ABSTRACT

INFORMAL COMMUNICATION AND PROPINQUITY
AMONG VOLUNTEER CLINICAL FACULTY
IN A MEDICAL SCHOOL

By

David M. Price

Purpose of the Study. Medical school administrators seek cost-effective means of improving the flow of information to and among volunteer clinical faculty (preceptors). To a greater or lesser extent, role-related information is carried in informal, unofficial channels as preceptors talk with each other and with other colleagues. If it could be shown that certain formal characteristics of part-time clinical faculty were related to higher rates of informal communication about the College and their role in it, and if it could be further established that such increased communication were positively associated with the incidence of desired perceptions or attitudes, then administrators could be guided accordingly in the selection of clinical teachers and in the conduct of training and support efforts.

One set of such formal characteristics define propinquity (nearness in time or place) and include solo vs. group practice, relative activity in professional associations, size of community, etc. Accordingly, this study sought to answer two questions:

1. Are propinquity factors with respect to practice setting and institutional affiliations associated with differences in self-

reported communication behavior?

2. Are characteristics of self-reported communication behavior associated with differences in perceptions of role-related information and information exchange, and with differences in the relative salience of the preceptor role?

Conduct of the study. The population utilized was comprised of part-time, volunteer clinical faculty appointed in the Department of Family Medicine of the College of Osteopathic Medicine at Michigan State University. All subjects were engaged in private, comprehensive family practice and were on the staffs of accredited hospitals. Primary data were gathered by mailed questionnaire. The questionnaire was developed through a lengthy series of steps in an effort to assure the inclusion of essential variables, an appropriate operational definition of variables, and general clarity of language and form.

Analysis of the survey data involved the generation by computer of a large number of tables, each involving the direct comparison of two variables. The majority of variable pairings involved either a propinquity measure and an informal communication measure or an informal communication measure and a perception measure, as entailed by the central purposes of the study. Some additional comparisons were made between propinquity variables and "control" variables. No measures of actual knowledge or of performance were included as outcome criteria against which to compare informal communication behavior.

Conclusions. In general, associations were found between key propinquity factors and both the frequency and the duration with which preceptors talked with other physicians about the College's preceptorship

program. Further, frequency and duration of such informal communication were found to be associated with more favorable perceptions of information about the program and with perceived clarity of the College's expectations for preceptors.

Prominent among the study's sixteen specific conclusions were these:

--Preceptors in group practice talk with other physicians about the preceptorship program more frequently than do preceptors in solo practice.

--Preceptors in urban-suburban communities talk with other physicians about the preceptorship program more frequently than do preceptors in rural-small town communities.

--Preceptors who spend considerable time in their hospitals visiting patients talk both more frequently and for longer periods with other physicians about the preceptorship program than do those who spend less time in the hospital visiting patients.

--Preceptors active in board and/or staff committee work in their hospitals have more frequent and longer conversations about the preceptorship program during hospital meetings than do those who are less active in hospital affairs.

--Preceptors more active in professional associations have more frequent and longer conversations about the preceptorship program at association meetings than do those who are less active.

--Preceptors who more frequently (or for longer durations) talk informally with other physicians about the preceptorship program more often have positive perceptions of the information available from all sources about the preceptorship program and more often perceive that

being a preceptor enhances their professional competence and status, relative to other professional roles.

--Preceptors who generally have longer conversations with other physicians about the preceptorship program more often perceive that the College has made clear its expectations and more often respond to unclarity by working out "what should be done" in collaboration with other physicians.

--Preceptors whose conversations with other physicians about the preceptorship program are generally about "finding better ways to do our job" (innovation function) more often perceive available role-related information favorably than do those whose conversations are generally about "clarifying what the College expects" (production function).

On the basis of these findings, several recommendations are offered to those responsible for the conduct of community preceptorship programs. Criteria for selection of preceptors might include participation in group practice, considerable time visiting hospitalized patients, an active role in the hospital staff and activity in professional associations. Formal effort to enhance communication might take advantage of and further stimulate already existant informal interchange by such means as holding meetings on an area basis at local hospitals.

It is recommended that communication research concepts and tools be further exploited for organizational analysis in medical education. Subsequent research on informal communication and propinquity among clinical faculty can probably involve the formulation and testing of hypotheses.

INFORMAL COMMUNICATION AND PROPINQUITY AMONG VOLUNTEER CLINICAL FACULTY IN A MEDICAL SCHOOL

By

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A DISSERTATION

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DEDICATION

to my father
ALVIN E. PRICE, M.D.
Clinical Assistant Professor Emeritus
Wayne State University

He has provided me an early and continuing
example of a really good physician.

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and Donald M. Gragg, M.D., Ph.D. The list could well include other persons; my sense of grateful good fortune certainly does.

I am thankful for the generous and open responses of the community physicians who hold clinical appointments in the Department of Family Medicine, especially to those who welcomed me to their offices for face-to-face interviews.

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THE PROBLEM

Practitioners Who Teach

Medical schools typically make extensive use of practicing physicians as teachers of patient care skills and role models for medical practice. Such clinical faculty are ordinarily engaged in full-time private practice and teach only a relatively few hours each week. Though officially appointed to their teaching roles, they do not attend regular, departmental faculty meetings, serve on college committees or have offices in the medical school facilities. Clinical faculty are, first and foremost, practitioners; only secondarily, even peripherally, are they teachers.

Thus, part-time clinical faculty do not ordinarily participate in the principal communication networks through which "regular" faculty members are inducted, informed and guided, and through which they offer their contributions to policy formulation and curricular design. Because the relationship of part-time clinical faculty to the college and its instructional programs is thus attenuated by time, distance and professional identity, they tend to be poorly integrated into the information systems of the College.[1] The extent to which clinical faculty

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[1]Sinclair, David C., Basic Medical Education, London: Oxford University Press, 1972, p. 46; Merton, Robert K., George G. Reader and Patricia L. Kendall, The Student Physician, Cambridge: Harvard University Press, 1957, pp.259-60; Weinerman, E. Richard, "Yale Studies in Ambulatory Medical Care," New England Journal of Medicine, 272:947-54.

understand the particular objectives of the College's program, the shape of its curriculum, the characteristics of its students and its expectations for their roles is a matter of concern among those who administer programs of clinical instruction.[2] Although various efforts to inform and involve adjunct personnel are typically mounted by department leaders, virtually no research on communication with and among clinical faculty is available for the guidance of medical school administrators.

External Preceptorships

In many medical schools, the "clinical exposure" of students is carried out almost exclusively in hospitals and clinics operated by or administratively affiliated with the College itself. In such settings, communication with and among clinical faculty is facilitated by the fact that they are physically drawn into the medical education complex to meet with students. Indeed, Reader cites this factor as a prime consideration in arguing for teaching medicine in out-patient departments on or near the campus.[3] By contrast, in programs which rely upon community facilities outside the medical school complex, clinical faculty are more

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[2]Bowers, John Z., and Robert C. Parkin, "The Wisconsin Preceptor Program -- A Thirty Year Experiment in Medical Education," Journal of Medical Education, 32:610-612; Slaughter, Donald, "Clinical Clerkships for Sophomore Medical Students," Journal of Medical Education, 32:193-199; Herzberg, Frederick, Scott Inkley and William R. Adams, "Some Effects on the Clinical Faculty of a Critical Incident Study of the Performance of Students," Journal of Medical Education, 35:666-674,p.671.

[3]Reader, George S., "Some of the Problems and Satisfactions of Teaching Comprehensive Medicine," Journal of Medical Education, 31:544-54.

disparate and have fewer opportunities for interchange with regular faculty, departmental administrators and each other.

The proportion of clinical instruction carried out in such external settings seems to be growing. Spurred by public demands for more accessible and comprehensive health care, many medical schools are hastening to produce more graduates prepared for and committed to what is variously called general practice, family practice or comprehensive, primary care.[4] In turn, this effort is prompting greater emphasis on giving students extensive experience with ambulatory patients.[5] Further, some medical schools are committed to placing students for a major share of their clinical exposure in the offices of private physicians or "preceptors." It is argued that such office-based practice most nearly reflects "real world" experience for most would-be doctors and affords them the role models, the kind of patient population and the community setting which they need if they are to understand (and

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[4]Anlyon, William G., "Chairman's Address," Journal of Medical Education, 46:917-26; White, Kerr L., "Family Medicine, Academic Medicine, and University Responsibility," Journal of the American Medical Association, 185:192-6; Silver, George A., "Family Practice: Resusitation or Reform?" Journal of the American Medical Association, 185:189-91.

[5]For arguments in favor of ambulatory teaching, see Fleming, William L., "Teaching of the Family Physician's Approach by a Department of Preventive Medicine," Journal of the American Medical Association, 161:711-3; Smith, Hugo D., "Essays in Medical Education," American Journal of the Diseases of Children, 110:185-8. For a comprehensive review of ambulatory teaching programs, see Gragg, Donald M., "The Teaching of Adult Ambulatory Patient Care in U.S. Medical Schools: Characteristics of Programs," Ph.D. dissertation, Michigan State University, 1973.

perhaps choose) family practice as a career.[6]

If participation of clinical faculty in information exchange with each other and with College leadership is an endemic problem in medical education, it may be assumed to be particularly acute among clinical faculty of colleges with programs of highly decentralized, "community-based" clinical education.

Significance for Administrators

Medical school administrators seek cost-effective means of improving the flow of role-related information to and among volunteer clinical faculty. Formal or official methods (memoranda, workshops, site visits by administrators, etc.) are part of this effort to improve communication. However, such institutionalized efforts comprise only part of the information exchange available to preceptors. Volunteer clinical faculty are also involved -- to a greater or lesser extent -- in informal and more-or-less spontaneous interchange with each other

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[6]Reed, David E., "Twelve Years' Experience with a Comprehensive Ambulatory Care Program," Journal of Medical Education, 45:1041-6; Beloff, Jerome S., Meiko Korper, E. Richard Weinerman, "Medical Student Response to a Program for Teaching Comprehensive Care," Journal of Medical Education, 40:625-57; Cheplove, Max, "The Role of the Family Practitioner in Medical Education," New York State Journal of Medicine, 68:1128-31; Trowbridge, Mason, "Extramural Preceptorships -- A Return to the Pre-Flexner Era of Medical Education?" New England Journal of Medicine, 258:691-5; Dorn, Robert M., "Preceptors and Preceptorships: The Teaching and Learning of Patient-oriented Care," Journal of the Kansas Medical Society, 68:428-31; Young, L.E., "Personal Physicians," Journal of the American Medical Society, 187:928-33; "The Teaching of Comprehensive Patient Care," Editorial, American Journal of Public Health, March 1970, pp. 429-32.

and with non-faculty professional colleagues about their college and its preceptorship program. However, it is not known whether such informal communication tends to satisfy the information needs of preceptors. Moreover, it is not known what objective characteristics of preceptors are related to high levels of informal communications. If it can be shown that the amount of informal communication among preceptors about role-related matters varies with certain formal characteristics, then selection of preceptors according to these characteristics is a cost-effective method of improving communication among them.

Propinquity

Propinquity, defined as nearness in place or time, is a characteristic of individuals relative to other individuals, groups or institutions. Propinquity factors of particular interest in distinguishing volunteer clinical faculty are:

a. practice partners
   - --solo practice
   - --group practice
     - --another preceptor in group
     - --no other preceptor in group

b. size of community (urban-suburban vs. rural-small town)

c. physical proximity to campus

d. activity (time spent) in hospital and professional associations

All but the last of the above propinquity variables relate to the "setting" within which preceptors (and other physicians) practice. The term "practice setting" will be used to refer commonly to these characteristics.

Purpose of the Study

The purpose of the study is to describe the relationships of these propinquity variables to informal communication behavior, and in turn, the relationships of informal communication behavior to certain perceptions or attitudes among one group of part-time, volunteer clinical faculty. The study seeks to answer the following broad questions:

1. Are characteristics of practice setting and institutional affiliation (among one set of part-time clinical faculty) associated with differences in self-reported communication behavior?
2. Are characteristics of communication behavior (of one set of part-time clinical faculty) associated with differences in perceptions of the adequacy of role-related information and opportunities for information exchange, and to differences in the relative salience of the preceptor role?

An Organizational Communication Model

Communications research, as applied to organizations, has attempted to demonstrate that overt and measurable communication behavior of individuals is correlated, on the one hand, with manipuable, organizational variables (e.g., decentralization, means of coordination) and, on the other hand, with organization output criteria (e.g., productivity, employee satisfaction). To the extent that these correlations can be demonstrated, predictive inferences may be suggested which entail the operation of communication behaviors as intervening activities between organizational arrangements and various criterion measures on

the basis of which institutional leaders make decisions. Thus, communications scholars have developed theoretical models of the following pattern[7]:

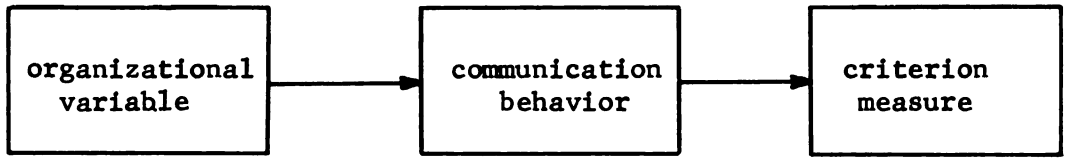

Figure 1.1
Organizational Communication Model

In this model, some administrative strategy or action is presumed to have an effect upon the communication behavior of system members, and, in turn, upon system outputs. For example, it may be hypothesized that more delegation of operational decisions (organizational variable) leads to increased communication about production matters among lower level employees and to lower absenteeism rates (a criterion measure). An "organizational variable" is one subject to direct manipulation by organizational managers and a "criterion measure" is an outcome of interest to organizational managers. Note that "communication behavior" is neither, but rather an intervening activity associated with both.

It is proposed that this abstract organizational communication model be utilized as a framework for the present study. Propinquity factors fit the criterion for organizational variables in that, if used as criteria for the recruitment or retention of clinical faculty, they become formal features of the organized system susceptible of

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[7]Cf. Nix, Harold L. and Frederick L. Bates, "Occupational Role Stresses," Rural Sociology, 27:7-17, p. 7.

direct control by institutional leaders.

By mapping onto this abstract framework the particular dimensions of the proposed investigation, a graphic representation of the present study may be rendered as shown in Figure 1.2.

Assumptions

The essential assumptions which underlie this study and the foregoing model are:

a. Actual and overt communication activity of individuals can be measured and compared on the basis of self-reported behavior.

b. Certain perceptions on the part of volunteer clinical faculty are valued by the administrators of preceptorship programs and that these include perceptions of available role-related information as adequate, perceptions of role expectations as clear, and perceptions of the role itself as salient or relatively significant.

c. Medical college administrators are able to adopt as criteria for the identification and appointment of preceptors certain objective factors, and that these factors include the "practice setting" and "activity in hospital or association" variables as defined in this study.

