Report filing in histopathology

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SUMMARY An assessment of alternative methods of filing histopathology report forms in alphabetical order showed that orthodox card index filing is satisfactory up to about 100 000 reports but, because of the need for long-term retrieval, when the reports filed exceed this number they should be copied on jacketed microfilm and a new card index file begun.

Our histopathology reports are filed both numerically and in an open-ended alphabetical file as a card index. Saturation of the available card index space necessitated a reappraisal of the system, which currently contains 100 000 cards, each 6 × 4 in (15 × 10 cm), arranged in alphabetical order in 40 steel drawers occupying a space 80 in (200 cm) long, 25 in (62.5 cm) high, and 20 in (50 cm) deep. Each card bears a report on a surgical specimen and the system contains the reports of the past 25 years.

In the past the solution has been to store the cards elsewhere to make room for the next batch. On this occasion the initial approach was to ascertain the feasibility of putting the abstracted information on a regional computer and adding new biopsy reports as they occurred, entering these once a month, and withdrawing an updated microfilmed print-out of the entire store on plastic cards (microfiches) once a month. Recent cards already carry an abstract (usually one word for tissue of origin and two words of diagnosis) but most do not, and determining and printing the abstract on these takes 16 seconds (mean) for a pathologist (total time for 100 000 cards 440 hours) or 19 seconds for an experienced secretary (total time 530 hours). Furthermore, the checked input of identification data and abstract would occupy one girl-year. This possibility was discarded.

The second approach was to consider a split system—that is, putting the old cards on microfilm, either abstracted or entire, and using either cards in drawers (as hitherto) or computer entry for the reports to be acquired over the next decade. Abstracting the existing records was rejected, mainly because of the work involved but also because the

original cards would have to be kept for reference when the abstract was questioned. Input of the new reports to a computer was also rejected because of the difficulty in establishing a suitable terminal, the relative inconvenience of a monthly print-out (entailing a third index for the current month's reports), the liability to error in the unchecked input typing, and the inadequacy of identification data in a considerable proportion (14% of a sample of 500) of the reports.

We therefore decided to continue to use the traditional card index system for new reports and to investigate the logistics of either microfilming or simply retaining the past 100 000 cards on a separate index.

Method

MICROFILMING OPTIONS

Photography can be rotary, in which the cards are picked up on a moving drum, or planetary, in which the cards are set out in a frame. The rotary system is cheaper but produces a poorer result, so that the possible reduction factor from card to film is less. Both types use rolls of 16-mm black and white film, which can be copied cheaply on to the stronger and visually more attractive diazo film. The roll of film, in either cassette or reel form, is viewed on a hand-driven or motorised reader.

Alternatively, the microfilm can be cut into short strips and put in 6 × 4 in (15 × 10 cm) plastic jackets, which are viewed on a hand-operated reader. The number of cards per jacket depends on the photography—125 for rotary and up to 1000 for planetary. The jacketed microfilm can be copied by the diazo process on to plastic cards of the same size.

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OPERATION TIMES

The time required to execute the various procedures was measured for 20 samples after a few minutes familiarisation with the procedure and is given as the mean ($\pm$ SD). Reaching the correct information and returning the system to its original state took 20 ($\pm$ 3) s for the card index, 52 ($\pm$ 10) s for roll microfilm (motorised reader, 4000 reports per roll, in cassettes), and 35 ($\pm$ 5) s for jacketed microfilm (500 reports per jacket).

Non-cassette roll film was very slow in use because of an additional 27 ($\pm$ 3) s taken to fit the film on the reader and a further 18 ($\pm$ 3) s for rewinding. The time taken for jacketed microfilm was reduced by up to 10 s if detailed indexing was used on each jacket, but the labour of drawing up and photographing this index was considerable and unjustified. The time taken was little affected by the number of cards per jacket, as variation produced the contrary variation in the number of jackets.

Each new specimen is checked against the card index file for previous reports by the secretary. This takes less than 20 minutes a day including time to check alternatives and other identification data. Filing the new cards takes less than six minutes per day. This time varies little with the total number of cards in the file provided partition cards are increased as the total number of cards increases.

COSTS

The current cost of the steel filing cabinets is £225. Hardboard boxes of the same dimensions are available at 80p (total £32): these are adequate for storage but inadequate for easy access. The micro-filming costs are shown in the Table.

Discussion

In simplicity, cost, and speed of operation retaining the cards in their filing drawers is an obvious first choice. However, disadvantages are that the cards can easily be disordered or lost and they occupy a large space. Microfilm solves all three problems. The order cannot be changed, the costs given include a master copy as well as a working copy, and the

amount of space required for the records is negligible. Unfortunately microfilm costs more and is appreciably slower to use, although this is not of practical significance for our mean 16 biopsy reports per day, which would take about 20 minutes on the slowest system.

In view of the unfavourable cost-benefit ratio only the cheapest systems require further consideration. Roll film in cassettes proved irritating to use, owing to the high rate of over-run, the disconcerting flickering of images moving at high speed, and the noise of the motorised reader. The jacketed microfilm system does not have these disadvantages and is therefore the method of choice when at least 100 000 reports have to be retained. With smaller numbers the simple card index system would be preferable.

Two further points deserve consideration. Micro-filming is much easier if only one side of the document has to be copied, and withdrawal of information is much easier if the report already carries an abstract of tissue and diagnosis.

Name changes (for example, by marriage) produce difficulties in identifying previous biopsies. These are overcome only by the clinical staff also providing the original name. Once this has been done the problem does not recur since each biopsy report carries the abstract and specimen number of previous reports from the same patient. Specimens from different patients with the same name seldom cause difficulty since the report includes other identifying data such as forenames, age, sex, and hospital number.

A nosological indexing system is supplementary to the storage systems considered in this report. The computer-based automatic coding system described by Coles and Slavin (1976) can be used to extract either all reports with a particular diagnosis or all reports on a particular patient, but as it provides only an abstract the full report must still be retained elsewhere. I have already stated reasons for doubting the viability of computer filing for histopathology at this time in this hospital, and the likelihood of computer facilities with the necessary immediacy of access for patient management being available in histopathology departments generally appears remote.

Table Microfilming costs

<i>Rotary filming</i>	<i>Cost (£)</i>	<i>Rotary filming</i>	<i>Cost (£)</i>	<i>Planetary filming</i>	<i>Cost (£)</i>	<i>Planetary filming*</i>	<i>Cost (£)</i>
Cards (£5 per 1000)	500	Cards (£5 per 1000)	500	Cards (£15 per 1000)	1500	Cards (£3 per 1000)	300
Roll film (25 rolls)		Jacketed microfilm (800 jackets)		Jacketed microfilm (100 jackets)		Jacketed microfilm (200 jackets)	
1 Diazo copy	50	1 Diazo copy	160	1 Diazo copy	20	1 Diazo copy	40
25 Cassettes	50	1 Reader	150	1 Reader	150	1 Reader	150
1 Motorised reader	440						
Total	£1040	Total	£810	Total	£1670	Total	£490

*Labour costs only. Regional computer centre loaned planetary photographic and jacketing equipment without charge.

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