Documentation of Family Health History in the Outpatient Medical Record

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In a university-based family practice residency program, patients' computerized medical records were audited to determine how information about family health history was recorded. Family history items were listed on the problem lists for only 4.4 percent of all active patients and for only 2.7 percent of a systematic sample of 375 patients. A manual audit of 75 charts randomly selected from the systematic sample showed that the problem lists contained only 5.8 percent of the family history items reported by patients. Children's problem lists contained fewer family history items than did those of adults.

When seeing patients, family physicians usually focus on the individual, with variable consideration given to the family context.[1-13] One major facet of the family context is the family health history. Leaders in family practice have held family health history to be a fundamental part of comprehensive health care.[14,15]

Numerous common health problems occur in a familial pattern. First-degree relatives (parents and children) of patients with duodenal ulcer have a threefold increased incidence of duodenal ulcer.[16] Other problems showing an increased familial incidence include early-onset ischemic heart disease,[17] panic disorder,[18] schizophrenia,[19] diabetes,[20,21] and alcoholism,[22] among others.

The clinical significance of family history is often difficult to assess because of insufficient data about the significance of particular patterns of family history. Studies have shown that a woman who has two sisters or a mother and sister with bilateral premenopausal breast cancer has an approximately 50 percent lifetime probability of developing breast cancer herself.[23] In contrast, family history of unilateral postmenopausal breast cancer seems to imply little or no increased risk from that of the average woman (about 10 to 15 percent lifetime probability). If specific information is not known about the implications of having a family history of a particular condition, the physician may choose to give the patient a vague and questionably accurate estimate of risk, admit scientific ignorance about the patient's situation, or avoid dealing with the information unless the patient asks about it. For most health problems accurate information about the prognostic significance of family history is not available.

Familial health problems are presumably transmitted through various combinations of genetic and environmental influences. For type 1, youth-onset diabetes, environmental factors may play a more prominent role, as the concordance in identical twins is only 50 percent. In contrast, the concordance of over 90 percent for identical twins with type 2, maturity-onset diabetes,[21] indicates that genetic factors, including a predisposition to obesity, may be more influential in type 2 than in

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type 1 diabetes. Nevertheless, related environmental factors, such as caloric intake and physical activity, seem to be key modifiable factors in the development of type 2 diabetes. Cigarette smoking contributes to the development of numerous serious health problems. Health care providers may help susceptible individuals reduce their risk of developing familial problems by systematically encouraging the modification of pertinent environmental and life-style factors.

Despite the widespread stated belief in its importance,[14,15,24-27] the authors found no studies in the literature describing the way physicians record family health history for ambulatory patients. Only a few textbooks offer any guidance on this matter.[27-29] A text on the problem-oriented medical record (POMR) advocates inclusion on the problem list of "all problems for which the patient is at risk because of genetic, environmental, or behavioral susceptibility."[30] Indiscriminate use of this approach would, however, result in lengthy permanent problem lists for some patients. If problem lists are too long, physicians cannot scan them easily, and the problem list thus loses much of its usefulness.

Putting selected family history items on the problem list can serve the following functions:

1. Increase the physician's index of suspicion about particular diagnoses
2. Encourage sustained efforts by physicians and other health personnel to educate patients about making recommended changes in lifestyle or health habits
3. Modify therapeutic efforts according to the physician's estimate of the potential benefit of treatment compared with its costs and risks
4. Identify sources of anxiety and the need for specific reassurance for the individual with a worrisome family history
5. Avoid eliciting the same information from patients repetitively during future visits (especially sensitive information that the patient may think the physician should remember)

Table 1 shows clinical examples for each function.

Family history information is usually recorded on standardized forms that are placed near the back of the medical record. In this location the information is not readily available for routine scrutiny during patient visits and thus tends to be forgotten. The permanent problem list of the POMR is a logical area for documenting significant family history. Its high visibility in this location would allow it to be used easily for the purposes outlined above, especially if the physician routinely reviewed the problem list just prior to seeing each patient.

This study was done to describe how family history was recorded in the medical records of outpatients in a family practice residency program, with special attention to the recording of family history on the problem list.

METHODS

This study was done in a large university-based family practice residency program, which has used a computerized medical record system since shortly after its inception in 1969.[31] Progress notes and problem list entries are dictated by the provider for each visit, then routinely entered into the computerized record. Thus virtually all problem list items are included in this system and displayed on an updated printout placed in the chart after each visit. This data system facilitates the conduct of chart audits for patient care or research purposes.