Limitations

No measures of actual knowledge of College policies, procedures or prescribed role definitions are included in the study. The

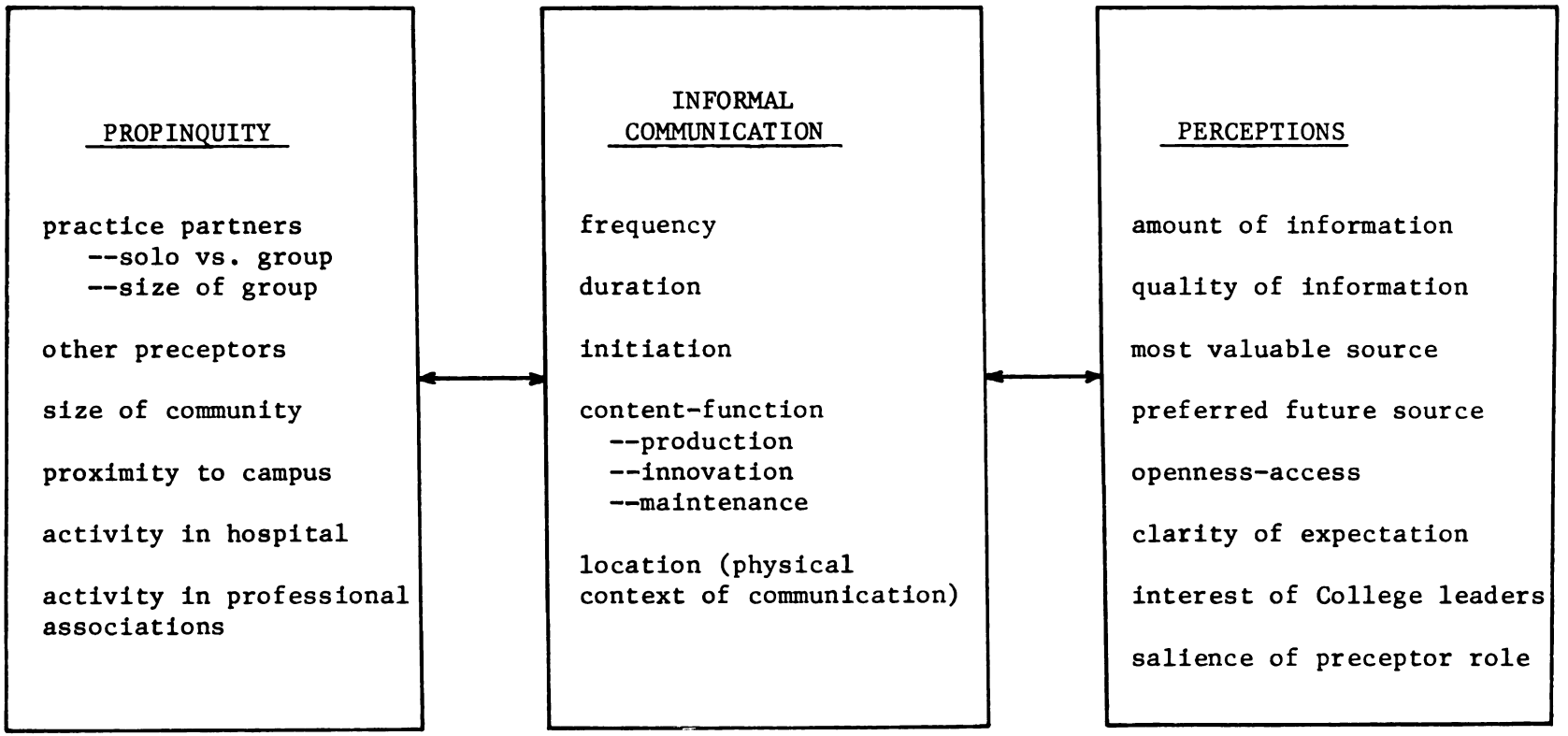

Figure 1.2
A Model for the Study of Propinquity and Informal Communication

outcome variables or criterion measures with which communication behavior is compared are wholly limited to preceptors' perceptions of available information, of information systems and of the role itself.

Moreover, it must be acknowledged that the present study does not extend to measures of association between informal communication and any direct data about preceptor effectiveness (performance criteria).

It should be noted that the model, as adopted for present purposes (Figure 1.2), does not presume prediction or the demonstration of causal relationships. This is an exploratory and descriptive, rather than experimental, study.

Lastly, data was collected from preceptors in a single department of one medical school, all of whom are engaged in a single type of practice.

Definition of Key Terms

Clinical faculty is sometimes used to refer to all faculty in clinical departments or all faculty engaged in the teaching of the clinical skills involved in diagnosis and patient care. Throughout these pages, however, the term is used to designate faculty members who are practicing physicians engaged to teach part-time in clinical settings.

Preceptor refers to a sub-class of adjunct clinical faculty, namely those practitioners who teach students in their own offices or private clinics.

Preceptorship program is a generic term covering all aspects of the organized effort required of College personnel in order that students may be afforded clinical experiences in the offices of family physicians. The term is meant to embrace the broadest range of such

activities: goal formulation, orientation of preceptors, teaching, student participation and evaluation.

Propinquity is nearness in time or place. It is used here as the general designation for the set of variables differentiating the population of preceptors according to certain characteristics of practice setting and relative activity in their hospitals and professional associations.

Group practice refers to the practice setting circumstance of some preceptors in which they share their offices with one or more other physicians. The term does not distinguish any particular economic arrangement (public corporation, partnership, etc.).

Solo practice is the practice setting circumstance of some preceptors in which they do not share their offices with any other physician.

Informal communication refers to those interactions of preceptors which are not a part of organized activities or deliberate mechanisms of the College itself. Such informal communications, though they may be anticipated by College leaders, are not directly elicited or facilitated by persons acting for the College. Examples of informal interactions are personal conversations between two individuals in the course of a common activity, a telephone call to another preceptor or to a College official to seek clarification, and casual greetings-in-passing. The term is not intended to include the submissions of reports, discussions in the course of meetings called by the College authorities, or conversations between preceptors and administrators during site visits by administrators.

Role-related information is any information which has as its referent some aspect of the preceptor role or the College's preceptor program or experiences of persons occasioned by the conduct of their function as preceptors.

Content-function is one of the subsets of informal communication variables. It refers to the purposes or uses of communication in an interaction between two or more persons mutually concerned with the referent of the message(s). The three classes of content-function to be used here are (a) getting the job done (production), (b) exploring alternative means of getting the job done (innovation), and (c) maintaining the relationships which comprise the common social system (maintenance).

Perceptions is the general term comprising the third set of variables in the study. The meaning of the term as it is used here is close to (if not synonymous with) that of "attitudes." Whereas the first set of variables (Propinquity) describes the relative closeness in time and place of preceptors to other physicians, and the second set (Informal Communications) describes certain overt, interpersonal behaviors, this set is meant to describe the internal states or affective orientations of the preceptors toward selected "objects." These objects are (a) the totality of role-related information available to them, (b) the means by which they receive this information, and (c) the salience (relative importance or value) of the preceptor role.

Some of these terms, as well as other concepts upon which their meanings rest, receive further definition and elaboration in the following chapter. The precise operational definitions of those terms

which are labels for variables will be further specified in the course of reporting and analyzing the data (Chapters IV and V).

Conduct of Current Study

Primary data for the current study was gathered by mailed questionnaire from preceptors in the Department of Family Medicine of the College of Osteopathic Medicine at Michigan State University. Excluded from the total list of eighty-eight preceptors were three who do limited teaching in campus classrooms and four who practice in the University's Health Service. Of the eighty-one remaining, all are in the private practice of comprehensive, family medicine.

A more limited fund of data, introduced here largely for illustrative purposes, was gathered during a preliminary phase of open-ended interviews with ten of the preceptors.

Overview

Chapter II is devoted to a survey of theoretical and research literature of relevance to the present study. This survey is organized in five parts, three of which correspond with the three major sets of variables as illustrated in Figure 1.2. Chapter III, entitled "Methodology," further specifies the population surveyed, the steps taken to develop a questionnaire and the means of analysis.

Chapters IV and V are devoted to a report and analysis of the findings. In Chapter IV, a profile of the entire population on the propinquity and "control" variables is presented, "control" variables are compared with propinquity variables and propinquity variables are compared with informal communication variables. Chapter V contains a

profile of the population on the perception variables and analysis of the comparisons of informal communication variables with perception variables.

Finally, the investigator's conclusions, reflections and recommendations comprise Chapter VI.

Chapter II

REVIEW OF THE LITERATURE

No single theoretical heritage suffices as underpinning for studies in organizational communication. One is obliged to reach into several fields for both conceptual and empirical grounding.[1] The reader will notice, however, that the two streams of theory most frequently cited in these pages are general systems theory, especially as elaborated by James G. Miller,[2] and field theory, prominently associated with such seminal thinkers in social psychology as Kurt Lewin[3] and Leon Festinger.[4]

This review of theoretical and empirical literature is organized in five sections, including three which relate directly to the three sets of variables in this study. The first section focuses upon general systems theory as a general conceptual framework. The second surveys literature relative to communication concepts either implicit or explicit in this study.

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[1] Thayer, Lee, "Communication and Organization Theory" in Dance, Frank E.X. (ed.), Human Communication Theory, N.Y.: Holt, Rinehart and Winston, Inc., 1967. p. 72.

[2] See especially "Living Systems: Basic Concepts," Behavioral Science 10:193-237, 1965.

[3] See especially Field Theory in Social Science, N.Y.: Harper,1951.

[4] See especially Theory and Experiment in Social Communication, Ann Arbor: University of Michigan Press, 1950. A valuable secondary source on the work of Lewin and Festinger is Deutsch, Morton, and Robert M. Krauss, Theories in Social Psychology, N.Y.: Basic Books,1965. pp. 37-76.

Next, a transitional section briefly reviews literature bearing upon generalizations about pressures to communicate which have been said to devolve upon members of human social systems. The fourth section proceeds to consideration of that particular set of formal characteristics which is of particular importance here, namely propinquity factors. Empirical studies which demonstrate associations between distance or affiliation and social interaction comprise most of the citations in this section.

The fifth section corresponds with the third set of variables shown in Figure 1.2, i.e., perceptions or attitudes as related to propinquity and communication variables.

A Basic Theoretical Framework

Terms such as "communication" and "information" have been used in many different ways and often interchangably. Such usage is quite adequate to most purposes of general discourse. However, it is essential to the development of coherent theory and scientific precision that certain distinctions be made. Moreover, it is desirable that definitions for such basic terms be stipulated in such a way that application is possible across a wide range of referents and at various levels of organization.

A most promising approach to this task -- a central one for any "young" science -- is that of general systems theory. Its most prominent expositor, as applied to the social sciences, is James G. Miller:

> General systems theory is a set of related definitions, assumptions, and propositions which deal with reality as an integrated hierarchy or organizations of matter and energy.[5]

A "system," most simply described, is a set of interdependent elements. The word "interdependent" implies that each element or component is constrained or conditioned by the state of the other elements. The word "set" suggests common properties. It also suggests that, for something to be called a system, it must have "at least one measure of the sum of its units which is larger than the sum of that measure of its units." This is to say that a system is a configuration, a gestalt, as well as a mere collection of parts. Miller's forceful example is that a man with his head is much more than a man's body plus his separate head.[6]

General systems theory conceives of the universe as composed of systems nested within systems, in which each system is embedded in a larger system in relation to which it is a subsystem. "Such a concept can be applied, for instance, to cells within tissues, to organs within an organism, to companies within an industry, to nations within an alliance.[7]

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[5] Op. cit., p. 193.

[6] Ibid., p. 201.

[7] Berrien, Kenneth F., General and Social Systems, New Brunswick, N.Y.: Rutgers University Press, 1968. p. 15.

Briefly, the principal advantages of general systems theory are three in number. First, it permits the generation of propositions which may be applied over the wide ranges of levels of organization. That is, the molecule, the cell, the organ, the individual, the group, the society are all systems and, as such, may be analyzed in terms of a common set of concepts. The outcome of value is ease of generalization across system levels.[8] Second, widely disparate types of systems may be compared and contrasted in reference to dimensions which they share. This is possible because systems may be living or non-living, conceptual or material, and so forth.[9] Third, in contrast to many social science theories, general systems theory is non-prescriptive and avoids reductionism. That is, rather than approaching a system -- let us say, a department in a medical school -- with some preconception of an ideal state for that system or some "key" to the analysis of system function, the investigator working from a general systems orientation can be rather more descriptive and inclusive.[10] These advantages are presumed to pay off in terms of traditional scientific values such as objectivity, precision and susceptibility of empirical verification.

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[8]Ibid., pp. 214-7.

[9]Ibid., p. 214.

[10]Farace, Richard V., and Hamish M. Russell, "Some Communication Implications of Major Organizational Theories," mimeographed, Department of Communication, Michigan State University, 1971. 14-8.

Basic Communication Concepts

Miller says that even more basic to the understanding of general systems theory than the concept of "system" are the concepts of "matter," "energy" and "information." Relying on the known relations of matter and energy, including the principle of the conservation of energy, Miller typically uses the joint term matter-energy to signify the most basic physical "stuff" that may be said to flow between systems or system components, without specifying the form or structure or type of flow.[11]

Information is that matter-energy which exhibits pattern or form.[12] By contrast, unpatterned or random matter-energy is mere "noise."[13] It is important to note two features of this definition of "information." The notion of information as patterned matter-energy presumes a perceiver of that pattern; only when system members actually detect a form in the matter-energy can it be properly labeled "information." Moreover, "information" in this sense is a much simpler concept than "information" as we ordinarily use it. "Information" need not have "meaning." "Meaning " is the significance of information to a system which possesses it.[14] Thus, telegraphic signals are "information" whether or not the person at the receiving point knows Morse code. It is enough that he or she recognizes a pattern in the pulses.

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[11] Op. cit., p. 193.

[12] Ibid., p. 193-4.

[13] Ibid., p. 199.

[14] Ibid., p. 193.

Communication, according to Miller, is "the change of information from one state to another over space," or information processing.[15] This is the process engaged in when one transmits sounds via electrical impulses over a telephone line or even projects his voice to another across a room. ". . . .informational patterns can be processed over space and the local matter-energy at the receiving point can be organized to conform to, or comply with, this information."[16] The concept implied here is one of a referent common to both sender and receiver. Building upon Miller's exposition, David K. Berlo succinctly defines "communication" as "a process involving the transfer of matter-energy that carries symbolic (i.e., referential) information."[17]

Thus "communication" is seen to be a sub-set of "information." Matter-energy moving in a system has "information value" only to the extent that system members perceive patterning or form. In turn, information has "communication value" only as system members have agreed-upon referents for the pattern.

Note that these terms are defined in such a way that the perceptions of receivers are key criteria for proper classification. On the other hand, it should be clear that no solipsistic implication is intended; it is not denied that "real" information may be in my environment without my attending to it or actively and momentarily perceiving

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[15] Ibid., p. 198.

[16] Ibid., p. 199.

[17] "Human Communication: The Basic Proposition," mimeograph, Department of Communication, Michigan State University, 1970. pp. 2-3.

it. Indeed, a most useful pair of distinctions have been offered by information theorists which explicate the commonplace observation that there is typically more information in a given system than any of its members may apprehend in a given moment.

The first of these distinctions is between absolute and distributed information. "Absolute" information refers to the total amount of information available in a system, whereas "distributed" information refers to the homogeneity of information among members of the system.[18] The distinction permits one to probe beyond, let us say, a complaint that "not enough information is available," to whether the problem is a genuine lack on the part of the system as a whole or simply a maldistribution of available information resources within the system.

The second distinction is between information which is available in the environment and that which is ultimately utilized by an individual or organization.[19] The distinction highlights the ubiquitous use of "filters" or "screens" or (when they become explicit or deliberate) "decision rules" by which system members accept some information and reject or ignore other information.

A relationship between these two distinctions is clear: the distribution of information in a system will depend, in part, upon the decision rules by which various system members screen out that information deemed "useless" or "irrelevant."

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[18] Brillouin, Leon, Science and Information Theory, Englewood Cliffs, N.J.: Prentice-Hall, Inc., 1967. pp. 265-6.

[19] Reindl, Max H., "Propositions on Information Management of Innovation Processes in Organizations," unpublished doctoral dissertation, Michigan State University, 1970, pp. 36-9.

Consideration of distribution leads to a still more fundamental notion in General Systems Theory. It is the concept of entropy, the tendency of the matter-energy in a system to disperse chaotically or randomly. Familiar in physics as the Second Law of Thermodynamics, the concept of entropy signifies the disorder, disorganization or lack of patterning which is the most probable outcome of unconstrained movement of elements in a system.[20] Recalling the definition of information as "patterned matter-energy," the formal relationship between entropy and information is clear: information decreases as entropy increases. Miller cites evidence from the calculations of physicists and information theorists to support his contention that this relationship is more than merely formal or statistical and that it applies equally to large and small systems.[21]

Building upon Miller's utilization of "entropy," Berlo formed the closely related concept of uncertainty and gave it a "central" importance in his analysis of communication functions. A system may be said to be characterized by certainty to the extent to which "all alternative events within the system can be articulated, and some probability attached to each." In other words, "the more organized a system is, the more predictable it is." Uncertainty, then, is a measure of disorder or lack of structure or unpredictability.[22]

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[20] Miller, op. cit., p. 195.

[21] Ibid., pp. 196-8.

[22] Berlo, David K., "Essays on Communication," mimeographed, Department of Communication, Michigan State University, 1970, p. III - 1.

Again following Miller, Berlo stipulates a negative relation between information and uncertainty: "the more information that is transmitted, the clearer the pattern of the system becomes . . . and the more predictable it is."[23] Thus, more information is required to render predictable an uncertain system. Moreover, it may be said that the function of information is to reduce uncertainty.

Communication function or content-function has been considered from several perspectives by various authors. Two of the most fully developed and most promising are reviewed here. The first of these is Russell Ackoff's content-free, but message-centered approach.[24] A message (set of "signs") produces responses in a receiver, thus effecting an alteration in his/her "purposive state." On the basis of this theoretical assumption, Ackoff proposes a set of categories into which messages may be indexed according to how they (are supposed to) change the receiver. He offers the following taxonomy: "information" changes the probabilities of choice, "instruction" changes the efficiencies of alternatives for action, and "motivation" changes the values of outcomes and thereby the basis for selecting among them.

