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## Posterity's Inheritance Mechanised?

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### Abstract

### Research Project

Practically anything written in medical journals at present concerning computers may quite safely be considered 'topical' or 'exciting' or 'relevant to the future'. The term 'computer revolution' is bandied about and we are told time and again that every practising doctor will have to acquire considerable knowledge of computers in order to make full use of their services.<sup>1</sup>

But in every ointment there is a fly. We must not get carried away in our enthusiasm to throw all our information at some unsuspecting programmer and say, "feed it in". The fear of being "dazzled by optimistic claims" has been lately expressed<sup>2</sup> but it is doubtful that much attention will be payed to it in this, the Poseidon nickel rash of medicine in the seventies.

There is great need for all medical people to fully realize the potential of this not too awesome omnivorous machine and to budget carefully and after considerable thought.<sup>3</sup> Medical records is a bit of a latecomer to this field, and only recently has money been placed at the disposal of experts to work this one out. It is often thought that medical records breed. They are certainly multiplying at a great rate and their retention and storage for indefinite periods of time pose great problems.<sup>4</sup>

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## POSTERITY'S INHERITANCE MECHANISED?

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Practically anything written in medical journals at present concerning computers may quite safely be considered 'topical' or 'exciting' or 'relevant to the future'. The term 'computer revolution' is bandied about and we are told time and again that every practising doctor will have to acquire considerable knowledge of computers in order to make full use of their services.<sup>1</sup>

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There is great need for all medical people to fully realize the potential of this not too awesome omnivorous machine and to budget carefully and after considerable thought.<sup>4</sup> Medical records is a bit of a latecomer to this field, and only recently has money been placed at the disposal of experts to work this one out. It is often thought that medical records breed. They are certainly multiplying at a great rate and their retention and storage for indefinite periods of time pose great problems.<sup>4</sup> Piles of bulky folders take up a considerable amount of space, and, in the wards, while leafing through mounds of paper for relevant documents, much valuable information might be overlooked. The problems of record computerization are legion<sup>5,6</sup> and some projects have already fallen foul of them.<sup>7</sup> There are many ways of approaching computerisation of records but all are costly and take some time to run smoothly.

Logical thought is an absolute prerequisite and some may consider this as an advantageous part of a young doctor's training for grappling with the problems of diagnosis, evaluation and treatment.<sup>8</sup>

The most possible, recent suggestion for practical use and not purely academic application comes from Glasgow, where it is suggested that records over six years old be destroyed and replaced by a concise synopsis or discharge letter, now legally acceptable.<sup>3</sup> This offends many who plead for their retention for future research or quote examples such as the patient who returned to hospital with a swab left behind twelve years earlier.<sup>9</sup> Evidently one per cent of the ten-year-old notes are used in any one year and a different one per cent will be used the next year presumably. Is this on its own surely not enough to justify retention? But this problem of space seems insuperable. Computers, it is suggested, may prove to be the only answer and the question now is exactly how is the 'software' — the form of data processing and programming for such a system to be organised. In addition it must be decided which medium is to be used for long term storage of information. Punch cards are very bulky when stored in numbers and paper tape is inconvenient for quick searching or for correction of mistakes, but both of these can be transcribed to magnetic tape for storage. This can be fed into the computer very quickly (approximately eight minutes to search the whole of a two thousand, four hundred foot reel of tape) and is the most convenient way of storing years of detailed information. One magnetic tape costs less than £30 and the

American Medical Association has full information as to the date of birth, medical education and qualifications, type of practice, American board affiliations, speciality society membership and much other pertinent information on each of its 318,000 United States physician members. This is all stored on a Systems 360/Mod 40 computer using five tapes.<sup>10</sup> With this number of tapes it is a fairly simple matter to keep the information up to date. In addition an extra copy of all the records can be kept elsewhere in case of damage to the master-tapes.

It is by no means a swift process to change from one system to another. Some small research studies have all the 'hardware' they need at close proximity but may take up to three years to begin their study after extensive systems analysis, charting information flow,

deciding on the nature of the terminals to be used and debugging (or removing errors) from programs. When all this has been done, a parallel operation of both the old and new systems would be advisable until the staff are fully educated and also to iron out the many problems which will eventually arise, evaluating and modifying continually taking place. All this, and more, offer a feasibility study has been done.

Thus it should be obvious that the wheels of the computer revolution turn rather slowly, and must be continuously coated with an expensive oil. The day is not far off when medical students will, with physics, chemistry and biology, be entering their University career to a study of if not computer programming, then certainly some forms of information handling.

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