An Integrated Medical Record and Data System for Primary Care Part 4: Family Information

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The gathering of family information has numerous advantages in a family practice setting. Methods are described which not only allow description of family structure but permit identification of each individual family member and his/her relationship to the family as a unit. The value of filing individual medical records in family folders is detailed. A functional definition of family is established and certain health-related characteristics are given. Included is comparison of family size and socioeconomic status (SES) of a family practice with census information on the total county population. Health-seeking behavior of two-person families (couples or single-parent plus child) related to SES is presented as one of many applications of recorded family information. Potential for future research into the effects of family structure on morbidity is discussed.

The American Academy of Family Physicians defines the family physician in terms of his/her education, training, and service. Included in a recent report is the statement, " . . . the family physician is educated and trained to develop and bring to bear in practice unique attitudes and skills which qualify him or her to provide continuing comprehensive health maintenance and medical care to the entire *family** regardless of sex, age or type of problem be it biological, behavioral or social."[1] Omitted however from this comprehensive statement is any definition of family. The practicing family physician may not need such definition; he/she can remain sensitive to the variety of interpersonal and genetic relationships that may contribute to disease or discomfort and incorporate changes in family dynamics into the schema of diagnosis and therapy without regard to rigid constructs. Precise definition, on the other hand, is required by the physician who seeks a conceptual basis for his/her discipline and the researcher involved in elucidating the complexities of family interactions.

The disciplines of sociology, demography, anthropology, economics, and psychiatry have made significant strides toward understanding the family as a functioning unit. Contributions of family medicine have, to date, been modest, but skills and resources within the field are rapidly increasing. Family orientation in the delivery of health care provides unique access to numerous, previously obscure aspects of family function. Careful and complete recording of family information allows research into such areas as family health-care behavior, the relationships of family size and structure to morbidity, and morbidity patterns within the family. Crucial to such research, however, are precise definitions and establishment of versatile information systems. Described in this report is a family information system of use to both the practicing and academic physician for purposes of practice management, teaching, and research. Definitions of the family as a functioning unit and the structure of that unit will be considered prior to specific description of recording methods and presentation of representative data derived from these sources.

Definitions

A functionally agreeable definition of the family is possible only within the construct of its ultimate use. To the sociologist it may be that group of persons who are mutually interdependent financially and emotionally. To the medical geneticist it may be blood-related individuals without regard to their current living situation or physical proximity. To the family physician all close relationships are important and it is necessary to note the unique quality of each such relationship. He/she is concerned not only with the emotional and medical impact of persons composing a family but with the genetic makeup of the

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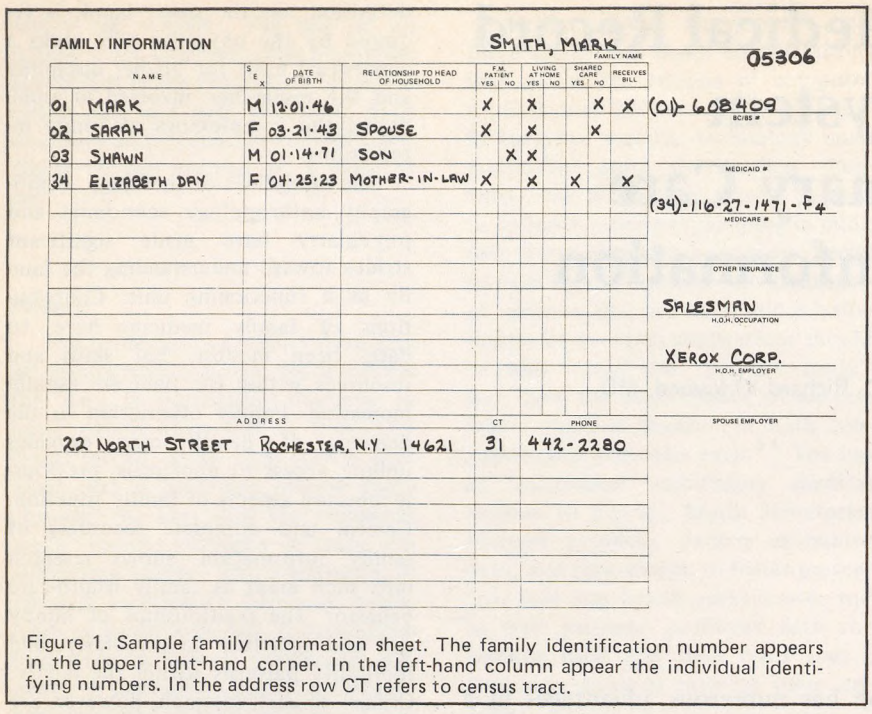
*Authors' italics. Quotation is the official definition of 'Primary Care' as adopted by the Board of Directors of the American Academy of Family Physicians.



