same sequence as on the master file. The next thing to happen is that the computer brings its master file up to date ("updates it") by adding the new event records to the individual's master file record. It does this by comparing each new event record with each master record in the same Soundex block, to find one where the other identification data match up. If there is incomplete agreement the computer then goes on to do a secondary match, in which it exercises probability judgement: it allocates positive weights for agreements, negative weights for disagreements, sums these, and according to a given level decides whether or not the two records arise from one and the same person. Although this sounds like science fiction, in practice all the computer is doing here is using systematic, quantified analysis in the same way as an experienced clerk does unconsciously.

Using the Linked Records

Periodically the computer scans the file, and this produces information which has never been obtained previously and which has proved extremely useful. For example, each hospital is now sent an annual list of all patients discharged from it who had died later in the year. The value of this kind of service was confirmed by a study which showed that almost half the deaths occurring only a month after discharge had gone unrecorded in any hospital's records department. The computer also lists all cases of non-pulmonary tuberculosis, and these are sent to the medical officers of health, who had found previously that—despite the statutory requirement to notify these cases—about a quarter of the total were not being notified through the normal channels.

Another list is of all patients with cancer of the cervix, which is sent to the pathologist responsible for the cervical cytology screening programme—a vital feedback for this work, which previously had not been available. These examples are good illustrations of the advantages of systematically collected and distributed data over the ad hoc methods they superseded.

The linkage of data previously dispersed throughout many medical record systems has also revealed some interesting features. For example, a study into the use of maternity services showed that in Oxford four-fifths of women having their first baby had it in fully equipped obstetric units: in Reading, on the other hand, this proportion was only one-fifth. This discrepancy was completely unknown to the authorities operating the maternity services, and had clear implications for planning for the future.

Starting Point for Medical Research

The value of a linked file does not end with the data built routinely into its files. Such a file can also provide a starting point for retrospective or prospective studies requiring additional information from other sources. In this way, for example, the file is currently being used to provide follow-up data in a prospective study on folic acid and iron metabolism.

As it stands the linked medical record file produced for the Oxford region provides an invaluable data bank for medical and administrative research. Nevertheless, even though this concerns a relatively large population—with 57 hospitals and four local health authorities—its usefulness is obviously limited. To be fully effective it needs to be further expanded first in terms of the population covered and later in terms of the amount of data collected for each person.

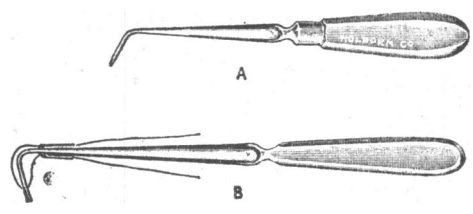
First of all, within the Oxford area itself, the director, Dr. E. D. Acheson, would like to start records for the remaining members of the population who do not appear on the file so far. Complete coverage of the local population would enable many extra services to be provided—such as the arrangement of appointments for screening purposes or follow-up procedures. On the other hand, there are no plans for adding extra data to each individual's record, for too many facts too soon would be more of a problem than an advantage. Thus at present it is thought to be more important to get the basis of a linkage system working throughout Britain. Once a national file was in operation local pilot schemes could then develop aspects of the system further in depth. Nevertheless, although the case for a national linked file has been set out, and it would be relatively easy for a computer to handle it, the implementation of such a scheme would have to wait for Government decision.

NEW APPLIANCES

Elson Ligature Carrier and Awl

Mr. D. TREVOR, orthopaedic surgeon, Charing Cross Hospital, London W.C.2, writes: The instruments illustrated were originally designed by Mr. Elson, former theatre technician at Charing Cross Hospital, to facilitate the passage of suture materials through the bone of the anterior margin of the glenoid fossa during the Bankart operation for recurrent dislocation of the shoulder.

A pilot hole is bored with a dental or angled drill, and this is enlarged by the angled awl (A). Once loaded the ligature carrier (B) holds the suture material securely until it has passed through the bone, when the suture material can be grasped with forceps. For this purpose the carrier is found easier to manipulate than a boomerang type of device or conventional aneurysm needle, and its long handle prevents visual obstruction.



These instruments are made by the Holborn Surgical Instrument Co. Ltd., 15 Charterhouse Street, London E.C.1.