Berlo would apparently have us believe that Ackoff's analytic frame has nothing whatever to do with the participants in the communication exchange.[25] Actually, when taken in the context of his "behavioral

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[23] Ibid.

[24] "Towards a Behavioral Theory of Communication," Management Science, 4:218-34, 1957.

[25] Op. cit., p. III-2.

theory" with its emphasis on the "purposive state," Ackoff's analysis is not so simple-mindedly message-bound and participant-free.[26] However, to say this is to suggest that, while no "straw-man," neither is Ackoff's categorization as scientifically advantageous as Berlo suggests. Indeed, Farace and McDonald find Ackoff's alternative wanting on just these grounds.

> Two serious problems are encountered in these message-centered approaches. The first is that where operationalization has been carried out and studies conducted, the amount of variance explained in various dependent measures has been relatively small. Second, the techniques for categorizing or generating messages have not been worked out very effectively.[27]

Berlo offers the fullest of several discussions of functional categories based upon human purposes, rather than upon the messages themselves. He characterizes the difference in approach succinctly:

> Instead of asking what messages do to people, we can look at what people do to messages. Instead of asking what effect communication has, we can ask what uses people make of it, what purposes it serves for both participants.[28]

Berlo's three categories of function are production (getting the job done), innovation (finding new ways to do it), and maintenance

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[26]See Buckley, Walter, Sociology and Modern Systems Theory, Englewood Cliffs, N.J.: Prentice Hall, Inc., 1967. p. 120-1.

[27]Farace, Richard V. and Donald McDonald, "New Directions in the Study of Organiztion Communication," to be published in Personal Psychology, Spring 1974.

[28]Berlo, op. cit., p. III-4.

(of the system and its members).[29] It will be recognized that these are the variable categories introduced, and later defined, in Chapter I.

The production function is perhaps the most familiar. Communication is used for production purposes when it is used to give instructions, review performance and set down expectations for what and how much and by what methods the predetermined end is to be reached. Production communication, in short, has to do rather directly with "getting the job done" -- it being presumed that "the job" has been defined in advance.[30]

The innovation function comes into play as persons begin to search for new ways of doing things or for new things to do. Innovation communication is "exploratory" behavior, "antagonistic to productivity" in the short run, but essential for long-term survival.[31]

The maintenance function is the use of communication to keep the system (classroom, nation, dyadic relationship) and its components (sub-groups, "power elites," individuals) intact. Maintenance communication is different than either production or innovation communication in that it contributes to system survival or system enhancement, rather than directly to system output. Moreover, maintenance is a somewhat more complex function than the other two. Berlo distinguishes three sub-categories: maintenace of self-concept, maintenance of interpersonal relations, and maintenance of the social system (including rules or

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[29] Ibid., pp. III-10-12.

[30] Ibid., p. III-10. See also Farace and McDonald, op.cit., p. 16.

[31] Ibid.

norms governing production, innovation and maintenance communication).[32]

All three functions are crucial to any system, at least in the long run.[33] The scientific utility of these functional discriminations is that systems and their components may be characterized and distinguished on the basis of the relative frequency or prevalence of each of these three functions at any given time. Moreover, correlations between function and various other measures of organizational outcome may be attempted to gain knowledge about the relative effectiveness and efficiency of alternative information distribution patterns, message forms and interaction "styles."[34] Thus, Farace, and Connelly report a study relating communication behaviors distinguished by Berlo's function categories to self-reported work satisfaction among employees in a large commercial organization,[35] and McDonald used sociometric data to identify liaison persons in each of three communication networks corresponding to these same functional designations.[36]

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[32] Ibid., p. III-11. See also Farace and McDonald, op.cit., p. 17.

[33] Ibid.

[34] Farace and McDonald, op. cit., pp. 22-3.

[35] Farace, Richard V. and Richard A. Connelly, "Organizational Communication Correlates of Herzberg's Theory of Work Satisfaction," mimeographed, Department of Communication, Michigan State University, 1970.

[36] McDonald, Donald, Communication Roles and Communication Content in a Bureaucratic Setting. Ph.D. dissertation, Michigan State University, 1970.

Pressures to Communicate

An interesting convergence of systems theory and field theory may be seen in the importance afforded in each to the notion of unpredictability. Miller's treatment of "entropy" and Berlo's discussion of the "central concept of uncertainty" were introduced in the preceding section. In both cases, the function of information was said to be the reduction of unpredictability.

Similarly, Festinger asserts that individuals require support for their perceptions in social reality. That is, persons confronted with ambiguity in their environment will seek to "anchor" their judgments by seeking consensus in a reference group. To accomplish this, according to Festinger, persons "will initiate communications either to ascertain what others believe or to influence others' beliefs in the direction of their own."[37]

Lewin noted that new social situations are particularly "cognitively unstructured," leading to uncertainty among system members. In such unstructured situations, according to Lewin, persons may be very cautious about initiating communications. However, presuming that staying in the new system is a positive goal, individuals will be actively atuned for any information which has the effect of clarifying what they may expect and thus reducing tension-producing uncertainty.[38]

Thus, for the field theorists, as for those working within a general systems framework, less thoroughly organized or predictable systems will tend to be characterized by greater rates of information

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[37] Op. cit., p. 5.

[38] Deutsch and Krauss, op. cit., pp. 45-8.

transfer. Lewin's concepts of the social-psychological impetuses to information exchanges fit well within the more general proposition of systems theory that matter-energy "flows" between interdependent components in response to environmental inputs and internal stresses.[39]

In addition to the general pressure to communicate arising from the internal needs of individuals to secure their beliefs in "social reality," Festinger generated a series of propositions about forces to communicate which derive from group membership. Of particular interest for present purposes is his hypothesis that pressure on members to communicate to others in the group concerning a given item is related to the relevance of that item to the functioning of the group.[40] "Cohesiveness," in this context, means the resultant of all the forces acting on members to remain in the group. Thus, while there may be little or no pressure on a given individual to communicate about an "item X" in a transitory or casual social group, such pressure may be considerable in another group in which consensus has consequences for group locomotion or in which the forces to remain part of the group are stronger.[41] For example, a physician may perceive the same magnitude of discrepancy in opinion among fellow members of a spontaneously formed conversational grouping in the hospital cloakroom and among the members of his group practice. According to Festinger's hypotheses, that same physician will be under greater pressure to communicate in the second than in the first

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[39] Katz, Daniel, and Robert Kahn, The Social Psychology of Organizations, N.Y.: John Wiley and Sons, 1966. pp. 14-26.

[40] "Informal Social Communication," Psychological Review, 57:271-282, 1950. pp. 274.

[41] Ibid.

of the two situations.

There is a rather large and fascinating body of literature on socialization in organizations. To what extent may the socialization process be considered a pressure to communicate or a partial "explanation" for such informal interchange as may exist among lower members of the social system? The answer is not clear.

Parsons defined socialization as "the acquisition of the requisite orientations for satisfactory functioning in a role."[42] Etzioni defines it as "the mechanism through which the existing consensus structure and communications practices are transferred to new generations of participants."[43] Merton, in a much quoted formulation, designates socialization as "the processes by which people selectively acquire the values and attitudes, the interests, skills, and knowledge -- in short, the culture -- current in the groups of which they are, or seek to become, a member."[44]

Etzioni distinguishes between the patterns of socialization in coercive, utilitarian, and normative organizations. Because he identifies universities, hospitals and research organizations as "the least normative of the normative organizations,"[45] it is not clear what patterns of consensus, communication and socialization to expect among

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[42]Parsons, Talcott, The Social System, Glencoe, Ill.: The Free Press, 1951. p. 205.

[43]Etzioni, Amitai, A Comparative Analysis of Complex Organizations, Glencoe, Ill.: The Free Press, 1961. p. 150.

[44]Merton, et al, op.cit., p. 287.

[45]Op. cit., p. 146.

volunteer clinical faculty on the basis of Etzioni's theory. Several papers discussing socialization as explicity applied to medical education yield much interesting insight, but nothing which may be taken as evidence supporting expectations of a particular rate or direction of information exchange among practicing physicians or physician-teachers. Indeed, one medical sociologist declares that much expressive socialization is "unorganized" in professional organizations.[46]

With these caveats duly noted, it seems fair to say that Etzioni (as well as other students of socialization) would identify the Family Medicine preceptorship program at Michigan State University as a predominently normative organization. The salient criteria would seem to be voluntary membership and the fact that the preceptors' function is more to introduce students to the physician's role than to inculcate a specific set of instrumental skills. On this assumption it is relevant to extrapolate several hypotheses about patterns of communication in normative organizations from the theories of Etzioni and others. There will be a fair amount of horizontal communication to complement and support the downward communication of goals. Moreover, communication gaps will be relatively less frequent than in coercive or utilitarian organizations, because status levels are less differentiated, alienation

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[46]Kendall, Patricia, "Medical Education as Social Process," a paper presented to the American Sociological Association, 1960, and cited by Etzioni, op. cit., p. 141. See also Bloom, S.W., "Sociology of Medical Education: Some Comments on the State of the Field," Milbank Memorial Fund Quarterly, 43:143-83.

is lower, and consensus is higher between leaders and lower participants.[47]

Nevertheless, confident prediction of patterns of communication behavior based upon the nature of the social group is elusive as applied to the population under study here. Bureaucratic theory (including that which takes bureaucratic concepts as touchstones) may be of limited value in the analysis of professional organizations. The presumption persists, even in the analysis of the most normative of normative organizations (e.g., ideological political organizations), that policy decisions are made at the top. In fact, professional organizations often consist of a number of groupings , each working out policy matters in their own way, each implementing their own professional values, and negotiating with designated leaders and with each other on points of stress-producing disagreement.[48]

Such a perspective suggests that certain pressures to communicate may derive from informal social structures "mediating between individuals (or task groups) and large formal organizations,"[49] and also that a relative lack of downward communication from organization leaders

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[47] Op. cit., p. 140-1.

[48] Bucher, Rue, and Joan Stelling, "Characteristics of Professional Organizations," Journal of Health and Social Behavior, 10:3-15.

[49] Merton, Robert K., Social Theory and Social Structure (Rev. Ed.) Glencoe, Ill.: The Free Press, p. 106.

may leave much potential conflict hidden or unacknowledged, thereby lessening pressures toward communication among system members and subgroups.[50]

On the other hand, Katz and Kahn assert that an assymmetry of communication needs of superiors and subordinates leads to an increase in lateral communication among subordinates.

> Horizontal exchange can be an escape valve for frustration in communicating upward and downward; and sometimes it can operate to accomplish some of the essential business of the organization.[51]

Similarly, Burns found informal "lateral communication essential to the proper functioning of the vertical system" in his study of departmental managers in a British factory.[52] Thus, "the ground at a lower level was prepared for likely action" (emanating from top levels).[53]

Still another perspective emerges from Davis' study of executives within the "Jason Company."

> Formal and informal communications systems seem to be jointly active, or jointly inactive. Where formal communication was inactive. . ., the grapevine did not rush in to fill the void. . .; instead, there simply was lack of communication.[54]

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[50] Mouzelis, Nicos P., Organization Bureaucracy: An Analysis of Modern Theories, London: Routledge and K. Paul, 1967. p. 161.

[51] Op. cit., p. 247.

[52] Burns, Tom, "The Directions of Activity and Communication in a Departmental Executive Group," Human Relations, 7:73-97, p. 96.

[53] Ibid.

[54] Davis, Keith, "Management Communication and the Grapevine," Harvard Business Review, 31:43-49, p. 45.

The same conclusion has been expressed in pithy fashion by a prominent sociologist: "If communication fails in one direction, it will fail in the others."[55]

Propinquity

Against the background of the foregoing general considerations about various pressures to communicate, somewhat more detailed attention may now be given to the "force to communicate" of particular relevance to this present study. In Chapter I, "propinquity" was defined as proximity in time or space.

Physical proximity is apparently universally acknowledged by theorists in the behavioral sciences to be a factor in determining who will talk with whom. Thus, Schein's discussion of the psychological dynamics of informal group formation in organizational settings allows for the operation of "formal factors," including physical location.[56] Homans, a sociologist and proponent of Exchange Theory, speaks of "almost inevitable interactions" occasioned by the mere fact of persons being "thrown together by physical geography."[57] Another sociologist, however, makes clear that the effect of propinquity is indirect, rather than direct.

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[55]Homans, George C., The Human Group, N.Y.: Harcourt, Brace and World, 1950. p. 462.

[56]Schein, E.H., Organizational Psychology, Englewood Cliffs, N.J.: Prentice-Hall, Inc., 1970 (Second Edition). p. 82-3.

[57]Op. cit., p. 97.

> Each social world, then, is a culture area, the boundaries of which are set neither by territory nor by formal group membership, but by the limits of effective communication.[58]

This seeming contradiction of other commentators is grounded in the point that technology has limited the effect of geographical dispersion.[59] Shibutoni does not acknowledge, however, that much of the technology remains limited by distance factors even as it is distance-limiting. Thus, the telephone, while permitting a user to free himself from gross limitations of distance factors, is still more likely to be used for local calls than long-distance calls and for low-toll, as opposed to high-toll, "long distance" calls.[60] Thus, rather than being obviated by "distance binding" technologies, propinquity factors are "merely" modified, rendered more complex and, where they are a factor (as in the present study), made less powerful as bases for confident prediction.

From the point of view of general systems theory, proximity is "a necessary but not sufficient condition for system formation."[61]

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[58]Shibutani, T., "Reference Groups as Perspectives," American Journal of Sociology, 60:562-70, 1955. p. 566.

[59]Ibid.

[60]Zipf, G.K., "Some Determinants of the Circulation of Information," American Journal of Psychology, 59:401-21, 1946.

[61]Berrien, op. cit., p. 23.

"Boundaries," defined abstractly as that which separates one system from another, have the function of filtering inputs and outputs.[62] This means that any transmission of information across a boundary entails resistance and, inevitably, some modification in or transformation of the information itself.[63] To the extent, then, that sending a message to another person at some distance entails "breaking through" system boundaries, the sending will be correspondingly more difficult, less effective and, hence, less likely of even being attempted.

The homeostatic principle,[64] that any force which disrupts a system will be countered by other forces which tend to restore it to a steady state, favors small communication loops. Smaller circuits mean quicker feedback and closure.

Size of loop, especially when system boundaries are crossed, is a major theoretical determinent of direction in communication flow and of the character of habitual patterns of interaction.[65] J.G. Miller cites many examples of the importance of physical propinquity to system structure and process, and is careful to apply this observation equally to biological and social systems.[66]

G.A. Miller applied this generalization to communication in social systems as follows:

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[62]Ibid., p. 32.

[63]Ibid., p. 22-3.

[64]Katz and Kahn, op. cit., p. 23.

[65]Ibid., p. 235.

[66]Op. cit., p. 207-8.

> When a large number of people belong to the group, it is reasonable to assume that the likelihood of messages passing from one person to another is inversely proportional to the distance between them. The greater the distance, the lower the traffic density.[67]

Miller's reasoning is supported by an array of empirical studies conducted on widely varying populations and social settings. In a study of the thirty-seven workers in an office of a large corporation, Gullahorn found that distance was the "most important factor in determining the rate of interaction between any two employees."[68] From a study in another kind of organizational center, an academic one, Lundberg, et al report similar effects of physical proximity.[69]

A number of studies have demonstrated that personal interaction among residential neighbors is largely a product of proximity. Merton studied a large housing development in New Jersey and concluded that "quite apart from other factors, sheer propinquity played a major part in determining the patterns of personal interaction."[70] Other empirical studies with findings in support of a large role for residential propinquity utilize a variety of methodologies, designs and

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[67] Language and Communication, N.Y.: McGraw-Hill, 1951. p. 262.

[68] Gullahorn, J.T., "Distance and Friendship Factors in the Gross Interaction Mix," Sociometry 15:123-34, 1952. p. 134.

[69] Lundberg, G., V. Hertzler, and L. Dickson, "Attraction Patterns in a University," Sociometry 12:158-69, 1949.