FAMILY INFORMATION

SMITH, MARK
FAMILY NAME

05306

	NAME	SEX	DATE OF BIRTH	RELATIONSHIP TO HEAD OF HOUSEHOLD	F.M. PATIENT YES	F.M. PATIENT NO	LIVING AT HOME YES	LIVING AT HOME NO	SHARED CARE YES	SHARED CARE NO	RECEIVES BILL
01	MARK	M	12·01·46		X		X			X	X
02	SARAH	F	03·21·43	SPOUSE	X		X			X	
03	SHAWN	M	01·14·71	SON		X	X				
34	ELIZABETH DAY	F	04·25·23	MOTHER-IN-LAW	X		X		X		X

(01)-608409
BC/BS #

MEDICAID #

(34)-116-27-1471-F4
MEDICARE #

OTHER INSURANCE

SALESMAN
H.O.H. OCCUPATION

XEROX CORP.
H.O.H. EMPLOYER

SPOUSE EMPLOYER

ADDRESS	CT	PHONE
22 NORTH STREET ROCHESTER, N.Y. 14621	31	442-2280

Figure 1. Sample family information sheet. The family identification number appears in the upper right-hand corner. In the left-hand column appear the individual identifying numbers. In the address row CT refers to census tract.

involved individuals as well.

Historically, the term family is derived from the Latin "familia." This term designates the household with a head and all persons in it related to the head by blood or marriage. Servants are also included. As used within the University of Rochester Family Medicine Training Program the definition of family is probably most closely allied with that of the North American Primary Care Research Group (NAPCRG) whose glossary defines the family as: "A group of persons sharing a common household. A relationship (not necessarily by blood or marriage ties) is implied. For purposes of this definition include persons who temporarily reside away from the household."[2] The Rochester Program also differentiates among members of a common household as to their relationship to others within the household. To this end a household is determined to be any individual or group of individuals maintaining a circumscribed establishment for purposes of living. The head of household (HOH) is that individual within the household who is primarily responsible for the general well being of the group. The HOH may be male or female. He or she may live alone or with a group of unrelated persons; or with a spouse, with or without children or other unrelated persons, or any combination thereof. Thus, there may be a single-member household, a nuclear family involving only couples with or without their children or other genetically related persons, and an extended family which could include boarders, adopted or foster children, other friends or individuals sharing the common household. In this way, defining the family delineates family structure. Although census data are used by the Rochester Program to make certain comparisons, some information cannot be so treated since definitions of family or household are not in all cases identical. The Census Bureau adheres to the legal definition of family, thus excluding from the term family any unrelated members of the household.[3] In many instances the family, as defined here, may much more appropriately be compared with census household data.

