NEWS / MEDICAL RECORDS
Medical Records and the Computer

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On April 18, 1974, Massachusetts Blue Shield announced that it intended to set up a for-profit, wholly-owned subsidiary called Blue Streak.[1] During its initial stages, Blue Streak will sell computerized billing services. Later on, however, it will provide services that will enable physicians and clinics to store medical records in a centralized data bank.

Blue Shield is not the first organization to enter the field of computerization of medical records. In 1968 H.E.W. funded the Kaiser-Permanente Health Care Program to establish a pilot project to computerize its medical record system for the one million members in its plan.[2] Hospital and clinical diagnoses, laboratory test results, x-rays, pathology, electrocardiographic examinations medical history and a record of drugs dispensed were all placed in the data bank. Every time a patient visits a Kaiser facility, an entry is made on his record. Recently, however, the government grants ran out and Kaiser found the system too expensive to continue without further aid.[3] But at least one Kaiser official has recognized that in the face of spiraling manpower costs rise and lowering of computer costs that computerization will be utilized in the future.[4]

Columbia-Presbyterian Medical Center in New York is now making extensive use of computerization.[5] Its "ABCD" was originally used for admitting, bed control and discharge but is now used to report and record all laboratory tests.

It has been reported that a group of physicians at the University of Vermont College of Medicine are perfecting a computerized records system.[6] The system which has been successfully tested in the gynecology department will eventually link all parts of the Medical Center, outpatient clinics, and community physicians to the central record bank. By merely

pushing a button in his office the physician will receive the entire medical record of his patient.

H.E.W. has established a comprehensive health information system on an Indian reservation in the Southwest.[7] 10,000 Indians live on the reservation and another 4,000 have records in it. This is a very highly mobile population living in an area about the size of Connecticut with very serious health problems. The system is tied in with a health facility that provides inpatient, outpatient and field clinic services. The record-keeping system was devised to develop a "complete, cradle to grave, medical dossier on each individual eligible to use the facility" so that all could benefit from the available health care programs.

The record-keeping system consists of three segments. The first is the administrative one that sets out the details of every patient contact. The second involves statistical reporting that is used to determine the incidence of particular ailments and determines high risk groups which need particular care. The third segment serves a surveillance function that consists of the recorded results of medical tests given on a scheduled basis for the purpose of discovering incipient medical problems. The scope of this system is impressive, and is especially interesting since it could serve as a model for a regional or national comprehensive health information system.

As one can see, the concept of computerization of medical records is not new. The Blue Streak plan is, however, especially ambitious. It can provide computerization of the medical records of all private physicians in Massachusetts, or, to look at it another way, it could store the medical records of the more than 5 million Massachusetts citizens in one data bank. If this endeavor is successful, it could be a first step

in establishing a national or regional computerized medical record system that has been discussed in recent years.[8]

There are several advantages in the computerization of medical records. The first, and a very real advantage, is that they are legible and organized. This has been a significant problem in the past. As an example, in one study of quality care assessment the investigators asked a group of doctors to evaluate the quality of care provided by a group of physicians.[9] The investigators did not provide the doctor-evaluators with the medical records of the patients for their evaluation of the care delivered. Instead, the investigators provided the doctor-evaluators with an abstract which they constructed. In their own words, "The abstract differed from the medical record in three ways: it was legible; results of laboratory tests that were performed but not recorded in the medical record were recorded in the abstract; and the information was placed in chronological order. The abstract was used as a basis for forming the implicit judgments instead of the medical record to avoid having these judgments depend more on the legibility and organization of the record than on the content of the record."[10] Computerization would solve both the legibility and organization problems.

Another advantage is that a person's centrally-computerized medical record would be readily retrievable. Thus a person who enters a hospital away from his home would be able to have the new medical team read his entire medical history without any delay.

Centralization along with easy retrievability would also reduce the duplication of efforts now necessary each time a patient enters a different hospital. Under the present system each time an individual enters a hospital a

complete medical history must be taken and standard tests are given. With access to an up-to-date medical record, much of this work would become unnecessary. Computerization would also prevent the loss of records which occasionally occurs within the manual system used at the present time. Finally, computerization would facilitate the gathering of medical statistics and epidemiological studies.

The major disadvantage to the centralized computerization of medical records is that it would facilitate unauthorized access. An advantage that the inefficiency of the present system provides is that it is not very easy to locate all of the medical records an individual has accumulated. Thus if an unauthorized person (or an authorized person, for that matter) wishes to obtain all of an individual's medical records, he would have to go to several hospitals probably scattered throughout a number of states as well as to numerous individual doctor's offices. After computerization one would have access to all the records at one of the many computer terminals.