[70] Merton, Robert K., "The Social Psychology of Housing," in Dennis, W. (ed.), Current Trends in Social Psychology, Pittsburgh: University of Pittsburgh Press, 1948. p. 204-5.

particular populations.[71]

Barnlund and Harland reviewed empirical studies that support Miller's theoretical arguments about propinquity factors and concluded that:

> An inverse relationship has been found between the physical distance separating persons and the likelihood of communication between them, with interaction increasing as distance decreases, unless there are physical barriers that intervene . . .[72]

It must be acknowledged that the last phrase of this otherwise forceful generalization is, on reflection, a serious limitation of generalizability. The situation under consideration by "office landscapers" or architects is quite different than the one under investigation in the present study. Support for the generalizations reported here appears to be quite sufficient to allow confident prediction in the case, let us say, of full-time university faculty whose offices are located in a given wing of an academic building. However, when the population of interest is widely scattered in a variety of types and arrangements of primary work places, an exploratory investigation seems

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[71]Powell, R.M., "Sociometric Analysis of Informal Groups -- Their Structure and Function in Two Contrasting Communities," Sociometry 15:367-00, 1952; Caplow, T., and R. Forman, "Neighborhood Interaction in a Homeogeneous Community," American Sociological Review, 15:357-66, 1950; Festinger, L., S. Schacter and K. Back, Social Pressures in Informal Groups: A Study of Human Factors in Housing, Stanford, California: Stanford University Press, 1963; Blake, R., C. Rhead, B. Wedge and J. Morton, "Housing Architecture and Social Interaction," Sociometry, 19:133-9, 1956.

[72]Barnlund and Harland, "Propinquity and Prestige as Determinants of Communication Networks, " Sociometry, 26: 467-79, 1963, p. 468.

more prudent than an experimental design.

It is interesting to note that the effects of propinquity upon informal communication are often assumed by medical educators and other physicians in their arguments favoring group practice. Thus, Boan cites as the principal advantage of group practice the "curbstone consulting" which it facilitates.[73] Young asserts that group practice leads to teamwork and "stimulating professional company."[74] It has been observed that changes in the nature of medical care, particularly specialization, will increasingly make inter-physician communication common among solo practitioners.[75] This observation does not constitute a contradiction of the generalizations about group practice. In any case, as common as such beliefs may be, empirical studies of these assertions apparently have yet to be published.

By contrast, the other primary work place of physicians has received a goodly amount of attention. There are many studies of physician behavior in hospitals. Wenrick, et al, mapped sociometric interactions of staff physicians in four midwestern hospitals on the basis of informal case discussions, formal consultations, and social

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[73] Boan, J.A., Group Practice, Toronto: Royal Commission on Health Services, 1966. p. 14.

[74] Op. cit., p. 932.

[75] Wolf, Stewart G., and Ward Darley, Medical Education and Practice, Evanston, Ill.: American Association of Medical Colleges, 1965. p. 72-3.

interactions.[76] The physicians most frequently nominated were then interviewed to determine how they differed as a group from their colleagues. Among the findings were that the "informal educators" tend to spend more time at their hospitals, serve on more hospital committees and belong to more professional associations than their colleagues. Moreover, thirty-two of the thirty-nine physicians so identified were either internists or surgeons, and not one was a general practitioner.[77] The authors do not report the percentages of specialists in their total population.

Coleman, Katz and Menzel report on a series of studies using similar techniques to trace the flow of innovation information and adoption of new drugs.[78] Their principal finding was that interpersonal relations among physicians seemed to be the most important factor in the adoption of innovation. Further, they identified both hospitals[79] and shared offices[80] as the primary physical contexts in which such informal communication took place.

A 1969 study conducted by telephone interviews among full-time faculty of a medical school sought to discover the relative importance

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[76]Wenrick, J.W., F.C. Mann, W.C. Morris and A.J. Reilly, "Informal Educators for Practicing Physicians," Journal of Medical Education, 46:299-305, 1971.

[77]Ibid., p. 203.

[78]Coleman, James S., Elihu Katz and Herbert Menzel, Medical Innovation: A Diffusion Study, N.Y.: Bobbs-Merrill Co., Inc., 1966.

[79]Ibid., p. 145.

[80]Ibid., p. 156.

of different sources for information regarding changes in medical education. Again, face-to-face, personal contact was the most frequently cited means of learning about new developments.[81]

There is evidence in a study of a research center at a university that there is little strictly social, as opposed to business, communication among professional colleagues and that it has little effect on the perceptions of each other by participants. The investigator concludes that work-related communication tends to influence social communication, rather than vice-versa.[82] The implication seems to be that research designs for the study of inter-member communication in professional groups may omit social relations as a separate variable without much risk of losing significant information.

Lastly, from a theoretical, management point of view, March and Simon identify sheer propinquity ("exposure to contact") as one of three factors affecting the frequency of interaction in a group.[83] Further, in terms that echo Miller's systems theory propositions, they hypothesize that the greater the communication efficiency, the greater will be the communication channel usage.[84]

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[81]Saul, Ezra V., and Suzanne Bryder, "One Faculty's Sources of Information Regarding Changes in Medical Education," Journal of Medical Education, 44:1091-4, 1969. p. 1093.

[82]Smith, Alfred G., Communications and Status: The Dynamics of a Research Center, Eugene, Oregon: University of Oregon Press,1966. p.39-45.

[83]March, James G., and Herbert Simon, Organizations, N.Y.: John Wiley and Sons, 1958. p. 68-71.

[84]Ibid., p. 167-9.

Attitudes and Perceptions

> Organizations so structured that members can deal realistically and effectively with their tasks will provide powerful sources of social and psychological satisfaction.[85]

Physical decentralization in an organization, according to Berelson and Steiner, tends to be associated with "more different and often more discordant understandings and points of view" among organization members and, also, with greater toleration of such differences of perception.[86] This assertion, based on an extensive review of sociological research, is consistent with the medical school studies of Merton and his associates. They speak of a "phenomenon of observability" which operates among physicians practicing in groups. Working under the close scrutiny of their medical peers, physicians in group practice tend to be more "conducive to ready conformity" with whatever professional norms may be current.[87]

Bloom found that volunteer clinical faculty perceived problems of communication as a cause of serious problems far less often that did full-time faculty.[88] Berelson and Steiner have written that members most closely identified with their organization, while more likely to conform to its norms, are also more likely to criticize, though their

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[85] Lawrence, Paul R., and Jay W. Lorsch, Organization and Environment, Homewood, Ill.: Richard D. Irwin, Inc., 1969. p. 17.

[86] Berelson, Bernard, and Gary A. Steiner, Human Behavior: An Inventory of Scientific Findings, N.Y.: Harcourt, Brace and World, Inc.

[87] Op. cit., p. 77.

[88] Bloom, Samuel W., "The Medical School as a Social System," Milbank Memorial Fund Quarterly, Vol. 49, No. 2, April 1971. p. 130-1.

criticism tends to deal with means, rather than ends.[89]

Katz and Kahn conclude that the information needs of lower level organization members can be at least partially satisfied by horizontal (peer) communication in the relative absence of regular and reliable communication from the leadership.[90] On the basis of this claim, it seems reasonable to expect reported levels of satisfaction with all work-related information to be almost as high for system members who enjoy high levels of horizontal (peer) communication as for those who have better "pipelines" to the top echelons and, hence, more access to "authoritative" information.

This reasoning would be supported by the work of Hovland and Weiss who have demonstrated that the so-called "sleeper effect" in information credibility depends upon the more rapid decay over time of the effects of the source than of the content.[91] On the other hand, Cartwright cautions that more research is needed to determine whether the effect of source decays when the source and the receiver maintain a concrete relationship.[92]

Farace and Connelly studied the attitudes toward available work-related information and perceptions of the information system of employees in a large commercial establishment who had been categorized

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[89] Op. cit., p. 379.

[90] Op. cit., p. 243-5.

[91] Hovland, C.I., and W. Weiss, "The Influence of Source Credibility on Communication Effectiveness," Public Opinion Quarterly 15:135-50, 1952.

[92] Cartwright, Darwin, "Power: A Neglected Variable in Social Psychology" in Bennis, Warren G., K.D. Benne and R. Chin, The Planning of Change, N.Y.: Holt, Rinehart and Winston, 1966. p. 416.

as "work satisfied" or "work dissatisfied" on the basis of Frederick Herzberg's theory of work satisfaction. "Work satisfied" employees reported more timely attention to their work problems by supervisors (production information), more favorable assessments of information about plans and policies (innovation information), and more attention to personal, as well as work, problems by supervisors (maintenance communication).[93]

Support for Mouzelis' dictum that "bad communication does not necessarily lead to conflict"[94] may be drawn from Habbe's findings in a questionnaire survey of workers in two industrial plants. In the plant in which fifty-five percent of the workers agreed that the company "does a good job of telling you what's going on and what's being planned" there was a "wish to know more" than in the other plant where only eighteen percent of the workers felt that their company was communicating adequately to its employees. Habbe's conclusion is that "supplying more information to employees creates the desire for more information."[95] It would seem that a respondent's "need to know" may be both satisfied by the leaders' messages and further stimulated by them.

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[93] Op, cit., p. 11-16.

[94] Op. cit., p. 161.

[95] Habbe, S., "Communicating with Employees," Studies in Personnel Policy, No. 129. N.Y.: National Industrial Conference Board, 1952, p. 39, cited by Guetzkow, Harold, "Communications in Organizations," in March, James G. (ed.) Handbook of Organizations, Rand McNally and Co., 1965, p. 540.

Chapter III

METHODOLOGY

This chapter outlines the methods used to investigate the problem described in Chapter I. First, the population utilized is described. Next, an overview of the contents of the questionnaire is provided and the means of administering it is summarized.

The process followed in developing the final questionnaire is described next. Lastly, the methods used to analyze the questionnaire data are described.

Population

The present investigation was conducted by surveying volunteer clinical faculty in the Department of Family Medicine of the College of Osteopathic Medicine at Michigan State University. Members of this particular set of clinical faculty are all appointed by the University's Board of Trustees at the ranks of Clinical Assistant Professor or Clinical Associate Professor.

With a few exceptions (all of which were excluded from the study), these preceptors are engaged in the private practice of comprehensive, primary care to entire families. All have membership on the staff of an accredited general hospital.

This population is scattered over much of the southern half of Michigan's lower peninsula, except that few are located in Detroit or

its immediate suburbs. Preceptors practice in both urban-suburban and rural-small town settings. They are staff members of hospitals which are both large and small, exclusively osteopathic and mixed D.O.-M.D. They practice alone or in offices shared with other physicians. Some have practices almost exclusively office-based and others spend many hours each week treating hospitalized patients. Some do general surgery and obstetrics; others refer patients requiring such care to specialists. While all are members of the statewide professional organization and nearly all are members of constituent district chapters, they vary widely in their relative activity in these associations.

Students are assigned singly to spend one afternoon each week in a preceptor's office for a period of five weeks. Initial assignment is made part way through the first year when students have acquired only the most rudimentary skills in the diagnosis of various pathologies, but are already engaged in intensive classroom study of physical diagnosis, history taking, interviewing and other basic clinical skills. The College's integrated curriculum is founded in part upon the educational principle of early reinforcement of didactic learnings in the actual setting in which they will be ultimately utilized. Additionally, it is argued, early exposure to the setting, patient population and role models of family practice affords beginning students a kind of "reality test" for their professional aspirations and concepts of "what it is like to be a doctor." Thus preceptors are expected to provide an experiential introduction to the person and work of the family physician, as well as some supervised practice in the exercise of newly acquired skills involving physical examination and doctor-patient interaction.

There were eighty-eight preceptors at the time of the survey. Of these, four were excluded from the study because they practiced in the University's Olin (Student) Health Center. Another three were excluded on grounds that, in addition to being preceptors, they had classroom teaching responsibilities on the campus and were, thus, strikingly unlike other volunteer clinical faculty at Michigan State University or elsewhere. Hence, the population actually surveyed numbered eighty-one.

Questionnaire Contents

The questionnaire used to gather data for this study contains items designed to elicit information corresponding with the three sets of variables outlined in Chapter I (see Figure 1.2). Thus, there are questions about the various propinquity variables (solo or group practice, distance from campus, time spent in hospitals, etc.). Secondly, there are questions about informal communication with other physicians (frequency, duration, initiation and content-function). The third general set of questions was designed to elicit attitudes toward available role-related information, perceptions of the program's information distribution system and the relative saliency or value of "being a preceptor."

Another small set of questions was included as "controls." Three variables outside the design of the study have a potential for confounding or distorting the data, particularly as regards perceptions of the adequacy of role-related information and the information distribution system. They are:

--length of time in the preceptorship program

--visit(s) to the preceptor's office by an official of the College

--attendance of the preceptors at meetings for preceptors on the campus.

The investigator believed that these variables are not systematically related to the basic propinquity variables. Nevertheless, measures were taken on these potentially confounding variables in an attempt to safeguard the validity of the findings.

The questionnaire itself is reproduced as an appendix to this dissertation.

Questionnaire Administration

The questionnaire was administered by mail, together with a self-addressed return envelope. In an effort to assure a large percentage of returns, a cover letter signed by the chairman of the Department of Family Medicine introduced the project and the investigator to the preceptors and appealed for their cooperation.

Telephone calls to the offices of the subjects who were slow to respond were made by the investigator two weeks after mailing.

Design of the Questionnaire

Development of the questionnaire proceeded through several stages as follows:

Full-time faculty "brain-storming" session. Six members of the full-time faculty of the Department of Family Medicine met with the investigator to "brain-storm" factors which they felt might be associated with high levels of informal communication among preceptors and with positive attitudes toward the program and role-related information. At the time of the session, five of the six faculty participants were newly arrived at the University from the private practice of comprehensive

family medicine.

Full-time faculty questionnaire. Eight physician members of the Department were then surveyed to produce data from their own recent experience as family practitioners regarding the principal dimensions (variable groups) of the study. This step yielded helpful guidance both for the design of the project (definition and selection of variables) and the shaping of questionnaire items.

Open-ended interviews with preceptors. Face-to-face interviews of forty-five minutes to one hour in length were conducted with ten subjects selected from the population of preceptors. Interviewees were selected at random from each of four general localities chosen to correspond with the propinquity factors which could be determined objectively by the investigator (solo vs. group practice, urban vs. rural-small town and proximate to campus vs. remote from campus). Of particular significance in this stage were the perceptions and verbal formulations of the interviewees which helped operationalize previously indistinct variables (e.g., proximity to campus).

Models from similar study. The wording of many specific items was guided by models available in a study of communication practices in a large, complex organization.[1]

Review of final rough draft. The adequacy of the items emerging from the foregoing stages was further assured by submitting them to the critique of four physician-faculty members and an experienced researcher

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[1]Berlo, D.K., R.V. Farace, R.A. Connelly and H.M. Russell, "Relationships Between Supervisor-Subordinate Communication Practices and Employee Turnover, Attendance and Performance Evaluations." Mimeographed, Department of Communication, Michigan State University, 1971.

in organizational communication.

Follow-up interviews. As a final check upon the validity of the questionnaire, follow-up interviews were held with five of the respondents. The principal objective in these interviews was to ascertain the degree to which respondents in fact interpreted items in the manner intended by the investigator.

Procedure for Analysis

Data produced by the questionnaire survey were analyzed by means of direct comparison of appropriate pairs of variables. Comparisons between two variables, both of which had categorical values, produced contingency tables with frequencies and percentages in the several cells and totals in both dimensions. Comparisons between two variables, one of which had categorical values and the other of which had continuous values, produced means and standard deviations for each category and for the total population.

These procedures were accomplished by utilizing two computer programs. For comparisons of two variables both of which had categorical values, the program used was ACT (version 3), on file at the Computer Institute for Social Science Research (CISSR) at Michigan State University. The ACT program generates contingency tables with both frequencies and percentages. For comparisons of two variables, one of which had categorical values and the other or which had continuous values, the program used was the MSU STAT System, Version 3.05B. Both programs are written for Michigan State University's CDC 6500 computer.

In general, the choice of variables for pairing and comparison followed from the principal purposes of the present investigation as set forth in Chapter I. That is, propinquity variables were compared with informal communication variables and informal communication variables were compared with perception-attitude variables. Additionally, "control" variables were compared with the propinquity variables, as mandated by the design of the study.

More specific explanations of and rationale for the choice of particular measures for pairing, in instances where several related measures were available, may be found in the text accompanying the presentation and discussion of data in Chapters IV and V.

In coding questionnaire responses, all uncompleted items were tabulated separately ("no response") and percentages calculated for them. This procedure was followed on the assumption that a respondent's failure to complete an item may be a significant, though denotatively indistinct, response and should not be "lost" in percentages calculated only on completed items. Also coded as "no response" were the few responses spoiled by respondents' failure to comply with instructions.

A number of items listed response options which read "Other (please specify): _____." In those instances in which respondents utilized this option, the investigator coded their responses in the "standard" categories whenever they seemed clearly to fit.

Summary

The present investigation was conducted by a mailed questionnaire survey of 81 volunteer clinical faculty (preceptors) in the Department of Family Medicine, College of Osteopathic Medicine, Michigan

State University. All subjects are in the private practice of comprehensive, family medicine, are staff physicians in accredited general hospitals, and are members of osteopathic professional associations. All have similar responsibilities toward similar students. They differ on other formal characteristics of interest in this study, such as the geographical and associative aspects of their private practice settings.