Information Systems

The University of Rochester Family Medicine Program uses a family information sheet (FIS) to collect family information (Figure 1). This is a three-part NCR (no carbon required) form, one part of which is filed with the family folder. The other parts produce alphabetic and numeric files. The FIS is completed at the time of initial visit from the first member of a family to register with the practice. At that time, information is collected on all household members whether or not they intend to receive care at the Health Center. If they do intend to receive their care there it is further determined whether they will receive total care or prefer to receive some of their health care elsewhere. Thus, an active patient need not receive every portion of his/her medical care within this family practice. At the time of interview a unique five-digit family number is assigned and each household member is identified with an additional two-digit modifier which describes his/her position in the family according to a schema shown in Table 1. Data from the FIS are entered and stored in the computer as illustrated in Table 2. At this time, a single family folder is set up. This will become the repository for all records on each family member.

Family Folders

Folders containing charts of all members of a family permit and implement a coordinated and compre-

hensive approach to the management of health problems within the family. The folders are convenient and time saving for the physician. At the time of a patient visit, questions concerning diagnosis and therapy of other family members frequently arise. Additional time spent retrieving and replacing charts is saved by reference to the family folder. The patient at hand can often contribute additional information on other family members and frequently such information can contribute also to the analysis of the problems of the patient presenting at that visit.

Although the family folder has more bulk and is somewhat more difficult to handle than the individual chart, the disadvantage can be minimized to some extent by careful pruning of reports and the use of flow sheets to record laboratory data. Future needs include a section within the folder devoted only to family information and to family diagnoses. Unfortunately a classification of family diagnoses suitable for use by the family physician is not yet available.

Table 1. Family Member Status Code

Number	Status
01	Head of Household (HOH) (♂ or ♀)
02	Spouse
03-30	Children numbered consecutively
31	Father of HOH
32	Mother of HOH
33	Father of Spouse
34	Mother of Spouse
35-40	Unrelated Persons
41-50	Other Related Persons
61-63	Reassigned HOH*
64-66	Reassigned Spouse*
99	Transient Patient**

*Used in cases of death, divorce, remarriage, or other change in family structure.

**ie, a visiting relative or friend who needs medical attention but is not a permanent household resident.

The Family as a Functional Unit

Once a definition of family and methods for enumeration and description of family members have been established, a more complex problem emerges. To study family-health interrelationships a more dynamic classification of families is needed. Similarly structured families may still differ in numerous health-related parameters. Among these are age of individual members, marital status, nature of the relationships, family housing, and socioeconomic status. One example of the many factors which may affect family structure is that as size of family increases the number of relationships increase rapidly. The formula $x = \frac{y^2 - y}{2}$, where x equals the number of relationships and y equals the number of individuals, describes the progression in complexity.

An example of one of the many dynamic approaches to the study of the family is determination of its longitudinal development. The concept of family life cycle (FLC) views the family as a unit which progresses through several predictable stages

Table 2. Computer Entry of Family Information

Demographic Data	Two Letter Patient Status Code*
Seven-digit identifying number	**First Letter**
Name	A - Active family
Sex	I - Inactive family
Race	
Marital status	**Second Letter**
Birth date	A - Active patient
Address	I - Inactive patient
Census tract	N - Nonpatient
Home telephone number	
	Doctor and Team of Record
	Primary care doctor for the family

*The first letter refers to family status:

A - Active (at least one member with a health-care contact within the preceding two [2] years).

I - Inactive (no member with a health-care contact within the preceding two [2] years). The second letter describes individual patient status as above for active and inactive.

N - A nonpatient belongs to a registered family but has never visited the practice.

