A Computer Summary for General Practice Medical Records: MEDSUM

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M edical records may serve many purposes. These purposes include management information for day-to-day patient care, maintenance of a database summary to enhance continuity of care, reference material to aid later recall (eg, for legal reports), and research. Unless the record is very carefully structured, it may be difficult to gain access to the information it contains, thus hindering its use for any purpose.

There is little information about the ways in which medical records are used in medical practice or the relative importance of the various uses to which they are put. The management function traditionally receives more emphasis than the summary; omission of data is deplored, yet excessive information is often never used and frequently obscures important major points.

These issues have been highlighted during the development of MEDSUM, a computer medical record summary for general practice.[1] MEDSUM is designed to complement rather than replace the full written record. It has been developed because of an intuitive feeling that the summary function of medical records in general practice is more important than the management function and that computerization of medical records is so complex that it ought to be approached in stages.

There are also practical advantages to a stepwise approach. While computer technology can deal with very large amounts of complex data and manipulate it extensively, in the foreseeable future most physicians will be able to afford and cope with only the simplest system to achieve only the most desirable ends.

OBJECTIVES

The MEDSUM project was designed to do the following:

1. Improve patient care by maintaining an accurate, up-to-date, easily accessible, and reproducible medical record summary
2. Improve prevention by systematizing patient follow-up
3. Provide a mechanism for review and audit of administrative and clinical aspects of practice
4. Provide data for clinical and epidemiological research

Patient care is enhanced by maintenance of an accurate but succinct medical record summary together with whatever further detail is needed, and practice administration and research is aided by easy indexing and sorting on a variety of parameters.

METHODS

MEDSUM contains a database of the minimum information needed for continuing patient care, and no more, so that easy access to the most essential information is maintained. This information, which includes demographic information, social and family history, immunization status, allergies and adverse effects, past medical history, and current medical problems with their current managements, is stored in the computer and also printed out for inclusion in the full written medical record, which it complements but does not replace. Other parts of the medical record supplement MEDSUM information by providing further detail when needed.

Computerization of the summary achieves the objectives through allowing updating by deletion and alteration as easily as by addition and making available indexing and sorting using any one of a number of parameters.

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MEDICAL RECORD SUMMARY

Doctor: PB   Record No. 9999/1

First seen	21/6/80	Date of Birth	5/2/42	Surname	Demonstration
Updated	24/9/83	Sex	Female	Given names	First
		Marital	Single	Address	1/12 Any St.
		Country of Birth	Australia		Anywhere

Blood Group
Religion   Church of
                        England
Occupation   Manageress   Phone: Home 2345677
Employment/school   ABC Company   Work 2345678

                                                        Health Fund
Follow-up   Medicare
Date 3/84   Problem   BP   PMS
Date 9/84   Problem   Goiter   Repeat

SOCIAL AND FAMILY HISTORY

Smokes nil
Alcohol occasional at social functions
Lives alone

PAST HISTORY			IMMUNIZATIONS		ALLERGIES AND ADVERSE EFFECTS			
Yr	Code	Past resolved problems	Yr	Type	Date	Substance	Reaction
58	017	Infectious mononucleosis	?	Diphtheria	6/78	Ampicillin	Rash
72	190	Menorrhagia	80	Tetanus			
		Hysterectomy	?	Pertussis			
			+	Polio			
				Measles			
				Rubella			
				Mumps			
			1	Cholera			
			1	Typhoid			
				Influenza			

CURRENT PROBLEMS				CURRENT MANAGEMENTS			
Date	No.	Code	Problem list	Date	Code	Management	Detail
74	1	90	Migraine	6/80	N143	Panadol w/codeine	2 prn
				4/83	C801	Pindolol	1 tds
10/81	2	92	Conjunctivitis recurrent	10/82	E106	Sulfacetamide—eye	3 qid
1/82	3	55	Obesity	1/82	237	Nutrition counseling	
9/82	4	166	Cholelithiasis	11/82	143	Refer: surgeon	
9/84	5	47	Goiter (right side)				

Figure 1. Example of medical record summary form

Data Recording

Information is written onto a medical record summary form by the physician; from this form, the data are typed into the computer by a secretary (or the physician may interact directly with the computer). A printed copy is produced, which is filed with the patient's medical record (Figure 1). After each consultation (or at longer intervals), alterations and amendments (if any) are entered into the computer and an updated printed summary is produced.