The questionnaire was developed in a series of steps utilizing full-time faculty members recently engaged in private practice, models drawn from analogous studies, and open-ended interviews with a subset of the population. Several follow-up interviews were conducted as a partial check upon the questionnaire's validity.

Analysis of the survey data involved the generation by computer of a large number of tables, each involving the direct comparison of two variables. The majority of the variable pairings followed directly from the purposes of the study as stipulated in Chapter I, namely the exploration of possible associations between propinquity factors and informal communication factors, and between informal communication factors and perception-attitude factors.

Chapter IV

ANALYSIS: PROPINQUITY AND INFORMAL COMMUNICATION

Questionnaires were returned by 70 (86%) of the 81 preceptors in the population utilized for the study. One respondent returned his partially completed questionnaire with a letter explaining that he was so new to the program that he found it impossible to respond to many items. When inspection revealed that many more than half of the informal communications and attitude questions were unanswered, that questionnaire was eliminated. Thus, 69 respondents, or 85% of those surveyed, were finally included in the analysis.

Profile on Propinquity and "Control" Variables

Practice Setting. Totals for the respondents show that 44 of the 69, or 64%, are in group practice. One respondent noted that he and the physician with whom he shared an office were never present in the office at the same time. Because the principal purpose of this study is to investigate relationships between physical proximity and informal peer communication, this respondent was recorded as a solo practitioner.

Those respondents in group practice were asked to indicate how many of the other physicians with whom they shared an office were also preceptors. Sixteen had no other preceptor practicing in their office, 16 had one other, 8 had two others and four had three or more. Including the solo practitioners, 59% of the preceptors have no other preceptor

sharing their office. Of those who have at least one other preceptor "close at hand" in their offices through most of each typical working day, 23% have one other and 18% have two or more others.

Forty-two (61%) of the preceptors identified the communities in which their offices are located as "urban-suburban," while 27 (39%) judged their practice settings to be "rural-small town."

Eighty-one percent say it takes them more than one-half hour to drive to the University campus.

Percentages for all the values of these practice setting variables are displayed in Table 4.1.

Activity in Hospitals. Respondents vary widely in the extent to which their practice includes hospital visitation of patients. Asked, "On the average, how much time do you spend in the hospital each week when you go there for the purpose of seeing patients?" they report as few as 2.5 hours and as many as 27.5 hours. (Responses of "2-3 hours per week" were recorded as 2.5 hours, etc.) The mean for all respondents was 12.7 hours per week, with a standard deviation of 5.48.

Two measures were taken on another kind of activity in hospitals, namely involvement in policy formulation and operational supervision. First the preceptors were asked, "Relative to other members of your (principal) hospital's staff, would you describe yourself as 'more active than most' in the affairs of the hospital?" Forty-three percent answered, "yes -- more active." The same percentage judged themselves to be "about average" and the rest (14%) said they were "less active" than most. The preceptors were then asked to estimate the number of

Table 4.1

Profile of Preceptor Population: Practice Setting Variables

PRACTICE PARTNERS		
solo practice		36%
group practice		64%
--2-doctor group	38%	
--3-doctor group	13%	
--4-doctor group	13%	
OTHER PRECEPTORS IN PRACTICE		
no other		59%
--solo	36%	
--group	23%	
some other		41%
--one other	23%	
--two others	12%	
--three or more	6%	
SIZE OF COMMUNITY		
urban - suburban		61%
rural - small town		39%
PROXIMITY TO CAMPUS (driving time in good weather)		
1/2 hour or less		19%
more than 1/2 hour		81%

hours per month they spent in hospital board or committee meetings, excluding regular meetings for the entire staff. Answers ranged from none to 18 hours. The mean was 5.4 hours per average month, with a standard deviation of 3.60.

Table 4.2

Profile of Preceptor Population: Activity in Hospitals

TIME SPENT IN HOSPITAL FOR PURPOSE OF VISITING PATIENTS

range	2.5-27.5 hrs./wk.
mean	12.7 hrs./wk.
standard deviation	5.47

ACTIVITY IN HOSPITAL AFFAIRS (relative to other members of staff)

more active than most	43%
about average	43%
less active than most	13%

TIME SPENT IN HOSPITAL BOARD OR COMMITTEE MEETINGS

range	0-18 hrs./mo.
mean	5.4 hrs./mo.
standard deviation	3.61

Because the self-judgments about relative "activity" and the reported hours spent in hospital board and committee meetings were intended as complementary measures on the same dimension, it is interesting to note their relationship. The results of this comparison are shown in Table 4.3.

Table 4.3

Hours in Hospital Meetings By Category of Self-judged Activity

Relative activity	Hours Spent in Board and Committee Meetings	
	Mean	Stan. Dev.
more active than most	7.4	3.82
about average	4.3	2.65
less active than most	2.4	1.89

It will be seen that there is a regular and positive relationship between these two measures. This result indicates that, in subsequent comparisons with communication variables, similar findings may be expected for these two measures on what is essentially one variable (activity in hospital affairs).

Activity in Professional Associations. The respondents vary rather widely in their relative activity in the principal professional associations. Measures were taken on both district (local) and statewide osteopathic associations. The most frequent response for both items was to the option "attend most meetings, but little or no committee work." The results are shown in Table 4.4.

Table 4.4

Profile of Preceptor Population: Activity in Associations

	District	State
don't attend	16%	22%
attend, but little or no committee work	38%	57%
attend, serve on committees	29%	17%
officer or chairman of major committee	17%	4%

That respondents tend to be mutually active or inactive at both district and state levels is demonstrated by Table 4.5.

Table 4.5

Comparison of Activity in Professional Associations

Category of Activity in State Association	District Associations			
	don't attend	attend no cmte.	cmte. work	officer chm.
don't attend (n=11)	53%	8%	0%	0%
attend, no cmte. (n=26)	27%	51%	8%	33%
attend, cmte. work (n=20)	20%	28%	50%	0%
officer or chairman (n=13)	0%	13%	42%	67%
	n=15	n=39	n=12	n=3

"Control" Variables. Three measures were taken on factors outside the design of the study (neither propinquity variables, informal communications variables nor perception-attitude variables). These factors were identified as having a potential for confounding or distorting the findings, particularly as regards associations between propinquity factors and perceptions of the adequacy of role-related information and of the information distribution system. Although the investigator did not believe that these variables were systematically related to the basic propinquity variables, measures were taken on each of them as a check on this belief. The three "control" factors are:

--length of time in the preceptorship program

--visit(s) to the preceptor's office by an official of the college

--attendance of the preceptors at meetings for preceptors on the campus.

Though the purpose for including these measures prompts their being labelled "control" variables, it will be seen that they describe the population in terms of individuals' formal participation in the preceptorship program.

A profile of the population on "control" factors is shown in Table 4.6. In general terms, 71% have been preceptors for more than one year and only 10% for less than six months. One out of every four preceptors has been visited in his office by an official of the college. Slightly more than half of the respondents have attended at least one of the meetings for preceptors held at the University campus.

Table 4.6

Profile of Preceptor Population: "Control" Variables

LENGTH OF TIME IN PRECEPTOR PROGRAM	
less than 6 months	10%
6 - 12 months	20%
more than one year	71%
VISITS TO PRECEPTOR'S OFFICE BY COLLEGE OFFICIAL	
no visits	74%
one visit	10%
two visits	12%
three or more	4%
ATTENDANCE AT MEETINGS FOR PRECEPTORS	
attended no meetings	46%
attended one meeting	20%
attended two meetings	23%
attended three or more	10%

Note: In this and many subsequent tables, percentage figures do not always add to 100%. This is due to rounding error.

Comparison of Propinquity and "Control" Factors

It is possible that the first preceptors in this still relatively new program were selected from among physicians in group practice and that, later, the selection process was "biased" in the direction of physicians in solo practice. It is also conceivable that early preceptors were appointed from those closest at hand, with the College obliged to look farther afield as the program grew and more preceptors were needed. To determine whether such relationships exist, a set of contingency tables was generated.

Table 4.7 reveals that there are relationships between length of time in the preceptorship program and the several propinquity variables. The proportion of subjects in group practice is larger for those who have been in the program for more than one year than it is for those who have been in the program for one year or less. The proportion of subjects whose offices are in urban areas is larger for those who have been in the program for more than one year than it is for those who have been in the program for one year or less. Although the differences are not as large as those in the latter two comparisons, the proportion of preceptors whose offices are more than one-half hour's driving time from the campus is larger for those who have been in the program for more than one year than it is for those who have been in the program for one year or less. In no case are the differences so large as to constitute a reversal of proportions between the respective categories of propinquity factors or a deviation or more than four percent from the means for the entire population.

Table 5.6 also shows comparisons of the same set of three propinquity variables with the number of times an official of the College

Table 4.7

"Control" Variables by Propinquity Variables

	practice partners		size of comm.		proximity	
	solo	group	urban	rural	1/2 hr. or less	more than 1/2 hr.
LENGTH OF TIME IN PROGRAM						
1 year or less	43%	57%	52%	48%	24%	76%
more than 1 year	33%	67%	65%	35%	17%	83%
VISITS FROM COLLEGE OFFICIALS						
no visits	37%	63%	69%	31%	18%	82%
1 or more visits	33%	67%	39%	61%	22%	78%
ATTENDANCE AT MEETINGS						
no meetings	34%	66%	47%	53%	19%	81%
one meeting	43%	57%	64%	36%	14%	86%
2 or more meetings	35%	65%	72%	28%	22%	78%
totals	36%	64%	61%	39%	19%	81%

visited respondents' offices. The preceptors were asked for the number of visits and their responses coded in four categories (0, 1, 2, 3, or more). However, because so few preceptors had any visits (18), a more intelligible display results from collapsing the categories into just two categories, "no visits" and "one or more visits." No relationship is apparent between number of visits and either the solo vs. group variable or the proximity variable. On the other hand, whereas rural-small town preceptors comprise 39% of the total population, they account for 61% of all visits to preceptors' offices by College officials.

The third "control" or formal participation variable is attendance at meetings for preceptors. According to Table 4.7, solo and group practitioners attended "no meetings" and "two or more meetings" in numbers proportionate to their distribution in the entire population. Solo practitioners are somewhat overrepresented in the category of those who attended one meeting, a finding consistent with their similar disproportion among preceptors newer to the program. (It is apparent from data presented in the following pages that length of time in the program is clearly associated with attendance at meetings.)

On the other hand, rural-small town preceptors are overrepresented among those who had attended no meetings and underrepresented among those who had attended two or more meetings. A slight majority of those reporting that they attended no meetings are preceptors practicing in rural areas or small towns, though such preceptors comprise 39% of the total population. The same finding is illustrated by analyzing the same data from another perspective. Sixty-four percent of all urban-suburban preceptors, as opposed to 37% of all rural-small town preceptors, attended any meetings. Again, 43% of urban-suburban

preceptors, as opposed to 19% of rural-small town preceptors, attended two or more meetings.

Lastly, with respect to proximity to campus, the proportions in which those closer at hand attended meetings for preceptors is not significantly different from their proportions in the population as a whole.

It is interesting to note, in this connection, that the preceptors from rural and small town areas do not necessarily have farther to drive when they come to the College's on-campus facilities than do preceptors from urban-suburban areas. The proportion of all respondents who must drive more than one half hour is exactly the same (19%) for both groups. However, it must be acknowledged that, had the "cutting point" for the proximity variables been set higher (e.g. one hour driving time), the proportions may have been different.

In summary, then, comparisons were made of the three "control" variables with each of three propinquity variables. The purpose of these comparisons was to discover whether distribution of subjects on the propinquity variables for each level of the "control" variables was disproportional to their distribution in the population as a whole. Several instances of such disproportion were revealed. The size of community (urban vs.rural) variable appears to be associated with all three "control" variables. Length of time in the program (a "control" variable) appears to be associated with the three propinquity variables with which it was compared.

Thus, rural-small town preceptors were more likely to have been in the program a shorter time and to have attended fewer meetings for

preceptors on the campus, but also were much more likely to have been favored by College officials in terms of site visits to their offices. Those preceptors who have been in the program for more than one year are somewhat more likely to be in group practice, to practice in urban-suburban communities and (to a lesser extent) to practice at some distance from the campus.

These findings of relationships between "control" variables and propinquity variables raise questions about relationships among the "control" variables themselves, and about relationships between the control variables and informal communication behavior.

Table 4.8

Comparisons of "Control" Variables

	length of time in program		
	less than 6 mo.	6-12 mos.	more than one year
VISITS FROM COLLEGE OFFICIALS			
no visits	71%	71%	75%
one visit	14%	7%	10%
2 or more visits	14%	21%	15%
ATTENDANCE AT MEETINGS			
no meetings	86%	64%	35%
one meeting	14%	21%	21%
2 or more meetings	0%	14%	44%
totals	10%	20%	70%

Data in Table 4.8 suggest no patterns beyond what one might anticipate from study of Table 4.7. Those who have more recently come into the program (within the last year) have been visited somewhat more often by College officials. Also, there is a regular and progressive relationship between length of time in the program and attendance at meetings.

Given the relationships between "control" variables and some propinquity variables, and since the central task of this chapter is to explore relationships between propinquity and informal communication behavior, some analysis of comparisons between the "control" variables and informal communication behavior is desirable. The informal communication variable labelled "overall frequency" is utilized for purposes of these comparisons. The choice of a single "representative" measure seems justified on two grounds. First, it is the most "general" informal communication measure in the study, in the sense that it does not relate to behavior occuring in a specified location. Second, it is the informal communication measure most often used for subsequent comparisons in both this and the following chapter. Table 4.9 presents comparisons between overall frequency and the three "control" variables.

Relative to their proportion in the total population, preceptors who have been in the program for one year or less are overrepresented among those who say they "almost never" talk with other physicians about the preceptorship program. However, among those who do have such communication, preceptors relatively new to the program talk with other physicians almost daily in a proportion exceeding their proportion in the population and communicate less frequently in a proportion far lower than their proportion in the population.

Preceptors who have been visited in their offices by College officials are proportionately underrepresented among those who talk relatively infrequently ("almost never" or "once a month"), proportionately represented among those talk about "once a week" and overrepresented among those who talk "almost daily." The general pattern of distributions is very similar to that for response with respect to

Table 4.9

Overall Frequency by Control Factors

Question: On the average, during periods when you have a student, how frequently do you talk with other physicians about some aspect of the preceptorship program?

	almost never	once a mo.	once a wk.	almost daily	totals
LENGTH OF TIME IN PROGRAM					
1 yr. or less	50%	9%	15%	44%	30%
more than 1 yr.	50%	90%	85%	56%	70%
VISITS FROM COLLEGE OFFICIALS					
no visits	80%	82%	77%	33%	74%
1 or more visits	20%	18%	23%	67%	26%
ATTENDANCE AT MEETINGS					
no meetings	55%	73%	27%	56%	46%
1 meeting	5%	9%	38%	11%	20%
2 or more meetings	40%	18%	34%	33%	33%

length of time in the program, an observation consistant with the previously noted relationship between these two "control" variables.

With respect to the comparison between overall frequency and attendance at meetings, Table 4.9 shows a virtually identical percentage distribution between those who have attended no meetings and those who have attended at least one meeting for preceptors at both extremes of the overall frequency dimension. Combined responses for the "once a month" and "once a week" category yield percentages closer to distributions in the total population (41% attending no meetings and 59% attending at least one meeting).

In sum, analysis of comparisons between "control" variables and overall frequency reveals that those preceptors who are relatively new to the program and preceptors who have had visits by College officials tend to communicate more frequently than their fellow preceptors. Moreover, it is rural-small town preceptors who have tended to join the program more recently and to have been visited by representatives of the College. These associations, particularly, must be born in mind when assessing the legitimacy of inferences from this study.

The remainder of the chapter is devoted to analysis of contingency tables generated to compare propinquity variables and informal communication variables. Again, the propinquity variables are:

--Practice partners
  --solo vs. group practice
  --number of other physicians in the group
--Number of other preceptors in group
--Size of community (urban-suburban vs. rural-small town)
--Proximity to the campus (1/2 hour or less driving time in good weather vs. more than 1/2 hour driving time)
--Activity in hospitals and associations.

Solo and Group Practice

Frequency. The principle communication behavior variable to be compared with the solo vs. group and the group size variables is, of course, frequency of work-related conversations in the office or on the telephone. However, it is important to simultaneously consider data about frequency of interchange in the other settings in which physicians come together. In this way, one may investigate the possibility that frequency measures for different conversational contexts merely cancel each other out. To this end, the solo vs. group variable was compared also with communication frequency during patient visitation in the hospital, during hospital meetings and during professional association meetings, as well as with a general frequency variable. The results of these multiple comparisons are summarized in Table 4.10.