Table 3. Several Family Life Cycle Classifications*

Family Cycle Stage	Sorokin, Zimmerman, and Gilpin (1931)	National Conference on Family Life (1948)	Duvall (1957)	Rodgers (1962)
I	Starting married couple	Couple without children	Couple without children	Childless couple
II	Couple with one or more children	Oldest child less than 30 months	Oldest child less than 30 months	All children less than 36 months
III		Oldest child from 2½ to 5	Oldest child from 2½ to 6	Preschool family with (a) oldest 3-6 and youngest under 3; (b) all children 3-6
IV		Oldest child from 5 to 12	Oldest child from 6 to 13	School-age family with (a) infants, (b) preschoolers, (c) all children 6-13
V		Oldest child from 13 to 19	Oldest from 13 to 20	Teenage family with (a) infants, (b) preschoolers, (c) school-agers, (d) all children 13-20
VI	(III) One or more self-supporting children	When first child leaves till last is gone	When first child leaves till last is gone	Young adult family with (a) infants, (b) preschoolers, (c) schoolagers, (d) teenagers, (e) all children over 20
VII	(IV) Couple getting old with all children out	Later years	Empty nest to retirement	Launching family with (a) infants, (b) preschoolers, (c) schoolagers, (d) teenagers, (e) youngest child over 20
VIII				When all children have been launched until retirement
IX			Retirement to death of one or both spouses	Retirement until death of one spouse
X				Death of first spouse to death of the survivor

*Adapted from Rowe GP: The developmental conceptual framework to the study of the family. In Nye FI, Berardo FM: Emerging Conceptual Framework in Family Analysis. New York, MacMillan Co, 1966, pp 208-209.

each of which represents a new developmental task in roles for parents, children, and the family as a unit. Several specific schema have been constructed to delineate the stages in the family life cycle (Table 3). The FLC is an attractive concept for family medicine. The longitudinal and developmental aspects with stressful and vulnerable transition points between the several stages may help explain family morbidity patterns and permit preventive intervention. Unfortunately, none of the proposed family life cycle constructs include one-parent families, an ever-increasing phenomenon in our society. Also, information systems designed to elucidate FLC require updating with information not usually collected in the family practice setting. Data items required to identify transition points would include dates of marriage, permanent separation of children from the family unit, and retirement, as well as death of any family member.

Characteristics of a Family Practice

The described information systems can be used to great advantage in a relatively large practice. Examples of some aspects of family data compilation and evaluation are drawn from the University of Rochester-Highland Hospital Family Medicine Center (FMC). As of January 1977 the FMC had 11,748 active patients. An active patient is defined as a registered patient who has received services from the practice at least one time and who belongs to a family, one member of which has received services within the last two years. Single-person households, as noted in the definition, are considered to be a family. There are a total of 5,897 families in the practice register. Complete-care families are considered to be those families every member of which is a registered patient within the FMC. There are 3,440 of such complete-care families, or, complete care at the FMC is received by 58.3 percent of all registered families. As mentioned previously, single heads of household with or without children constitute a large portion of the practice. There are two spouses in 46.3 percent of the families, and grandparents live in the households of 1.9 percent of the families.

Since the definition of family as used at the FMC corresponds more nearly to household as defined by the Census Bureau, the distribution of family size within the practice is compared with that of Monroe County households. This comparison is shown in Figure 2. The practice contains a significantly greater number of one-person households than does the metropolitan population. However, census data include both families who seek health care and those who do not. These data would indicate that a larger percentage of single persons seek health care than may be expected by their presence in the population. Although it is possible that the FMC is more attractive to single-person households there is no evidence to confirm this thesis.

