

# Re-engineering clinical records for production control

ERNEST CODMAN

Ernest Codman is a medical manager at EAC Hospital, Boston, United States of America and President of the Congress of Surgeons.

The science of medicine, however sophisticated it may now be, is always in an experimental stage. We are all in the business of continuous quality improvement.

In every experimental science, records are made of each trial, giving all necessary details, and especially noting the result. Singularly enough, in these human experiments which we constantly perform in our hospitals, it is not usual to make special effort to see that the results are systematically recorded, even though the diagnostic and procedural details may be routinely stored to serve some financial or statistical purpose.

Curiously enough, the general public seldom expresses concern about a lack of systematisation that it expects of other industries. This may be fortunate, since we would often find ourselves poorly positioned to defend ourselves. Anyway, the more conservative clinicians are likely to argue that the science of medicine is still too imperfect to permit us to trust the public with the truth about the results or the complications incident to treatment.

There has been a habit in the medical profession that even now is so justified by custom and usage that it is next to a moral law, and which I will call poetic license. No matter what they have preached in their lectures or written about scientific accuracy, all professors of medicine or surgery have by example taught students that, in actual practice, it may be right to conceal from the patient the truth about the case. In a way, the public has forced this habit upon us. How often the husband or wife come to us separately, and each tell us to conceal from the other the fact that cancer is present in the one or the other! The victim tells us that the spouse cannot bear to know the fact, and the spouse begs us to conceal the truth from the victim.

I could carry illustrations of this habit of poetic license much further, but it is sufficient for us all, clinicians and non-clinicians, to confess its existence. Clinical teachers make free use of it, and their students go into practice - and make free use of it.

The question is, has the time come when we can face the facts in a truly scientific manner? Can we let others look at the results of our experiments? The wise but conservative senior consultant will tell you that it is not yet time, but the modern surgeon who can demonstrate success in perhaps 95 per cent of his experiments is becoming ready to let the public be acquainted with the facts. Unfortunately, even now, many doctors are simply not prepared to apply the same rigour to measuring and reporting findings of clinical practice that they have long applied to laboratory practice.

If, however, we put considerations of human nature aside, we can take it for granted that in an experimental science it is important to make records of our experiments and especially their results. The truth should be recorded even if expediency keeps the records under lock and key.

Medical records, or discharge summaries if you like, are made for three purposes. The first is in support of clinical and epidemiological research and evaluation.

The second directly supports the care of individual patients. I am continually surprised at the ability of sophisticated hospitals to misplace important information relating to previous care, but no-one nowadays debates the need.

The third use of records is medicolegal purposes. The law is becoming increasingly demanding, and the tendency towards litigation is evident in most countries.

It needs no argument to show that records should be made for these three purposes. In most hospitals there are some such records, however inaccurate and inadequate they may be. I wish to suggest a fourth use for case records - as data to form a basis for study to increase the efficiency of the hospital.

It is a singular fact that this idea is a relatively new one. Clinicians generally do the best they can for their patients but each member of the staff, being in a glass house, has not cared to inquire into the efficiency of other members of the staff. And lay managers have tended to claim they have enough to do, without getting into hot water by inquiring into the results obtained by the doctors. In fact, we must confess that it has been the duty of no person or department in most hospitals to inquire into the efficiency of treatment. The vague reputations which members of the staff earn in the hospital and in the community has been the only criterion. And in the making of these reputations personality dominates efficiency.

My own interest in hospital information systems is largely with regard to their potential to increase efficiency. I believe a simple model is sufficient, and perhaps the only difficulty with it is its revolutionary simplicity. It requires straightforward, truthful answers to these questions: what were the diagnoses and treatments, what was the outcome, and if the outcome was poor, what was the reason? The reasons need to be categorised, but this is not difficult to do. An elementary categorisation by clinical error, patient, hospital, or external factors would be fine.

Perhaps the main reason why we do not have such a system is because it would assign responsibilities. This is a pre-requisite for improvement, but it is greatly feared by many.

Medicine is surely enough of a science to enable us to use the great principle of comparison as in other sciences. Records we must have, clear, honest records, no matter how brief, if they fearlessly face the facts. If we do this, our records will be of more scientific value than at present.

They will also cover the practical uses and the medicolegal ones. So far as the medicolegal uses go, this type of record will perhaps be of more value in the execution of justice in general than to each hospital in particular. At present the community allows hospitals to evade medicolegal complications, but the time is coming when the hospital must take more responsibility and be able to show that it is at least recording and analysing the results of its experiments. The absence of a system to fix the responsibility for each experiment should be more culpable in the sight of the law than the failure of the experimenter to perform a carefully conducted experiment successfully.

In hospital organisation, we may profit by using some of the long-established ideas of engineering. The sixth of the twelve principles of efficiency demands the existence of reliable, immediate, adequate, and permanent records. "Reliable" includes the ideas of being accurate, honest, authoritative and complete. "Immediate" means available to those interested; practically indexed by conditions and treatments; clear; brief or abstracted; and easy to handle and to study.

"Adequate" means being purposeful, for instance, quite different in a teaching hospital from those in a hospital in a mining camp, but accurate and fearless in both.

"Permanent" means too valuable to lose; it also refers to the materials used in the making and to the importance of keeping the completed volumes under lock and key (recognising human carelessness). Nevertheless, being permanent does not refer to perpetuating old faults. Harrington Emerson says that it has not been unusual to find in the records of an enterprise "... a great variety of routine statistical reports, and when inquiry is made it is finally unravelled that twenty years before, some CEO wanted a certain set of records, and his successor wanted a different set, which was started in parallel, that a third and fourth incumbent added their requests, but the old statistical bulletins continue to be produced and administrative staff work their monotonous lives away in neat compilation that no one has looked at, much less used, for a decade."

In the special subject of hospital records, the efficiency experts would need one more important adjective and that is "educational." Perhaps they include it under "permanent." The young doctor must necessarily get his or her training in a hospital, and one important element in training is the writing of records. I have no fault to find with our attempt to make this combination of scientific records and opportunity to learn by experience, except to say that, today, in most hospitals I fear that the records are often left entirely to the students and are not even signed by those actually responsible for the treatment and its results. In my opinion the member of

the staff responsible for the treatment should at least clear the record before it is filed. A staff that is too busy to do this needs more help, and should not be allowed to corner the material of that hospital. The permanency of hospital records, if signed, would be an incentive for accuracy and efficiency for all concerned.

I would be happy to share the experiences at our hospital, where we are now able routinely to analyse clinical errors and waste of resources - and do so openly, in order to prevent similar mistakes in the future.

This approach will inevitably lead to publicity, and as is usual in publicity given to important matters of vital interest to the people, it brings up the questions of special privileges, vested interests, economic advantages, educational concessions, and the almighty dollar. Herein lie not only the reasons why this is important and necessary, but also the reasons why some clinicians accept the idea in public and fight it in private.

*Editor's comment: the manuscript for this paper was delayed in the mail, and readers should be aware that the larger article on which this is based was published in the Bulletin of the American College of Surgeons, vol 3 no 1, on 19 October 1917. Comments addressed to the author need to be on a higher plane.*