINC computers in clinical laboratories was pioneered by Dr. G. Phillip Hicks at the University of Wisconsin in late 1964. This has been operating in the University of Wisconsin Clinical Laboratory for over 2 years.

At Wisconsin, programs have been developed to permit the laboratory computer to be used directly by all laboratory staff without special training in computer technology. Laboratory information is collected from the staff by the computer, which provides a real service by performing calculations of test results and statistically analyzing the results. Where automated instruments perform analysis in the laboratory, the computer collects the results directly from 16 instruments simultaneously while checking the quality of each result as it is processed.

In the Wisconsin laboratories, three remote teletype stations are connected to the computer for the distribution of information within the laboratory.

The programs developed at Wisconsin have been placed in the public domain and are available to any other laboratory upon request. To assist other laboratories in evaluating computers, a two-week postgraduate medicine course was presented at Wisconsin in May, 1967. At present, the Wisconsin programs are being used in the Biochemistry Laboratory at Duke University Medical Center under the direction of Dr. Ralph E. Thiers. Upon request, specific programs have been made available. For example, the Wisconsin statistical programs for analyzing laboratory data have been used at Perth Amboy.

As more laboratories throughout the nation install such computer systems, telephone communication lines for the rapid communication and exchange of medical laboratory information will be of great value.

SECTION II

The University of Wisconsin Medical Center and the University Extension have long been pre-occupied with problems of health care personnel which may best be summarized by a series of statements that are pertinent though they may not appear to be related.

(1) While there is a great volume of comparatively static core information which is structural, functional and behavioral in pattern, there is a proportion of what we believe and teach in medicine today which will have been disproved in ten years. There will be a great new body of knowledge which the physician and all those delivering health care will have to acquire if they are to deliver optimal care.

The physician is now and will continue to be in the constant state of having to unlearn certain segments of his fund of informaton, revise and update other