A particularly important facet of

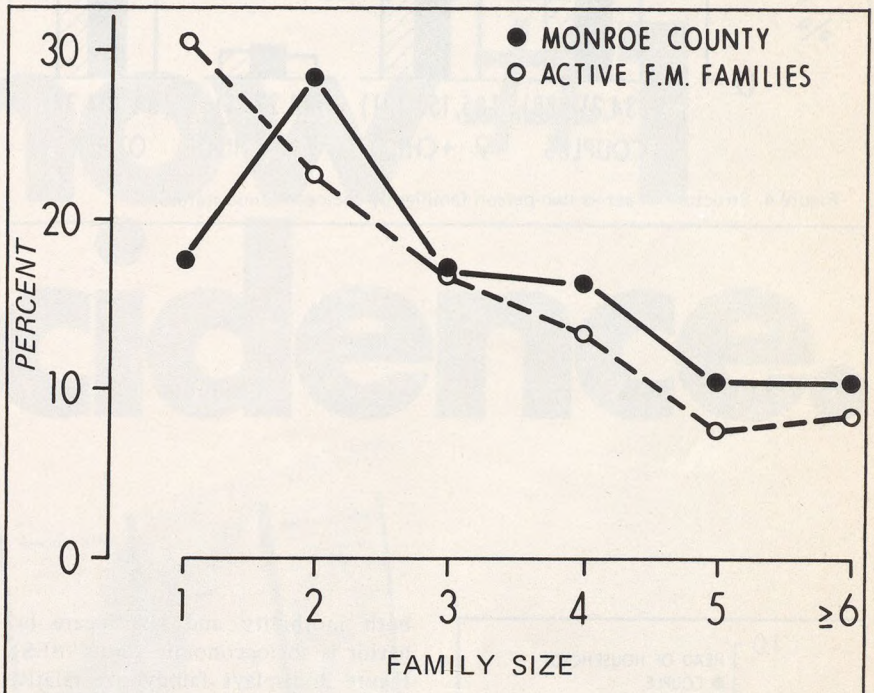


Figure 2. Distribution of family size. Numbers refer to number of individuals in each active Family Medicine Center family and Monroe County household as determined by 1970 census figures.

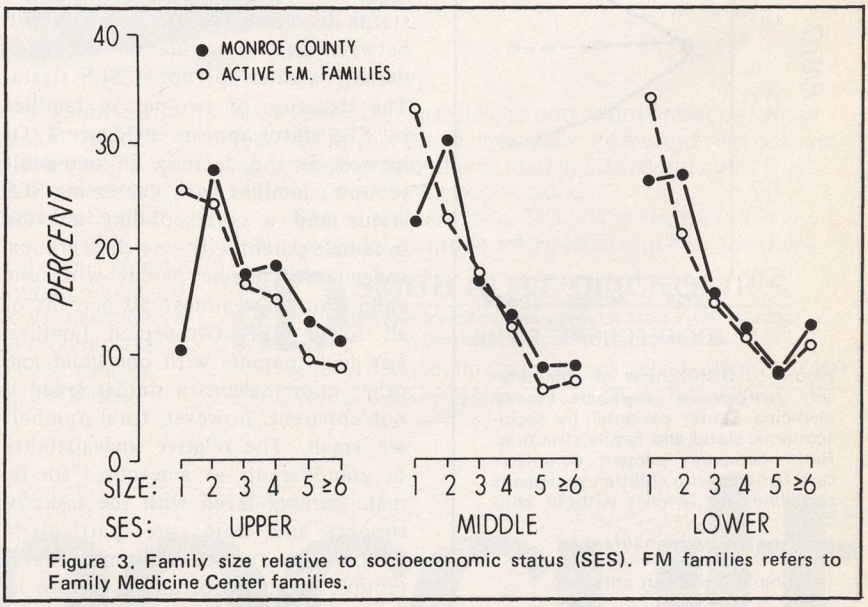


Figure 3. Family size relative to socioeconomic status (SES). FM families refers to Family Medicine Center families.

