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We don't have a computer

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Six years ago our practice, operating from two separate health centres, decided to become computerised. Now, in 1991, 98% of children are immunised (a 94.6% rate as calculated for target purposes); the cervical cytology rate is 88.4% among women aged 25-65 (excluding those who have had hysterectomies), with a 100% contact and response rate; 99.6% of the names on the practice list coincide with the family health services authority list—a difference of 35 patients in a list of 9800 patients. Moreover, repeat prescribing has virtually been abolished; appointments are at 10 minute intervals, and we operate eight disease registers. Our prescribing costs are 10% below the family health services authority average, and 99% of our case notes are summarised. These achievements are not unique—indeed they are met by many practices—but in our case they have been obtained without a computer.

Computers are generally seen to be an essential part of good modern general practice. In this paper I hope to show that this is not necessarily so; the improvements made in general practice and said to be due to computers have been caused by other factors. The introduction of computers is neither cost effective nor time effective; they should be relegated to research roles in general practice.

the computer ("input" material) before buying the machine. Once the computer was installed all the data would be transferred by a secretary. After three years, however, by which time 70% of the records had been summarised and coded, we came to the conclusion that nearly all the reasons for having a computer were no longer valid. We all found that we had improved our manual system so that it could achieve almost all the various functions and tasks that a computer might help with. So we decided to concentrate on organising our manual system more efficiently.

Some 70% of general practitioners have or soon will have a computer, and these practices have all incurred heavy expenditure in terms of money and effort. Furthermore, practices using computers seem to need more staff. Controlled trials do not seem to have been done, yet the introduction of computers should be seen as similar to the introduction of a new drug, and we should at least try to determine whether the disadvantages outweigh the advantages. By chance our practice went through all the steps necessary for computerisation without becoming computerised; and our data provide a basis for a critical assessment of computerisation in the same way as in a comparative drug trial.

How the system works

The manual system we use has an updated age-sex register held on cards with patient registration, immunisation, and cervical cytology details. The appointment and visit books give details of consultation rates, etc (including emergency consultations) and are used to provide data for the practice report and statistical review. A record of all visits, including out of hours and repeat visits, is kept by each doctor. The record envelope is the essential cog in the system: each patient's notes contain a coloured sticker for chronic diseases, which acts as the basis for our disease index. Inside the notes is a patient profile and summary-problem list on a separate card, and this is regularly reviewed. This is on an overprinted FP9A or FP9B card. To facilitate this we have separate self adhesive stickers on the back of the notes which indicate to receptionists and doctors at a glance whether the inside profile is up to date and whether the agreed preventive measures are due (see figure). The preventive tasks have been agreed and differ for each age group and also for sex in one age group.

Comparison with computerised practices

I have compared our measurable data with those given in response to a questionnaire by five similar practices in our area that have installed computers (see table). The comparison shows few differences in most

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Age Group — 0-16			
	1st	2nd	3rd
Polio, Dip, Tet.			
Perussis			
MMR			
Pre School Booster			
Rubella at ten years			
Tetanus every five years			

Age Group — 65 onwards			
Summary Sheet			
Alcohol			
Smoking			
Flu Vac			

Age Group — 36-65 Female			
Summary Sheet			
Alcohol			
Smoking			
Blood Pressure			
Weight			
Cervical Cytology			
Contraception until 50			
Tetanus			
Serum Cholesterol			

Age Group — 36-65 Male			
Summary Sheet			
Alcohol			
Smoking			
Blood Pressure			
Weight			
Tetanus			
Serum Cholesterol			

Examples of stickers showing preventive measures used in each age-sex group

Outcome	Our practice	Neighbouring practices
No of patients per doctor	1950	1616-2240
Records summarised (%)	99	90-100
Cervical cytology (target figures) (%)	88.4	80-86.5
Immunisations (target figures) (%)	96.4	90-96
No of staff per full time doctor	0.4	0.2-0.4 (average 0.27)
Receptionist-secretarial staff	1.1	1.0-2.05 (average 1.5)
Total employed staff	1.5	1.2-2.3
Capital costs per doctor (£)	100	0-£3500 (average £2600)
Yearly revenue costs (£)	50	500
Repeat prescriptions	Almost abolished	Computerised
Casual prescriptions (min/doctor/day)	5	Few—20 (average 15)
Ease of use	Totally user friendly, always available	Learning period, access may be difficult
Input of data	Not a separate function, continuous by many people	Needs someone designated to type in data
Retrieval	More difficult, requires separate search	Should be available at touch of a key
Correlation of data	Difficult, variables have to be correlated in separate sections	Easy if appropriate variables have been separately coded and recorded
Recall systems	Have to be on separate lists	Obtainable at touch of button
Illegibility	May be problems	No problems
Waste	No waste	Wastes paper
Space	Little extra space needed	May need other room as records still have to be stored

of the outcome factors between the practices. Major differences are seen in capital and running costs, and there are other differences in input and retrieval of data and perhaps in illegibility. Computerised practices seem to require an extra 0.4 staff member per doctor—a 36% increase in staff hours or two full time staff in a five doctor practice.