The importance of well-kept medical records has been consistently stressed in this residency. Each year during orientation sessions on medical record keeping, faculty members have encouraged residents to identify and record family history items on the permanent problem list to facilitate their taking care of patients in a family-oriented manner. The completeness of documentation of visits, including coded problem list entries, has been monitored regularly and maintained at a high level.

When the *International Classification of Health Problems in Primary Care* (ICHPPC)[32] coding system was adopted by the residency in 1974, a local supplementary classification was developed, similar to the family history codes in the *International Classification of Diseases, 9th Revision, Clinical Modification* (ICD-9-CM).[33] Supplementary codes were needed because of the absence of family history codes in ICHPPC. Family history codes were defined for 25 relatively specific familial condi-

TABLE 1. CLINICAL USES OF FAMILY HISTORY ITEMS ON THE PERMANENT PROBLEM LIST

Function	Patient Problem	Family History
Increase diagnostic index of suspicion	Dyspepsia	Peptic ulcer disease
	Marital problem	Alcoholism
Encourage sustained patient education	Obesity	Diabetes
	Infant feeding problem	Child abuse
Modify therapeutic efforts	Mild hypertension	Early coronary heart disease
	Depression	Suicide
Identify sources of anxiety	Rectal bleeding	Colon cancer
	Anxiety reaction	Psychosis
Avoid redundant questioning	Orgasmic dysfunction	Incest
	Overconcern about child	Sudden infant death syndrome

tions, and one miscellaneous code was included. The most recent ICHPPC revision, *ICHPPC-2-Defined,* contains only one code for all items relating to medical observation of another family member at risk, including family history of any condition.[34]

In this study two groups of medical records were selected and audited. First, a computerized search of the patient records in the Family Practice Center identified all active patients having any family history item on their problem lists (group 1, n = 375). A second group of patient records was identified by cyclically selecting every 100th patient identification number until a sample of active patients was generated (group 2) that was the same size as the first group. The computerized problem lists of patients in both groups were audited for family history items.

The age, sex, or race of the patient could conceivably influence the likelihood of the physician's recording family history on the problem list. If the recording of family history items on the problem list did not vary according to demographic characteristics, the distribution by age, sex, and race should have been the same for group 1 patients as for the general patient population. Using the known demographic percentages for the practice, expected numbers were calculated for the sample and compared with the observed numbers.

Further, to compare the family history information on problem lists with other sources of family history data in the medical record, a random 20 percent subsample of 75 active patients was identified from each group (150 patients total) for detailed manual auditing of the record. Other sources of family history information in the record included a health questionnaire completed by the patient and a history worksheet form that the physicians filled out for some patients; both of these forms had designated areas for family history.

No attempt was made to differentiate between the record-keeping practices of residents and faculty physicians. The average complement of 40 to 45 residents saw many more patients, however, than did the 6 to 8 clinical faculty members who were active in patient care, so that the findings mainly describe how residents in this program recorded family history information.

The data were analyzed for statistical significance by chi-square and the Z test of difference for proportions.

RESULTS

Only 375 patients in the entire practice (4.4 percent of the 8,578 total active patients) and 2.7 percent of the group 2 systematic sample (10/375) had any family history items on the computerized problem list. Significantly fewer children younger than 15 years old and more young white adults than expected had family history items recorded on the problem list.

For both groups of patients, the detailed audit of the medical records revealed more family information on the questionnaires completed by patients than on the physician worksheets, which, in turn, contained more family information than did the problem lists. The largest difference in family information was between the problem lists of the systematic sample (group 2) and their patient questionnaires and physician worksheets; only 5.8 percent (6/104) of the family history items reported by patients were recorded on the problem list. Compared with the 58 percent rate of problem listing (115/199) for group 1 patients, there was a tenfold difference between problem listing for the purposively selected group and the group more representative of the general patient population.

The family history items most commonly recorded on the problem list were (in decreasing frequency) diabetes, heart disease, high blood pressure, and cancer; for these items combined, the ratio of problem-listed family histories to patient-reported family histories was 0.69 (82/119) for group 1 and 0.10 (6/59) for group 2. Several serious familial conditions were seldom included on the problem list. For mental illness, peptic ulcer disease, alcoholism, and emphysema, the combined ratio of problem-listed to patient-reported items was 0.14 (5/35) for group 1 and 0.00 (0/25) for group 2.

DISCUSSION

The patient records in group 1 were selected on the basis of their having family history items on the problem list. In this group there was also a relatively larger amount of family history information in all three chart locations—patient questionnaire, physician worksheet, and problem list. The authors believe that the record keeping for this small proportion of patients reflects an appropriate level of awareness of the potential clinical importance of family history information.