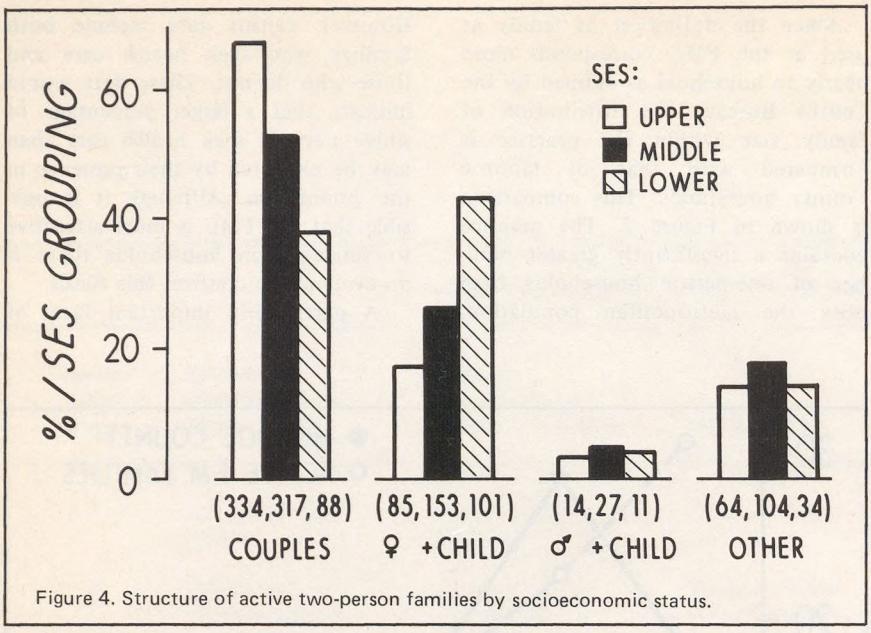


Figure 4. Structure of active two-person families by socioeconomic status.

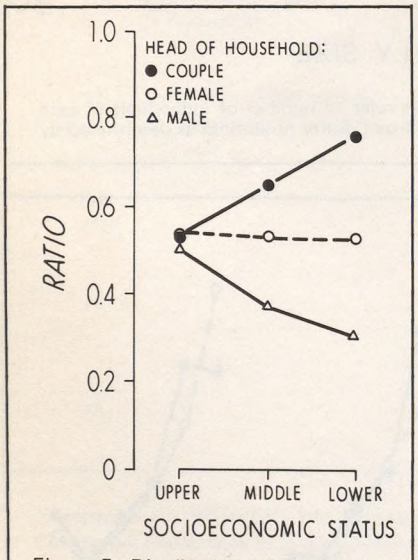


Figure 5. Distribution of complete-care families (all members Family Medicine Center patients) by socioeconomic status and family structure. Ratio compares percent complete-care families with children to percent complete-care families without children.

$$\frac{\text{(\% complete with children)}}{\text{(\% complete without children)}}$$

both morbidity and health-care behavior is socioeconomic status (SES). Figure 3 displays family size relative to SES. Although for both the Family Medicine Center population and that of Monroe County, single-person families increase as socioeconomic status decreases, the differences noted between the two populations are considerably greater for upper SES strata. The structure of two-person families by SES status appears in Figure 4. Of interest is the decrease in two-adult (couple) families with decreasing SES status and a corresponding increase in female-parent-with-one-child groups. Indeed the female parent with one child composes almost 50 percent of all lower SES two-person families. For male parents with one child and other combinations a similar trend is not apparent; however, total numbers are small. The relative unavailability of grandparents as a resource for female parents faced with the tasks of support and child care, particularly within lower socioeconomic status groups, is an unfortunate feature of an increasingly mobile society.

Since the FMC offers health care to all members of the family, the differences between those families who take full advantage of this resource (complete-care families) as opposed to those who do not (incomplete-care) is of interest to us. The effect of SES on the structure of complete-care families in the practice is shown in Figure 5. The ratio of complete-care families with children to those without appears to be the same for couples, female HOH, and male HOH groupings in the upper SES strata. However, as SES decreases the complete-care families with intact couples are more likely to contain children. The opposite is true for male-HOH families, and SES appears not to be a factor in the female-HOH groups. For reasons of convenience or perhaps because of preference for integrated health care, more lower SES families composed of couples and children tend to get all care at the FMC than do single female parents and especially more than single male parents.

These illustrations begin to elucidate the relationships between several of the variables of a family practice patient population. Some of these variables are family size, socioeconomic status, shared or complete care, and the absence of a parent from the home. Additional and more complex studies and analyses are required to fully explain these findings. Important studies to be performed by full utilization of these data systems include the relationship of morbidity in the individual to family structure and its reverse, the effect of family structure and family dynamics upon individual morbidity, patterns of morbidity within families, the effect of morbidity and utilization of health services by other family members and many others. The authors believe that future family medicine research should take these directions.

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