But one must ask, "How secure is the present system?" Neither Dr. Daniel Eagleton, nor District Attorney Frank S Hogan would testify as to the security built into the manual filing system. Once the location of a file is determined, only a locked filing cabinet stands between it and its misappropriation.

There exist today highly sophisticated mechanical techniques by which information in computers can be made secure.[11] These are now utilized by the government, industry and the military to safeguard their computers. One can insist that these mechanical security methods be utilized by any computerized medical record system. One non-mechanical safeguard that could be utilized is the prohibition against the use of social security numbers to identify patients. Social security numbers are employed by colleges, registrars of motor vehicles, hospitals and a great many other institutions as a means of identification. This makes access to such numbers readily available and its use would reduce the security of a computerized medical records system.[12]

Computerized medical records must not be made available for any non-medical purpose. One of the fears associated with the computerization of medical records is that it would be used by the governmental agencies, insurance companies, law enforcement agencies and other institutions. The only purpose of the computerized medical record is to help medical professionals render better medical care. It is not to make the jobs of law enforcement agencies, insurance companies, or credit agencies easier. There must be an absolute ban against the use of the records for non-medical purposes. Both the state and Federal governments should closely regulate the functioning of such systems and statutes could be passed that would punish the unauthorized disclosure, use or receipt of medical records.[13]

It is also important to give patients access to their computerized medical records, if for no other reason than to insure their accuracy. Within the Kaiser system, 10% of the computerized records contained errors.[14] It is believed that this rate of error could be reduced to 3% before the costs become prohibitive.[15] This being the case, it is essential that the patient be permitted to check his record for errors. Included in this is the design of some mechanism for the correction of such errors.

In addition, a policy decision would have to be made deciding whether particularly sensitive information, such as psychiatric records, should be stored along with the rest of one's medical record.

Such medical information systems should not be allowed to police themselves. Adequate statutory and regulatory provisions should be set forth, and security measures built into specific computerized medical record systems before the centralized computerization of medical records be generally established nationwide.

1. **The Boston Globe**, April 8, 1974, p. 5, col. 1.
2. A. Westin, **Databanks in a Free Society**, 205-214 (1972).
3. S. Johnson, "Health Maintenance: It Works," **N.Y. Times Magazine**, April 28, 1974.
4. **Id.**
5. 29 **Stethoscope** 1, Feb., 1974.

6. **Modern Medicine**, June 25, 1973, at 119.
7. **Records, Computers and the Rights of Citizens,** Report of the Secretary's Advisory Committee on Automated Personal Data Systems, U.S. Dept. H.E.W., DHEW Pub. No. (OS) 73-94, July, 1973, at 24-25.
8. An excellent article that discusses this whole area is R. Freed, "A Legal Structure for a National Medical Data Center," 49 **B.U. Law Review** 79 (1969).
9. R. Brook and F. Appel, "Quality-of-Care Assessment - Choosing a Method for Peer Review," 288 **N. Eng. J. Med.** 1323 (1973).
10. **Id.** at 1324.
11. See, e.g., L. Hoffman, "Computers and Privacy, A Survey," 1 **Computer Surveys** 85 (1969); R. Conway, W. Maxwell, H. Morgan, "On the Implementation of Security Measures in Information Systems," 15 **Communication of the A.C.M.** 211 (1972); W. Ware, "Security and Privacy in Computer Systems" **Proceedings AFIPS 1967 Spring Joint Computer Conference,** at 279.
12. **Records, Computers and the Rights of Citizens,** supra note 7, at 24.
13. See, W. Curran, E. Lasker, H. Kaplan and R. Bank, "Protection of Privacy and Confidentiality," 182 **Science** 797 (1973); Freed, **supra,** note 8, at 90.
14. Westin, **supra**, note 2, at 210
15. **Id.**

HEALTH HAZARDS

SKI INJURY - On the rise with estimates for this season of six injuries in every 1,000 skiers, two expected to be serious.

GLOSSY COLOR MAGAZINE PAGES - Chewing by children found to be a significant source of lead poisoning.

PET CATS - Found to be important source of human toxoplasmosis infection. Warnings issued that pregnant women minimize exposure to cats and make sure their hands have been carefully washed before eating to prevent congenital toxoplasmosis in the unborn child.

MANY HEART-LUNG ILLS JOB-RELATED - A Detroit study of 489 auto workers puts blame on dirt, dust, smoke, fumes and other occupational hazards rather than primarily on cigarette smoking as cause of many cardiac and pulmonary illnesses.

(References on request. Mail with stamped, self-addressed envelope)