We believe we have shown that a well organised manual system is much cheaper to install and run than a computer system and requires fewer staff. Using a manual system has advantages in input because the medical record acts as its own database. Any further input from doctors, nurses, receptionists, etc increases that database provided the entries are legible. This can be accomplished at any time and in any place provided the records are structured.

Of course, computerised practices have advantages. These include easy and efficient recall systems and easy retrieval of data. Illegibility will not be a problem. Different functions may be correlated providing these are coded. There are also advantages for research projects, and if a repeat prescription system is used it will be efficient and will also provide details of prescribing habits.

The retrieval of data from a well run manual system is relatively easy but is much more time consuming. However, for the purposes of an average practice the time saved on input far outweighs the time lost on retrieving data. Our non-computerised practice employs more practice nurse time per doctor and fewer secretarial-reception staff than our neighbours—tending to confirm the widely held suspicion that computers in general practice require more staff.

Computerised practices find that a high priority for computers is to improve the repeat prescription system. Six years ago—as in most practices—our repeat system based on patient held cards was unsatisfactory. We made a radical decision to abolish repeat prescribing. The impetus for this was provided by our prescribing habits for the contraceptive pill (which all the partners prescribed in a similar way). At the consultation we would issue a prescription for a period and then review the patient before repeating the procedure. In this way the patient had enough pills until the next appointment, whether that was two, three, or six months ahead. We therefore decided to extend this principle to all our patients. We overcame problems of patients holding vast quantities of drugs (some of them

very expensive) and the loss to chemists of dispensing fees by using carbon copies of the prescription. These were postdated and held by the patient. The result was that patients did not have to keep returning to the surgery to pick up prescriptions.

Patient responses have exceeded expectations, and only very rarely have prescriptions been lost. As the doctor has to write the top copy out by hand he does have to think each time he prescribes drugs, and this helps the review of drugs. This method of prescribing has worked very well for seven years. We may see patients more often, but we now feel happy that we have patients under constant review.

Coping with the contract

The new demands of the contract have brought problems to all practices, but these can be met easily by our manual system. For example the requirement to invite patients if they have not been seen for three years takes eight hours of a clerk's time each year. In January each medical record has a slim card or slip of old x ray film inserted. These are different for each year. In 1990 pink card was used and in 1991 x ray film; 1992 will have one hole, and 1993 two holes. The marker sticks above the notes, and when that patient is seen by one of the doctors the slip is removed. At the end of the year only about 15% of notes still have a marker in them. The next year the process is repeated, and at the end of year three some 5-10% of records will have three different markers in them. These will be the people invited to attend a clinic or consultation. The change from coloured card to x ray film was made because old x ray film, which is free, is more resistant to bending than card. The over 75 age group, of whom there are 1000 in the practice, can easily be handled by our age-sex register.

With our manual system reception staff can check the notes for each surgery, and a big advantage of not having a repeat prescription system is that receptionists do not have to spend so much time dealing with prescription requests. This enables them to use their time more productively on tasks that may be of benefit for patients' health. It only takes them a moment to check on the box on the back of the notes to see that all preventive measures are up to date. If not, the required data are put on a sticker inside the notes and the doctor will then have this information in front of him at the consultation.

Case not proved

My assertion is that the case for computers in general practice has not been proved. Encouragement should be given to those practices that have no computer: they can be reassured that a well run manual system produces the same results, is more user friendly, requires fewer staff, and is considerably cheaper. Furthermore, trees will be saved: one of the features of computerisation is the reams of paper produced.

Finally, none of the foregoing takes into account the many hours spent by the enthusiastic computer doctor on his or her computer. This is time that might have been better spent in a medical activity—just spending time with patients or learning more specialised medical skills. No one in a practice with a manual scheme gets upset about the records, and there is no frustration when the computer “crashes.” If the computer were a new drug then it might not be licensed for general use as it has no demonstrable benefits or improvements over the existing manual system.