Analysis of the comparison of in-office peer communication with the solo-group variable reveals that 45% of preceptors practicing in groups talk with other physicians about the preceptor program at least once a month while in their offices, as opposed to 28% of preceptors in solo practice. The virtually equal percentages for those reporting "more than once a week" conversations must be treated with caution, due to the fact that these percentages represent only two subjects in each column. It will be seen that combination of the last two rows reveals that 12% of solo practitioners and 20% for group practitioners have such conversations in their offices weekly or more often.

For the second frequency variable included in Table 4.10, the percentages reveal that, while in the hospital to visit patients, solo and group practitioners behave almost exactly the same with respect to peer communication about the preceptor program.

Table 4.10

Solo and Group Practice According to Frequency

OFFICE. Question: In your office or on your telephone, about how frequently do you usually talk with other physicians about the preceptorship program?

	Solo	Group
almost never	72%	55%
once a month	16%	25%
once a week	4%	11%
more than once a week	8%	9%

HOSPITAL ROUNDS. Question: In the past month, can you recall having any conversations with other physicians about the preceptorship program while you were in the hospital to see patients?

	Solo	Group
no	44%	45%
yes, once or twice	52%	50%
yes, three or more times	4%	5%

HOSPITAL MEETINGS. Question: At hospital staff or committee meetings, how frequently do you talk with anyone about the preceptor program?

	Solo	Group
almost never	75%	75%
once a month	20%	16%
more than once a month	4%	9%

ASSOCIATIONS. Question: Before or after osteopathic association meetings, how frequently do you talk with anyone about the preceptorship program?

	Solo	Group
almost never	64%	66%
once every 3-4 meetings	20%	16%
at least once every meeting	8%	16%
(no response)	(8%)	(2%)

Table 4.10 (cont'd.)

OVERALL. Question: On the average, during periods when you have a student, how frequently do you talk with other physicians about the preceptorship program?

	Solo	Group
almost never	36%	25%
once a month	20%	14%
once a week	32%	41%
almost daily	8%	16%
(no response)	(4%)	(5%)

One of every four preceptors in either group reported utilizing hospital staff or committee meetings as opportunity for frequent conversations with other physicians. Of those who did, a higher percentage of preceptors in group practice report that such conversations occur more than once a month.

Similarly, with respect to interchange about the preceptorship program in the course of professional association meetings, the percentage of those reporting that they "almost never" have such conversations is virtually equal for the two groups. Once again, a higher percentage of the preceptors in group practice record responses in the category representing the highest frequency of communication.

The last communication frequency variable shown in Table 4.10 is an overall or general variable, not referring to behavior in a particular setting or social context. Moreover, questionnaire items emphasized that subjects were to respond in terms of communication frequency during periods when they actually had a student coming to their office. Thus, the rates are predictably lower for those saying they "almost never" talk with other physicians about some aspect of the program. The distribution of responses over the four categories of this communication frequency variable is consistent with the results of the other frequency measures. The "no" and "almost never" responses on the foregoing variables were virtually equal in the two groups, except for the in-office frequency variable. A roughly similar percentage spread exists between the in-office frequency and the overall frequency variables in the "almost never" category. Similarly, the larger

percentages of group practice preceptors reporting frequent communication on the overall variable is consistent with responses on the other context-specific variables.

A second kind of question was put to the subjects in an effort to further explore possible associations between propinquity variables and informal communication about their role as preceptors. This question was:

> Where do you most frequently have conversations with other physicians about the College or the preceptor program? (Please place a "1" by the most frequent location and a "2" by the second most frequent location.)

Responses to this question are shown in the following table.

Table 4.11

Solo and Group Practice By Location of Most Frequent Conversations

	most frequent		2nd most frequent	
	solo	group	solo	group
in office or on phone	12%	48%	16%	23%
in hospital	52%	36%	16%	39%
at association meetings	16%	2%	24%	18%
at College's campus	8%	2%	4%	0%
other	4%	2%	8%	2%
(no response)	(8%)	(9%)	(32%)	(18%)

The table shows clearly a pattern consistent with the data analyzed above. Preceptors who share an office with other physicians report that their office is the most frequent site of conversations about the College or the preceptorship program to a degtee far in excess of that reported by preceptors practicing alone (48%, as opposed to 12%). The dominant first choice of solo practitioners and the clear second choice of group practitioners is the hospital. Most of those who

recorded responses in the "other" category wrote in "none" or put a string of zeros next to the response options. One respondent, however, reported social gatherings as his second most frequent place of conversation. The disproportionately large percentage of solo practitioners who failed to record a second most frequent location may mean that they, more than those in group practice, could not as readily think of a second location where they had a noteworthy number of conversations about the preceptorship program.

Function. Subjects were asked, "When you talk about the preceptorship program with other physicians in your office or on your telephone, what do you most frequently talk about?" Respondents could choose among five response options:

--clarifying what the College expects

--general topics, sharing experiences

--finding better ways to do our job

--other (please specify):_____

--don't have such conversations

The first three of these response options serve as the operational definitions of the three levels of the function variable: Production, Maintenance, and Innovation. The same wording was used consistently each time function measures were taken throughout the questionnaire. In every case, on this and each other function measure, responses to "other" could be fit into one of the three function categories.

Table 4.12

Solo and Group Practice By Function of Office Communication

	solo	group
production	12%	14%
maintenance	28%	55%
innovation	20%	9%
no such conversations	32%	23%
(no response)	(8%)	(6%)

According to this data, the in-office conversations of preceptors in group practice serve maintenance purposes (at least as defined above) to a larger extent than is true for preceptors in solo practice. Solo practitioners among the preceptors report a larger proportion of innovation communication. It must be borne in mind that these particular data do not say anything about the amount of communication in any of these categories of function. The figures in Table 4.12 reflect only the proportion of respondents in each group who choose a given category as best characterizing the nature of his most typical in-office peer communication, regardless of the amount of that communication.

This latter observation raises an interesting question about the relationship of in-office frequency to in-office function, especially given the demonstrably high in-office frequency rates for preceptors in group practice. Unfortunately, the high percentage of preceptors who say they "almost never" talk with other physicians in their offices about the program renders comparative data suspect on the grounds of small cell size. What data there are show maintenance communication as the dominant category for all levels of frequency and a higher proportion of innovation communication among those who communicate most frequently in their offices.

Table 4.13

Office Frequency by Office Function

	Production	Maintenance	Innovation
once a month (n=15)	0%	87%	13%
once a week (n=5)	20%	80%	0%
more than once a week (n=6)	0%	67%	33%

Size of Group Practice

Closely related conceptually to the distinction between solo and group practice is the question of group size, i.e., the number of other physicians with whom a preceptor shares an office. The following is restricted to those frequency variables on which clear differences emerged in the comparison of preceptors in solo and group practices.

Table 4.14

Size of Group By Frequency of Office Communication

OFFICE. Question: In your office or on you telephone, about how frequently do you usually talk with other physicians about the preceptorship program?

	2-doctor group	3-doctor group	4-doctor group
almost never	58%	56%	44%
once a month	23%	33%	22%
once a week	15%	0%	11%
more than once a week	4%	11%	22%

OVERALL. Question: On the average, during periods when you have a student, how frequently do you talk with other physicians about some aspect of the preceptorship program?

	2-doctor group	3-doctor group	4-doctor group
almost never	35%	22%	0%
once a month	4%	44%	11%
once a week	42%	22%	55%
almost daily	12%	11%	33%
(no response)	(8%)	(0%)	(0%)
	n=26	n=9	n=9

Because of the incidence of very small cell size in this table, no confident conclusions can be made from these data. The data do indicate a positive relationship between group size and the highest rates of communication frequency.

Table 4.15 compares group size and the function of in-office communication about the preceptorship program. Again, the function variable does not measure amount of conversation, but only the predominant nature of respondents' communication, irrespective of the frequency or duration of such communication.

Table 4.15

Group Size by Function of Office Communication

	2-doctor groups	3-doctor groups	4-doctor or larger
clarifying what the College expects	12%	11%	22%
general topics, sharing experiences	58%	56%	44%
finding better ways to do our job	4%	11%	22%
no such conversations	23%	22%	0%
(no response)	(4%)	(0%)	(11%)
	n=26	n=9	n=9

A far higher proportion of respondents in all categories report maintenance communication ("general topics, sharing experiences") as the most frequent in-office communication function. The rather regular, positive relationship of group size and the choice of innovation as the most frequent function is rendered most tentative by the fact that there are only one, one and two responses respectively, in the cells of that row.

Number of Other Preceptors

Within the group practices represented in this population, the number of officially appointed preceptors ranges from one to four. Twenty-eight of the 44 preceptors in group practice have another preceptor as a practice partner; 16 preceptors in group practice are the only members of their groups holding a College appointment.

Table 4.16

Number of Other Preceptors By Frequency of Office Communication

	no other	1 other	2 others	3 others
almost never	56%	50%	63%	50%
once a month	25%	19%	25%	50%
once a week	6%	25%	0%	0%
more than once a week	12%	6%	13%	0%
	n=16	n=16	n=8	n=4

The data presented in Table 4.16 show that preceptors who have just one other preceptor in their group talk about the preceptorship program considerably more frequently than do those with two or three other preceptors in their group. Even those with no other preceptors in their group reported more frequently such in-office communication. It should be borne in mind that these data do not reflect the frequency of preceptors talking with other preceptors, but with physicians generally. The study included no measures of inter-preceptor communication per se.

Table 4.17 shows that the greatest proportion of members in each preceptor category chose the operational definition of the maintenance variable ("general topics, sharing experiences") as the best characterization of their most frequent conversations with other

physicians in their offices. None of the preceptors with three other preceptors in their groups reports innovation as the most frequent content-function. Combination of the last two propinquity categories yields a figure of eight percent for innovation communication choice of those preceptors practicing with two or three other preceptors. The resulting picture is one of a negative association between number of preceptors and the choice of innovation as the most frequent communication function.

Table 4.17

Number of Other Preceptors By Function of Office Communication

	no other	1 other	2 others	3 others
production*	19%	6%	13%	25%
maintenance	38%	69%	50%	75%
innovation	13%	6%	13%	0%
no such conversations	25%	13%	25%	0%
(no response)	(6%)	(6%)	(0%)	(0%)
	n=16	n=16	n=8	n=4

*For the exact wording of response options as they appeared in the questionnaire see Table 4.15. These operational definitions for levels of the function variables were used consistently throughout the questionnaire, each time a separate measure was taken on communication function.

When the data for frequency and function are considered together it will be seen that the preceptors with no other or only one other preceptor in their groups both talked more frequently while in their offices and more often talked mostly about how they might do their jobs better.

Size of Community

For this propinquity variable, the informal communication variables of interest are overall or general frequency and the locations of most frequent communication.

Table 4.18

Urban and Rural Preceptors By Overall Frequency

Question: On the average, during periods when you have a student, how frequently do you talk with other physicians about some aspect of the preceptorship program?

	urban suburban	rural-small town
almost never	26%	33%
once a month	17%	15%
once a week	45%	26%
almost daily	12%	15%
(no response)	(0%)	(3%)

According to the data in Table 4.18, preceptors in urban-suburban practice settings have somewhat more frequent conversations with other physicians during periods when they have students than do preceptors in rural and small town settings. The proportions of the two groups reporting monthly and daily rates is quite similar; the difference between the two groups is in the relative proportions reporting that they have such conversations about once a week.

Asked "where do you most frequently have conversations with other physicians about the College or the preceptorship program?" the preceptors responded as indicated in Table 4.19.

Table 4.19

Urban and Rural Preceptors By Location of Most Frequent Conversations

	most frequent		2nd most frequent		combined	
	urban	rural	urban	rural	urban	rural
in office	29%	44%	14%	30%	43%	74%
in hospital	45%	37%	31%	30%	76%	67%
at assn. mtgs.	7%	7%	24%	15%	31%	22%
at campus	5%	4%	2%	0%	--	--
other	5%	0%	5%	4%	--	--
(no response)	(10%)	(7%)	(24%)	(22%)	--	--

This table reveals that substantially more often than urban-suburban preceptors, rural-small town preceptors find their offices the most frequent location of conversations with other physicians about the College or the preceptor program. Three out of every four rural preceptors identified their offices as one of the first two most frequent locations for such conversations. Fewer than half of the urban-suburban preceptors did so.

It would be wrong to suppose that the slightly higher percentage of urban preceptors who identify their hospitals as the most frequent location reflects a heavier use of hospitals by urban preceptors. Other comparisons in the study show that rural preceptors spend an average of 2.8 hours per week more than urban preceptors in the hospital for the principal purpose of patient care and that they spend more time talking with other physicians while there (3.4 hours per week, as opposed to 2.7 hours per week). While urban preceptors report more time spent in hospital board or committee meetings, the differences on this measure are less striking (5.6 per month for urban, 5.1 per month for rural).

The row in Table 4.19 reporting percentages for association meetings shows one of every four urban-suburban preceptors saying that such meetings are the second most frequent location for conversations about the program, as opposed to a smaller percentage for rural-small town preceptors. This finding is consistent with the different patterns of activity in the associations for the two groups. Ninety percent of the urban preceptors, as opposed to 74% of the rural preceptors, attend district association meetings. Twenty-four percent of the urban preceptors, as opposed to 7% of the rural preceptors, serve on committees of the state-wide association.

Proximity to Campus

The proximity to campus variable was operationalized as "1/2 hour or less driving time" vs. "more than 1/2 hour." For the Lansing-East Lansing area, in which the University is located, a radius of 1/2 hour driving time would include all of the metropolitan area (urban, suburban, and "satellite" small towns). Moreover, for the vast majority of persons living within 1/2 hour's driving time radius, a telephone call to the campus would be a local (non-toll) call.

For this propinquity variable, the informal communication variables of particular interest are most frequent locations of conversations with other physicians, frequency of communication with full-time faculty, and overall or general frequency. It should be borne in mind, while considering the following figures, that preceding comparisons revealed no disproportions between proximate and more remote preceptors in terms of their formal participation in the preceptor program

(length of time in the program, visits from College officials, attendance at on-campus meetings.)

The interest here is to discover whether those closer to the campus more often communicate about the preceptorship program and, particularly, whether their proximity is associated with more frequent use of the College facilities for such conversations and whether they report more recent conversations with full-time faculty members.

Table 4.20 shows the responses by proximity to the question "On the average, during periods when you have a student, how frequently do you talk with other physicians about some aspect of the preceptorship program?"

Table 4.20

Overall Frequency According to Proximity to Campus

	1/2 hour or less	more than 1/2 hour
almost never	62%	21%
once a month	8%	18%
once a week	31%	39%
almost daily	0%	16%
(no response)	(0%)	(5%)
	n=13	n=56

Unfortunately, there were relatively few respondents from within the 1/2 hour driving time radius (n=13) due to the exclusion of some nearby preceptors from the study. The figures must therefore be interpreted with caution. According to Table 4.20, those preceptors from farther away more frequently talked with other physicians about the College and the preceptorship program.

The preceptors were also asked, "When was the last time you talked with a full-time faculty member in the Department of Family Medicine about the preceptorship program?" A comparison of these responses and the measure on proximity to campus reveals no large differences between proximate and more remote preceptors, as shown in the next table.

Table 4.21

Proximity to Campus by Frequency of Communication with Full-Time Faculty

	1/2 hour or less	more than 1/2 hour
never	31%	36%
2 months or more ago	38%	39%
less than 2 months ago	31%	25%
	n=13	n=56

Comparison of responses to questions about where conversations most frequently take place and the proximity to campus variable are of particular interest only in respect to those who identified the College's campus as the most frequent location. Nine percent of the preceptors more remote from the campus mentioned the campus as the most frequent location for conversations with other physicians about the preceptorship program. None of those from the more proximate areas did so. Again, those farther away identify the campus as the second most frequent location more often than do those closer to the campus

(21% and 15%, respectively.)

Activity in the Hospital

Two separate aspects of the preceptors' relative activity in their hospitals were included in the study. One focused upon the time preceptors spend in their hospitals visiting patients. The other focused upon the preceptors' involvement in hospital board and committee work. Measures of informal peer communication were taken relative to each aspect of hospital activity. The following two sections report on these findings.

Time Spent Visiting Patients. Preceptors were asked to estimate how much time they spend at the hospital each week when they go there "for the purpose of visiting patients." The responses were recorded in hours per week. Means were calculated for each level of three informal communication variables: frequency, duration and function. The results of these comparisons are presented in the following series of three tables.