In contrast, the record keeping for the patients in the group 2 systematic sample should be fairly representative of the general way family history was documented in this practice. Far less information about family history was recorded on the problem list than elsewhere in the record. Some of this difference may be attributed to the physicians' consciously filtering information for clinical relevance. The findings also seem to reflect, however, widespread disregard by the physicians for this category of data.

Patients reported much apparently significant information that was not recorded on the problem list; for example, the occurrence of hypertension or heart disease in a sibling or parent was often noted on the physician worksheet, but not entered on the problem list. Family history of alcoholism, emphysema, mental illness, or peptic ulcer disease was seldom recorded on either the physician worksheet or the problem list.

For many health problems evaluating the significance of family history data is hampered by the lack of data on the clinical implications of the information. The age of onset of the problem in the relative, the closeness of the relation to the patient, and the perceived seriousness of the problem probably influence the physician's estimate of risk most strongly.

The data from the audit of the subsample of group 1 records suggest that diabetes was considered to be the most noteworthy familial condition, as it was the only item that was recorded with similar frequency on the patient questionnaire, the physician worksheet, and the problem list. Diabetes appeared on the problem list disproportionately often compared with its relative incidence in the patient population. The greater attention to family history of diabetes may be partly due to the physicians' perception of the severity and treatability of diabetes as well as the potential for preventing type 2 diabetes by counseling patients about weight control.

The problem lists of children included less information about family history than did those of adults. Their parents usually were not old enough to have developed many of the common problems for which family history was recorded. The health history of grandparents is often relatively sketchy and may be considered by physicians to be less

relevant than that of the parents. Most of the children were cared for by residents, who did not expect to continue as their primary physician for more than two to three years. Children are distant in time from the period of maximal risk for overt expression of familial problems. Physicians may not ascribe significance to family history when the risk seems so temporally remote.

It may be possible to prevent or delay the onset of some problems (hypertension, for example) by effecting appropriate lifestyle changes, such as a low sodium diet early in the life of individuals at increased risk due to their family history.[35,36] If the physician believes in the potential of such interventions, careful attention to the family history of children is then called for. Having family history items on the problem list could remind the physician to make sustained efforts to educate patients and parents about the implications of familial problems.

Young white adults may have had more family history documented partly because their parents were in the peak age range for the development of many of the conditions and partly because of their own relative closeness to the usual age of problem emergence.

The findings for the group 2 patient records are probably fairly representative of family physician behavior in university-based family practice residency programs in the United States. Although the study design does not support generalization of the findings to private or community practice settings, it seems reasonable to think that the recording of family history in this patient population was at least as complete as in most other family practice settings.

The inclusion of serious familial problems on patients' problem lists might promote the attainment of the family physician's goal of comprehensive health care with a strong preventive orientation. The authors believe that the routine recording of information about the family health history on the permanent problem list could be very useful clinically, especially for those families the family physician cares for over a long period of time. To the authors' knowledge, however, no evidence is available to support or disprove this belief.

Many family physicians will probably need to see substantial data on the value of recording family history items on the problem list before they will consider changing the way they now handle family history data. Longitudinal research designs should be used to test the usefulness of this approach. Cross-sectional studies of family history involve a family information bias that is difficult to control.[37] The clinical utility of well-documented family histories would emerge slowly over a period of years in a practice panel.

Careful collection and updating of family health information in long-term studies of large, relatively stable patient populations could answer the following pertinent questions: What conditions, in which relatives, at what ages of onset, indicate significant health risk and are worthy of inclusion on the problem list? Does this documentation lead to improvement in the process and outcomes of patient care, and if so, how? Meanwhile, teachers of family medicine may wish to consider how well their own recording of family history information constitutes a desirable role model for family physicians in training.