Coding

The system allows all data to be entered in written form, and coding is not essential. There are, however, advantages in coding some of the data:

1. Data entry is quicker, since several digits may represent several words.

2. Storage space in the computer is reduced.

3. Standard classifications are built into the system so that data reporting for audit or research purposes is widely comparable with information from other

sources.

Country of birth, occupation, and religion are classified using a simplification of the Australian Bureau of Statistics classifications. The International Classification of Health Problems in Primary Care[2] is used for coding diseases and problems, with a modified numbering system to allow various levels of specificity. Management is classified using the International Classification of Primary Care: Process (ICPC-Process) being developed by the North American Primary Care Research Group (NAPCRG) and the International Classification Committee of the World Organization of National Colleges, Academies and Academic Institutions of General Practitioners/Family Physicians (WONCA).

Although coding of information is not essential for maintaining the medical record summary, only coded information is indexed and available for tabulations. Coding can be done at various levels, using the appropriate classification hierarchically, in either a very simple, basic form or in considerable detail.[3] When code numbers are entered, the standard description automatically appears. This description can be accepted, or overwritten with greater specificity. For example, in Figure 1 the standard description of the second current problem, code 92, is "conjunctivitis," but in this case "recurrent" has been added.

Patient Care

While much of the record is standard, there is scope for individual practices to develop their own conventions about some aspects of recording and coding such as criteria for distinguishing between current and past problems and use of abbreviations.

In the example (Figure 1), the patient's demographic information is in a standard format. The spaces for health fund, medicare, and other numbers relate to Australian conditions. Two spaces are available to record follow-up dates and conditions, allowing preparation of monthly lists of patients due for recall. The social and family history section provides for six lines of free text, which also allows recording of other unstructured information and explanation. In the case presented in Figure 1, the patient completed a full course of tetanus immunization in 1980 (two digits for year), has been immunized against polio (date uncertain), is not sure about immunization for pertussis, and has had the first injection for cholera and typhoid (one digit only indicates number of injections). She has five current problems, the first of which (migraine) is being managed with two medications, and the last of which (goiter) has no current management.

It is important to note that the record includes only the current status of the patient and does not include information about past changes in the extent or activity of problems or changes in management.

Audit and Research

An enquiry function of the program (MEDENQ) allows a wide range of information to be obtained about the patients on file. For each enquiry there are three matters to be decided:

1. The type of information required
2. The variables to be included
3. The patients to be included

Three kinds of information can be produced: frequency distributions, two- or three-variable tabulations, or lists. A frequency distribution is a special case of tabulation in which only one variable is selected. The tabulation option gives a two- or three-dimensional table of patient data, depending on whether two or three variables are chosen for the tabulation. The user can specify the order in which the variables are printed. For example, one could determine the number of patients in the practice by age and sex using this option. The list option allows a formatted report on a maximum of ten variables for the selected patients. The details for each patient are aligned in column form and printed on a single line. Together, these three methods provide a database management capability for searching all the records entered into the system.

It is not necessary always to include all patients in any given search. Selection criteria can be nominated so that only certain patients are included in the enquiry, for example: men, or Australian-born patients aged over 65 years, or patients with hypertension on beta-blockers.

COMMENT

There is little evidence to support the intuitive ideas about the relative importance of the medical record summary that underlie this development. A further important aim is to use the system to analyze some aspects of the record-keeping process.

The summary has not been developed to the stage at which regular use has commenced. An evaluation has been initiated to determine the following:

1. The feasibility of the project in terms of time and effort to maintain it and the cost

2. The extent to which it is used in patient care: the frequency and extent of updating required, frequency of use for referral purposes, frequency of use as a patient-held health record, frequency of use to develop at-risk registers for follow-up, frequency of use as an aide-memoire for preventive medicine

3. The extent to which the new system results in a more complete and comprehensive summary than is available in the present written records

4. The most useful standard tabulations for audit and research, particularly in terms of formats that will

be comparable with similar information from other sources such as general practice and hospital morbidity studies or Australian Bureau of Statistics health surveys.

CONCLUSIONS

A computer medical record summary (MEDSUM) has been developed because of an intuitive feeling that the summary database function is the most important aspect of medical records for general practice and that computerization of medical records is so complex that it ought to be developed in stages. Evaluation of MEDSUM is an essential part of its further use and development.

References

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2. WONCA Classification Committee: ICHPPC-2-Defined. International Classification of Health Problems in Primary Care, ed 3. Oxford, Oxford University Press, 1983
3. Bridges-Webb C: Codes and classifications in general practice computing. Pract Computing 1984; 1:16-17