Table 4.22

Hours in Hospital to See Patients By Frequency

Question: In the past month, can you recall having any conversations with other physicians about the preceptorship program while in the hospital to see patients?

		hrs./wk. in hospital to see patients
no	(n=31)	11.9
yes, once or twice	(n=35)	13.3
yes, three or more times	(n= 3)	13.3
total	(n=69)	12.7

Table 4.22 reveals that those who can recall having at least one conversation about the preceptorship program within the last month spent, on the average, almost 1 1/2 hours per week more in the hospital visiting patients. No difference resulted between those who had one or two conversations and those who had three or more.

Table 4.23

Hours in Hospital To See Patients By Duration

Question: Did at least one of these conversations (in the hospital during the past month) last more than five minutes?

		hrs./wk. in hospital to see patients
no	(n=10)	12.4
yes	(n=23)	13.8
can't remember	(n= 4)	14.3
(had no such conversations)	(n=32)	11.8
total	(n=69)	12.7

These data show that those who recall having conversations of at least five minute's duration spend almost 1 1/2 hours per week more in the hospital seeing patients than those who say they had no conversations of that length.

Table 4.24

Hours in Hospital To See Patients By Function

Question (for those who report conversations in the hospital within the past month); What did you talk about?

		hrs./wk. in hospital to see patients
clarifying what the College expects	(n=9)	12.3
general topics, sharing experiences	(n=24)	13.3
finding better ways to do our job	(n=5)	15.5
(no such conversations)	(n=31)	
total	(n=69)	12.67

According to the data in Table 4.24, those identifying the innovation function as the best characterization of their recent conversations in the hospital spent more time in the hospital visiting patients than did those in either other category. Also, those reporting maintenance as the function of their conversations spent more time than those reporting production.

Time in Hospital Meetings. Two propinquity variables were included by which to measure relative activity in the affairs of the hospital. Preceptors were asked, "Relative to other members of your (principal) hospital's staff, would you describe yourself as 'more active than most' in the affairs of the hospital?" They were also asked "Excluding regular meetings for the entire staff, about how much time do you presently spend in hospital board or committee meetings in an average month?" A comparison of these two propinquity variables was analyzed in the opening pages of this chapter and a positive relationship was found between them. Whether these two measures on what is essentially the same variable will yield similar results in comparisons with communications variables may be seen in the following series of tables. The communications variables are frequency, duration, initiation and function.

According to Table 4.25, there is a regular and positive relationship between the preceptors' description of themselves as more or less active in hospital affairs and the frequency of their communication about the preceptorship program in hospital meetings. All preceptors describing themselves as "less active" than most say that they "almost never" talk with others in hospital meetings about the preceptorship

Table 4.25

Hospital Activity and Hours in Hospital Meetings by Frequency

Question: At hospital staff or committee meetings, how frequently do you talk with anyone about the preceptorship program?

	more active than most	about average	less active	hrs./mo. in meetings*
almost never	60%	83%	100%	5.0
once a month	30%	10%	0%	6.7
more than once a month	10%	7%	0%	
	n=30	n=30	n=9	

*These figures, it should be remembered, are for time spent in hospital board and committee meetings, excluding regular meetings for the entire staff.

Table 4.26

Hospital Activity and Hours in Hospital Meetings By Duration

Question: When you talk about the preceptorship program with physicians at hospital staff and committee meetings, how long do these conversations generally last?

	more active than most	about average	less active	hrs./mo. in meetings
don't talk	37%	27%	33%	4.9
less than 5 min.	30%	47%	56%	5.1
more than 5 min.	27%	17%	11%	6.9
(no response)	(7%)	(10%)	(0%)	4.9
	n=30	n=30	n=9	

program. Those who report occasional conversations of this kind spend more time (1.7 hours per month more) in hospital board or committee meetings, than those who "almost never" have such conversations. However preceptors who talk about the program approximately once a month are not distinguished from those who talk about it "more than once a month."

These data do not show the same negative relationship between "activity" and those who "don't talk" as was so evident in Table 4.25. This is curious, inasmuch as the duration item immediately followed the frequency item in the questionnaire. However, there is a regular and negative association between activity and the shorter conversations, and a regular and positive association between activity and the longer conversations. Also, those who report conversations of longer duration (n=14) also report 35% more time per month spent in hospital board and committee meetings than do those who report shorter conversations (n=28).

Table 4.27

Hospital Activity and Hours in Hospital Meetings By Initiation

Question: Who generally starts these conversations (at hospital meetings)?

	more active than most	about average	less active	hrs./mo. in meetings
don't talk	37%	27%	33%	4.9
less than 5 min.	30%	47%	56%	5.1
more than 5 min.	27%	17%	11%	6.9
(no response)	(7%)	(10%)	(0%)	4.9
	n=30	n=30	n=9	

Only six respondents said other persons generally started the conversations about the preceptorship program which arose before or after hospital/board committee meetings. The largest proportion of those in each activity category said that initiation was about equal. According to these data, no clear pattern of relationship exists between initiation and self-judged activity. However, there is a clear difference on the sister variable, hours in hospital meetings. Those saying that "others start" spend 16% more time in hospital board and committee meetings than do those who say "about equal" and 29% more than those who say "I start."

Table 4.28

Hospital Activity and Hours in Hospital Meetings By Function

Question: What do you talk about in these conversations (before or after hospital board or committee meetings)?

	more active than most	about average	less active	hrs./mo. in meetings
production* (n=9)	7%	20%	11%	3.0
maintenance (n=24)	43%	23%	44%	6.7
innovation (n=12)	13%	23%	11%	5.9
no such conversations (n=11)	20%	13%	11%	6.0
(no response) (n=13)	17%	20%	22%	3.7
	n=30	n=30	n=9	

*Production, maintenance and innovation functions were represented in the questionnaire by the following phrases, respectively: "clarifying what the College expects," "general topics, sharing experiences," and "finding better ways to do our job."

Those preceptors who judge themselves to be of "about average" activity in hospital affairs, report a rather balanced distribution over the three function levels. A larger proportion of them characterized their communication as having to do with production and innovation than is true for either the more active or the less active. The largest mean number of hours spent in hospital board and committee meetings (6.7 hrs./mo.) is associated with those respondents who characterize their conversations in hospital meetings as "general topics, sharing experiences" (maintenance communication). Those who say they talk about "clarifying what the College expects" (production communication) report the lowest mean number of hours in meetings (3.0 hrs./mo.), far below the mean for the entire population (5.4 hrs./mo.).

Activity in Professional Associations

The last of the propinquity variables in this study is relative activity (and, hence, proximity in time and space with other physicians) in the principal professional organizations. In Michigan, the general professional society open to all osteopathic physicians is the Michigan Association of Osteopathic Physicians and Surgeons (MAOP&S). The state association has constituent local affiliates organized on a county basis, some covering several counties. In the first section of this chapter, a table was presented showing that respondents tend to be mutually active or inactive in both of their associations.

The informal communication variables with which the activity in associations variables were compared are frequency, duration, initiation and function.

Table 4.29

Activity in Professional Associations By Frequency

Question: Before or after osteopathic association meetings, how frequently do you talk with anyone about the preceptorship program?

District Associations

	don't attend	attend, no cmte. work	attend, do cmte. work	officer or cmte. chm.
almost never (n=45)	82%	81%	60%	25%
once every 3-4 mtgs. (n=12)	0%	15%	20%	33%
at least once every mtg. (n=9)	0%	4%	15%	42%
(no response)	(18%)	(0%)	(5%)	(0%)
	n=11	n=26	n=20	n=12

State Associations

	don't attend	attend, no cmte. work	attend, do cmte. work	officer or cmte. chm.
almost never	87%	72%	33%	67%
once every 3-4 mtgs.	7%	15%	25%	33%
at least once every mtg.	0%	8%	42%	0%
(no response)	(7%)	(5%)	(0%)	(0%)
	n=15	n=39	n=12	n=3

Table 4.29 shows a rather regular and positive relationship between activity in professional associations and frequency of communication about the preceptorship program, except for the officer and committee chairman (most active) category.

In Table 4.30, the proportion of those respondents reporting conversations of more than five minutes' duration rises with each category of activity, from least to most. This regular and positive relationship is true for activity in both district and state associations.

No clear relationship is discernible in Table 4.31 between activity in professional associations and initiation. Those who do attend association meetings much more often report that initiation is "about equal" than they report that it is generally started by themselves or by their colleagues.

Table 4.30 shows that, in most categories of relative activity, respondents chose "general topics, sharing experiences" (maintenance) as the best characterization of the content-function of their conversations at association meetings. In general, for the levels of activity, the proportion of those electing the maintenance response equals or exceeds the proportion electing production and innovation combined. No shifting of function is discernable as the relative activity of those who attend the associations increases from those who are just members to those active in the committee structure and again to those who are in leadership positions.

Table 4.30

Activity in Professional Associations By Duration

Question: When you talk about the preceptorship program with other physicians before or after an osteopathic association meeting, how long do these conversations generally last?

	District Association			
	don't attend	attend, no cmte. work	attend, do cmte. work	officer or cmte. chm.
less than 5 min. (n=19)	9%	31%	25%	42%
more than 5 min. (n=15)	0%	12%	25%	58%
don't talk (n=19)	36%	31%	35%	0%
(no response) (n=16)	(55%)	(27%)	(15%)	(0%)
	n=11	n=26	n=20	n=12

	State Association			
	don't attend	attend, no cmte. work	attend, do cmte. work	officer or cmte. chm.
less than 5 min.	13%	28%	33%	67%
more than 5 min.	0%	21%	50%	33%
don't talk	33%	33%	8%	0%
(no response)	(53%)	(18%)	(8%)	(0%)
	n=15	n=39	n=12	n=3

Table 4.31

Activity in Professional Associations By Initiation

Question: Who starts these conversations (before or after an association meeting)?

	District Association			
	don't attend	attend, no cmte. work	attend, do cmte. work	officer or cmte. chm.
others start (n=5)	0%	15%	0%	8%
I start (n=6)	9%	0%	15%	17%
about equal (n=25)	0%	35%	35%	75%
don't have such conversations (n=14)	18%	31%	20%	0%
(no response) (n=19)	(73%)	(19%)	(30%)	(0%)
	n=11	n=26	n=20	n=12

	State Association			
	don't attend	attend, no cmte. work	attend, do cmte. work	officer or cmte. chm.
others start	0%	10%	8%	0%
I start	7%	8%	8%	33%
about equal	7%	36%	67%	67%
don't have such conversations	40%	18%	8%	0%
(no response)	(47%)	(28%)	(8%)	(0%)
	n=15	n=39	n=12	n=3

Table 4.32

Activity in Professional Associations By Function

Question: What do you talk about in these conversations (before or after association meetings)?

	District Association			
	don't attend	attend, no cmte. work	attend, do cmte. work	officer or cmte. chm.
production* (n=8)	0%	0%	25%	25%
maintenance (n=19)	9%	27%	20%	58%
innovation (n=7)	0%	15%	5%	17%
don't have (n=17)	27%	35%	25%	0%
(no response) (n=18)	(64%)	(23%)	(25%)	(0%)

	State Association			
	don't attend	attend, no cmte. work	attend, do cmte. work	officer or cmte. chm.
production	0%	10%	25%	33%
maintenance	7%	26%	50%	67%
innovation	7%	13%	8%	0%
don't have	40%	20%	8%	0%
(no response)	(47%)	(26%)	(8%)	(0%)
	n=15	n=39	n=12	n=3

*For the exact wording of response items as they appeared in the questionnaire, See Table 4.24.

Summary

A profile of the population on the propinquity and "control" variables was presented in a series of tables (Table 4.1 through Table 4.6). It was pointed out that the so-called "control" factors may also be viewed as describing the population in terms of its members' participation in formal aspects of the preceptorship program.

Propinquity factors were then compared with "control" factors. Size of community (rural vs. urban) was found to be related to each of the "control" variables. Length of time in the program was found to be related to each of the propinquity variables. As a result of these findings, the "control" variables were compared with overall frequency of informal communication. Length of time in the preceptorship program and number of visits by College officials were both found to be positively related to overall frequency.

Preceptors in solo practice and preceptors in group practice are virtually identical in the proportions in which they report that they talk informally about the preceptorship program with other physicians encountered during hospital rounds, in hospital staff meetings and in professional association meetings. However, those in group practice report in significantly higher proportions that they have such conversations in their offices -- and, correspondingly, report higher levels of communication frequency on an overall frequency measure. One in every two preceptors in group practice identified their offices as the most frequent location for conversations with other physicians about the preceptorship program, as opposed to one in eight of the preceptors in solo practice.

Relative to their counterparts in solo practice, preceptors in group practice more often said that in-office discussion of the preceptorship program was mainly about maintenance matters ("general topics, sharing experiences"). A smaller percentage of group practitioners than solo practitioners characterized such in-office conversations as having mostly to do with innovation ("finding better ways to do our job").

For the second propinquity variable, size of group practice, a positive relationship is apparent between the number of physicians in the group and the highest frequency ("almost daily" or "more than once a week"). Size of group practice is also associated with the frequency with which the subjects characterize their in-office communications as "finding better ways to do our jobs." Confidence about both of these findings is conditioned by the rather small numbers of preceptors in the larger group.

The third propinquity variable, number of other preceptors in the group, is closely related to group size in concept. However, an exactly opposite finding emerges from analysis of these data. Preceptors with no other or only one other preceptor in their group both talked more frequently in their offices about the program and more often talked mostly about how they might do their jobs better, as compared with those in groups with two or three other preceptors.

When preceptors from urban and suburban areas were compared with preceptors from rural and small towns, the urban preceptors report somewhat more frequent communication during periods when they have a student in their offices, less frequently identify their offices as

the location of most conversations and more often say that professional associations are the second-most frequent site of their discussions about the preceptorship program with other physicians. This latter finding is consistent with the urban preceptors' more frequent attendance at meetings of district (local) professional associations.

With respect to proximity to campus, respondents living within a 1/2 hour driving time radius report less overall frequency of communication with other physicians about the preceptorship program, no large difference with respect to frequency of interaction with full-time faculty and no instances of the campus being identified as the second most frequent location of conversations with other physicians about the preceptorship program (as opposed to 9% for those farther away than 1/2 hour driving time).

Propinquity with respect to the hospital as a work-site for preceptors was measured by asking how much time they spend in the hospital when they go there for the purpose of seeing patients.

There is a positive association between this variable and communication frequency, and between this variable and duration of conversations. Those identifying the nature of their conversations as innovation report more time devoted to visiting hospitalized patients than those choosing the maintenance option, who, in turn, devote more time to hospital rounds than those saying that their conversations were about clarifying College expectations (production).

Those who judge themselves to be "more active in the affairs of the hospital" more often report frequent conversations and longer conversations about the preceptorship program in the context of hospital meetings. However, the "more active" and "less active" subjects

were not much different with respect to the initiation of these conversations or their content function. Responses of those saying that their level of activity in hospital affairs is "about average" report the lowest percentage of self-initiated conversations and the most "balanced" distribution on the function variable.

A second measure of relative activity in hospital affairs was hours per month spent in hospital board or committee meetings. On this measure, positive relationship was discovered for frequency, duration, conversations started by others and maintenance communication.

The final propinquity variable examined was activity in the principal professional associations. Relative activity in the associations (attendance and committee work) was found to be positively associated with frequency and duration, but not associated in any way with initiation or function.

Analysis and reporting of findings continues in Chapter V. The main focus of that chapter is on comparison of informal communication variables with perceptions and attitudes.

Chapter V

ANALYSIS: INFORMAL COMMUNICATION AND PERCEPTION

Most of the last chapter was devoted to comparisons of propinquity factors and informal communication factors. Correspondingly, the present chapter is principally devoted to comparisons of those same informal communications factors with measures on the study's attitudinal variables.

The informal communications variables and the discrete measures taken on each are:

- frequency (variously operationalized in different measures)
  - --in the office (including office telephone)
  - --in the hospital while there to see patients
  - --at hospital staff or committee meetings
  - --at professional association meetings
  - --overall (not specific as to location or social context)
  - --with full-time faculty
- duration
  - --in the hospital while there to see patients
  - --at hospital staff or committee meetings
  - --at professional association meetings
- initiation
  - --at hospital staff or committee meetings
  - --at professional association meetings
- function
  - --in the office (including telephone)
  - --in the hospital while there to see patients
  - --at hospital staff or committee meetings
  - --at professional association meetings

This chapter is organized according to these informal communications variables. In each instance, comparisons between selected

measures on the informal communication variables and appropriate perception-attitude variables are analyzed.