References

1. Marinker M: The family in medicine. Proc Roy Soc Med 1976; 69:115-124
2. Geyman JP: The family as the object of care in family practice. J Fam Pract 1977; 5:571-575
3. Shahady EJ, Cassata DM, Cogswell BE: The family in family practice. Fam Med Teacher 1980; 12:4, 5, 24
4. Bartholomew L, Schneiderman LJ: Attitudes of patients toward family care in a family practice group. J Fam Pract 1982; 15:477-481
5. Schwenk TL, Hughes CC: The family as patient in family medicine: Rhetoric or reality? Soc Sci Med 1983; 17:1-16
6. Carmichael LP: Forty families—A search for the family in family medicine. Fam Syst Med 1983; 1(1):12-16
7. Ransom DC: On why it is useful to say that "the family is a unit of care" in family medicine. Fam Syst Med 1983; 1(2):17-22
8. Beavers WR: Hierachical issues in a systems approach to illness and health. Fam Syst Med 1983; 1(1):47-55
9. McDaniel SH, Amos S: The risk of change: Teaching the family as the unit of medical care. Fam Syst Med 1983; 1(3):25-30
10. Williamson P, McCormick T, Taylor T: Who is the patient? A family case study of a recurrent dilemma in family practice. J Fam Pract 1983; 17:1039-1043
11. Brody H: Ethics in family medicine: Patient autonomy and the family unit. J Fam Pract 1983; 17:973-975
12. Merkel WT: The family and family medicine: Should this marriage be saved? J Fam Pract 1983; 17:857-862
13. Christianson CE: Making the family the unit of care: What does it mean? Fam Med 1983; 15:207-209
14. Carter CO: Genetics. In Smith R, Fry J, Gambrill E (eds): Scientific Foundations of Family Medicine, New York, William Heinemann Medical Books, 1978, p 54
15. Rakel RE: The family pedigree. In Rakel RE (ed): Textbook of Family Practice, ed 3. Philadelphia, WB Saunders, 1984, p 1400

16. Evans DAP: Genetic factors in the etiology of duodenal ulcer. Gastroenterol 1961; 40:371-378
17. Oscherwitz M, Krasnoff SO, Moretti L, Syme L: The relationship of myocardial infarction to parental mortality and longevity. J Chronic Dis 1968; 21:341-348
18. Crowe RR, Pauls DL, Slymen DJ, Noyes R: A family study of anxiety neurosis. Arch Gen Psychiatry 1980; 37:77-79
19. Schulsinger H: A ten-year followup of children of schizophrenic mothers: Clinical assessment. Acta Psychiatr Scand 1976; 53:371-386
20. Simpson NE: Diabetes in the families of diabetics. Can Med Assoc J 1968; 98:427-432
21. Tattersall RB, Pyke DA: Diabetes in identical twins. Lancet 1972; 2:1120-1125
22. Goodwin D: Is Alcoholism Hereditary? New York, Oxford University Press, 1976
23. Kelly PT: Breast cancer in the family: Not always risky. Med World News, June 23, 1980, pp 41, 43
24. Petersdorf RG, Adams RD, Braunwald E, et al (eds): Harrison's Principles of Internal Medicine, ed 10. New York, McGraw-Hill, 1983, p 2
25. McKusick VA: Mendelian disorders. In Harvey AM, Johns RJ, McKusick VA, et al (eds): The Principles and Practice of Medicine, ed 20. New York, Appleton-Century-Crofts, 1980, p 439
26. Wyngaarden JB: Human heredity. In Wyngaarden JB, Smith LH (eds): Cecil Textbook of Medicine, ed 16. Philadelphia, WB Saunders, 1982, p 1
27. Stevenson I: The Diagnostic Interview, ed 2. New York, Harper & Row, 1971, pp 75-87, 149-156
28. Hillman RS, Goodell BW, Grundy SM, et al: Clinical Skills: Interviewing, History Taking, and Physical Diagnosis. New York, McGraw-Hill, 1981, p 36
29. Raus EE, Raus MM: Manual of History Taking, Physical Examination and Record Keeping. Philadelphia, JB Lippincott, 1974
30. Walker HK, Hurst WJ, Woody M: Applying the Problem-Oriented System. New York, Medcom Press, 1973, p 53
31. Braunstein M: The computer-based medical record in family practice. In Medalie J (ed): Family Medicine—Principles and Applications. Baltimore, Williams & Wilkins, 1978, p 281
32. International Classification of Health Problems in Primary Care. Report of the Classification Committee of the World Organization of National Colleges, Academies and Academic Associations of General Practitioners/ Family Physicians. Chicago, American Hospital Association, 1975.
33. International Classification of Diseases, 9th Revision, Clinical Modification. Report of the Commission on Professional and Hospital Activities. Ann Arbor, Mich, Edwards Brothers, 1978
34. ICHPPC-2-Defined (International Classification of Health Problems in Primary Care), ed 3. Prepared by the Classification Committee of WONCA in Collaboration with the World Health Organization. New York, Oxford University Press, 1983
35. Hofman A, Hazebroek A, Valkenburg HA: A randomized trial of sodium intake and blood pressure in newborn infants. JAMA 1983; 250:370-373
36. Blackburn H, Prineas R: Diet and hypertension: Anthropology, epidemiology, and public health implications. Prog Biochem Pharmacol 1983; 19:31-79
37. Sackett DL: Bias in analytic research. J Chronic Dis 1979; 32:51-60