Before moving to the first of these comparisons, however, data for the entire population on the perception-attitude variables are presented in a series of three tables. The accompanying text includes illustrative comments of the respondents gleaned both from the questionnaires and from face-to-face interviews.

Profile on Perception Variables

Perception of Information. The data in Table 5.1 provide a profile on the entire population according to their responses on six questionnaire items. The questions were designed to elicit views on the information available to preceptors about the preceptorship program and on the means by which they received, or would prefer to receive, such information.

With respect to the amount and timing of information, approximately one-fourth said they "get adequate information" and another one-fourth said they "don't get information." Nearly one half said they get information, but that the information they get is "too little and too late." One rural preceptor in group practice said he "would like to know a lot more." Among the specific things he would like to know about are the satisfaction of students with the program and the effect of preceptors' evaluations in the overall evaluations of students by the College. However, another preceptor in rural, group practice said he was thoroughly satisfied with the amount and timing of information available to him, explaining, "I just get on the phone. All I have to do is make my needs known."

Table 5.1

Profile of Population: Perception of Information, Sources and Interest

AMOUNT, TIMING. Question: How do you feel about the total amount of information available to you from all sources about the preceptorship program -- and when you get it?

don't get information	26%
get it, but too little and too late	46%
get adequate information	23%
(no response)	(4%)

QUALITY. Question: How do you feel about the accuracy and usefulness of the information which you get from all sources about the preceptorship program?

it's accurate and useful	43%
it's accurate, but often not useful in my situation	16%
it's useful, but I often doubt its accuracy	9%
it is neither useful nor accurate	3%
(no response)	(29%)

CLARITY. Question: How clear is it to you what the College expects you to do as a preceptor?

it's really not very clear	16%
not clear, but I decided myself what is needed	33%
not clear, but other physicians and I together have worked out what should be done	13%
the College has made it sufficiently clear	35%
(no response)	(3%)

SOURCE VALUE. Question: Which ONE of the following sources of information has been most valuable in your role as a preceptor?

journals and formal presentations at conventions	10%
mailings from the College	23%
full-time faculty members and/or Director of Education at your hospital	12%
other physician colleagues and students	38%
other	10%
(no response)	(7%)

Table 5.1 (cont.)

PREFERRED SOURCE. Question: Where and how would you most prefer to get your information about the preceptorship program and the College's expectations for your role?

the present arrangement is sufficient	22%
more, better presentations by officials at general meetings	12%
small discussion and problem-solving sessions	19%
visit to my office by College representative	33%
other (please specify)	1%
(no response)	(13%)

COLLEGE INTEREST. Question: How do you feel about the interest of the College leaders in your experiences and perspectives as a preceptor?

they have shown no sign of interest	17%
I assume they are interested, but they haven't done much to allow me to make my input	43%
they're definitely interested and have welcomed receiving my suggestions	28%
(no response)	(12%)

A preceptor in an urban, group practice for whom being a preceptor is very important declared that the amount of information is "adequate because I don't need much," adding "I have very little, but I don't much care." It is interesting to note, however, that this same preceptor is very active in his hospital and reported a moderate frequency of conversations with other physicians about the preceptorship program.

Those commenting particularly about timing said that the major problem was not knowing in advance what the students have covered in their on-campus classes. They complain that, whereas they can find this out from the students, too much time is lost doing so after the students arrive in their offices.

Forty-three percent of the respondents judged available information from all sources to be "both accurate and useful." Sixteen percent said "it's accurate, but often not useful in my situation." Several preceptors said that they had been sent "lots of information" early in the program, but that it had not been "germaine" or was "too limiting." One preceptor could recall receiving something rather recently in the mail, but couldn't recall what it had been. Only two preceptors said that available information was "neither useful nor accurate." Nine percent found it useful, but said they often doubt its accuracy. With respect to accuracy, one preceptor commented in an interview that "The bigwigs tell us what they want us to hear." A rather large proportion of the total (29%) declined to answer this particular question. One wrote an explanatory comment in the margin: "receive so little information as to be unable to give a good answer." Another preceptor, one who marked the "accurate and useful" option, had responded in an earlier interview with a shrug and a diffident "I have no reason to fault it." In interviews, several preceptors stressed their preference for "official and direct" communication from an "authorized individual."

The "clarity" variable is complex. One response option was simply "it's really not very clear" what the College expects of its preceptors. Sixteen percent chose this option. The next two response options also say it is not clear what the College expects, but go on to present alternative ways of responding to that lack of clarity. Thirty-three percent said it is "not clear, but I decided <u>myself</u> what is needed." Thirteen percent said it is "not clear, but other physicians

and I together have worked out what should be done." Thirty-five percent said "the College has made it sufficiently clear."

One preceptor who chose the "not very clear" option had said in a preliminary interview, "I think I know what to do, but it's not too clear. It would be helpful to have things spelled out." Another who responded similarly on the questionnaire had said in a preliminary interview:

> I'm not sure what the College expects of me. For example, am I supposed to go so far as to allow students to "glove up" for minor (office) surgery? The students seem satisfied (with what I do), but is the College?

Interestingly, this comment came from a man whose office is close to the campus and who reports that an important source of information about the program is full-time faculty encountered in the hospital and at district professional association meetings.

Asked which source of information has been most valuable, the largest proportion (38%) said "other physicians and students." Twelve percent said full-time faculty and/or the Director of Education at their hospital (who, depending on the hospital and the individual, may represent a strong link between the College and local communities). Of those identifying the more formal sources as most valuable, 10% said journals and presentations at conventions, while 23% said mailings from the College. One of those who said that journals and formal presentations at conventions had been most valuable explained in a marginal note that he received "very little communication from the College." His answer fits with the fact that he reports that he "almost never" talks with other physicians at the hospital or at association meetings and, in spite of the fact that he has another preceptor practicing

with him, reports "no such conversations" in his office within the previous month. All of the ten percent who indicated that their most valuable source was "other" than any of the options presented explained that their own personal experience was the source most helpful to them.

With respect to where and how they would prefer to get their information about the preceptorship program and the College's expectations for their role, 22% said that "the present arrangement is sufficient." Twelve percent want "more, better presentations by College officials at general meetings." One-third of all respondents would prefer a visit to their offices by a representative of the College. One in five would most like to have small disucssions and problem-solving sessions.

One preceptor who indicated on his questionnaire that "the present arrangement is sufficient" would prefer that the College "print something up and send it out. One can't go to meetings all the time." This response is from a solo practitioner with very little hospital practice (1 hr./wk.) who is "less active" than most in the affairs of his hospital and does not attend district association meetings. By contrast, several of those favoring small discussion and problem-solving sessions stress the importance of "give and take" among colleagues (having, in other contexts, attested to its importance on a wholly voluntary and informal basis in their own practices). One of these said that he thought such periodic sessions ought to be mandatory for preceptors, adding that he "can't see how (the program) can carry on without it."

Another preceptor wants feedback from students as guidance for his own growth. He suggests "evaluation of physicians by students

and then discussion with physicians about the student recommendations and criticisms." The question about preferred source of information prompted the following on the questionnaire of a preceptor from a rural-small town, group practice some distance from the University:

> I would like a general education program for preceptors, giving a condensed review of what the students receive at the College. (I want this) for two reasons: (1) it updates my knowledge, and (2) it would give me better insight into the students' thinking and knowledge.

Asked about the interest of College leaders in their experience and perspectives as preceptors, the largest proportion (43%) responded that "I assume they are interested, but they haven't done much to allow me to make my input." Seventeen percent said "they have shown no sign of interest" and 28% said "they're definitely interested and have welcomed receiving my suggestions." In an interview, one said that "professionals in education don't want to listen to men in the field." Another offered that it is "hard to say . . . I think so, I don't know how much value the preceptor's contribution makes (to the whole educational program). I don't know how they know what I'm doing." One of those who said "they're definitely interested" had told in an interview (in response to the same question) about the time he came unannounced to the College facilities. "The minute I identified myself to the secretary, I was ushered in and talked with the dean over coffee."

Ideas for Improvement. Four items in the questionnaire had to do with ideas for the improvement of the preceptorship program. Table 5.2 presents the resulting data.

Table 5.2

Profile of Preceptor Population: Ideas for Improvement

	percent total+	percent ideas
Have you ever had any specific ideas about how the preceptorship program could be improved?		
yes	64%	
no, not at this time	32%	
(no response)	(4%)	
<u>If yes</u>:		
a. Have you shared your idea(s) with other physicians?		
no	10%	16%
only briefly	35%	54%
considerable discussion	19%	30%
(no response)	(36%)	
b. Have you ever communicated your idea(s) to any full-time faculty of the Department of Family Medicine?		
yes	19%	30%
no	44%	70%
(no response)	(36%)	
c. Briefly <u>outline</u> your suggestions in the space below. (written suggestions categorized by general nature of those submitted by <u>each respondent</u>).		
administration of preceptorship program	26%	46%
conception or "philosophy" of program	25%	44%
selection of preceptors	3%	5%
criteria for student admissions	3%	5%
(no response)	(44%)	

Sixty-four percent of the respondents said they did have specific ideas or suggestions. Of these, 16% said they had not shared them with other physicians, 54% said they had shared them "only briefly" and 30% said they had had "considerable discussion" with other physicians about their suggestions. Asked whether they had ever communicated their suggestions to any full-time faculty member of the Department of Family Medicine, 30% said they had and 70% said they had not.

These latter two items were included in the questionnaire as a gauge of system openness. On this basis, it is apparent that a very high percentage (84%) of those with specific suggestions have offered them for discussion, at least briefly, with other physicians, whereas a much smaller proportion (30%) have in any way communicated those ideas to the persons with responsibility for shaping or managing the program.

Respondents were asked to write their suggestions on the questionnaire. Each respondent's ideas were then categorized as a whole, yielding a single value for each respondent irrespective of the number of suggestions listed. Most of the respondents offered mostly or most emphatically suggestions about either the administration (operation, management) of the program (46%) or the conception or "philosophy" of the program (44%). Five percent (two preceptors) wrote suggestions deemed by the investigator as mostly concerned with the selection of preceptors and another 5% had ideas mostly about criteria for student admissions, a concern which has bearing upon the preceptorship program but goes well beyond it also.

Table 5.3

Profile of Preceptor Population: Salience of Role

Which of the following affiliations contributes more to your growth in clinical competence as a family practitioner?	
being a preceptor	45%
participation in professional associations	25%
neither contributes much	29%
(no response)	(1%)
Again, which of the following affiliations contributes more to your growth in clinical competence as a family practitioner?	
being a preceptor	23%
consultation and educational programs at my hospital	67%
neither contributes much	7%
(no response)	(3%)
Which of the following affiliations do you think contributes more to your patients' regard for you?	
being a preceptor	22%
my position(s) in the hospital staff	17%
neither contributes much	55%
(no response)	(6%)

Salience of the Preceptor Role. Table 5.3 presents the last three items on the questionnaire. Each compares participation in the preceptorship program with some other role and asks which role contributes most in a given respect.

Asked which affiliation contributes more to growth in clinical competence as a family practitioner, 45% said "being a preceptor" and 25% said participation in professional associations, while 29% said neither did. Asked the same question about a comparison with consultation and educational programs at their hospitals, 23% thought being a preceptor contributed more, as opposed to 67% for the hospital affiliation, while 7% thought neither did. Asked which affiliation contributes more to their patients' regard for them, 22% said "being a preceptor," 17% said "my position(s) in the hospital staff" and 55% said that neither contributes much.

One preceptor, highly placed in his hospital leadership, chose "being a preceptor" over the hospital affiliation as contributing more to his growth. In a preliminary interview, he had said, "Some of us enjoy teaching and the College allows us to do it. We're not just tolerated, as GP's often are in other places." A preceptor who had judged the preceptor role as "contributing more" in all respects but hospital consultation and education said in an interview that being a preceptor "keeps me sharp" and "I know that the students report to each other about which preceptors are good." A rural preceptor said about his patients, "I think they think, 'you must be pretty good or they wouldn't send students out here.' " On the other hand, another wrote on his questionnaire an explanation of his choice of the "neither contributes much" option to the last question:

> (My patients) don't know, nor do they care, about what committees I'm on, etc. The patients' regard for the doctor is based primarily upon rapport, interest, time and the results of person-to-person contact -- in short, the "doctor-patient relationship."

Frequency of Communication

Measures of communication frequency are compared with various perception-attitude variables in the next series of five tables. Only two measures of frequency are utilized for this purpose, as opposed to the multiple frequency measures utilized in Chapter IV. In the preceding chapter, the principle purpose was to systematically compare each propinquity variable with communication measures most closely related to it. Thus, for example, relative activity in the affairs of the hospital was compared with communication behavior in hospital staff and committee meetings. In the present context, however, it suffices to utilize communication measures which are not situation- or context-specific, when they are available, since the perception-attitude variables also measure preceptors' judgments about their overall experience.

Frequency and Perception of Information. Table 5.4 presents data resulting from comparisons of the variable named "overall frequency" with three perception of information variables. With respect to the question about the amount and timing of information, it will be seen that 35% of those who say that they "almost never" talk with other physicians about the preceptorship program also say that they "don't get" information about the program. This figure represents a larger proportion of those saying they "don't get it" than is true of any of

Table 5.4

Overall Frequency of Communication* By Perception of Information

AMOUNT, TIMING. Question: How do you feel about the total amount of information available to you from all sources about the preceptorship program -- and when you get it?

	almost never	once a mo.	once a wk.	almost daily
don't get it (n=18)	35%	27%	19%	22%
get it, but too little and too late (n=32)	45%	55%	54%	33%
get adequate information (n=16)	20%	18%	23%	44%
(no response) (n=3)	(0%)	(0%)	(4%)	(0%)

QUALITY. Question: How do you feel about the accuracy and usefulness of the information which you get from all sources about the preceptorship program?

	almost never	once a mo.	once a wk.	almost daily
accurate and useful (n=30)	45%	45%	38%	66%
accurate, but often not useful (n=11)	15%	18%	23%	0%
useful, but I often doubt its accuracy (n=6)	5%	9%	12%	11%
neither accurate nor useful (n=2)	5%	0%	4%	0%
(no response)	(30%)	(27%)	(23%)	(22%)

CLARITY. Question: How clear is it to you what the College expects you to do as a preceptor?

	almost never	once a mo.	once a wk.	almost daily
it's really not very clear (n=11)	35%	0%	8%	11%
not clear, but I decided myself what is needed (n=23)	25%	73%	27%	22%
not clear, but other physicians and I together have worked out what should be done (n=9)	5%	9%	19%	22%
College has made it sufficiently clear (n=24)	30%	18%	42%	44%
(no response)	(5%)	(0%)	(4%)	(0%)
	n=20	n=11	n=26	n= 9

the other categories. Similarly, of those saying that they communicate "almost daily" with other physicians, the percentage of those saying that they "get adequate information" is higher than for any other group. On the whole, the picture is one of progressively higher evaluations of available information by each category of communication frequency, from least frequent to most frequent.

Again, in the case of the comparison of overall frequency with perceptions of the accuracy and usefulness (quality) of available information, the most favorable evaluation is rather definitely associated with the category representing those who talk informally with other physicians "almost daily" during periods when they have students. Sixty-six percent of these preceptors say they find the information available to them both useful and accurate. However, in this case, the relationship is not regular and progressive, as it was in the previous comparison with the amount and timing variable. Those who report informal communication "once a month" and "once a week" are not less critical of the adequacy of available information than those who say they "almost never" talk with other physicians. It is interesting to note that the most frequent communicators were more inclined to doubt the accuracy of information (perhaps reflecting their greater exposure to informal and, therefore, "unofficial" information).

On the clarity variable, the preceptors in the highest frequency categories report that they perceive the College as having made "sufficiently clear" what is expected in percentages substantially higher than those who communicate informally less often. Those who "almost never" talk with other physicians about the preceptorship program have,

by far, the largest proportion who say "it's really not very clear." Interestingly, those reporting that they talk with other physicians about the preceptorship program "once a month" also report that they have decided themselves what needs doing in a proportion three times that of any other group. There is a positive relationship between frequency and the choice of the response option "not clear, but other physicians and I together have worked out what should be done."

Frequency and Perception of Sources. Table 5.5 presents the results of comparisons between the overall frequency variables and two measures of perceptions of information sources. In the first instance, preceptors were asked to identify the source (or combination of two similar sources) which had proved "most valuable in (their) role as a preceptor." No pattern of association between these two variables emerges from this comparison.

Asked where and how they would prefer to get their information, the preceptors' responses are, again, not clearly associated with their relative frequency of informal communication with other physicians about matters related to their role as preceptors.

Frequency and Perception of Interest. The comparison presented in Table 5.6 is between overall frequency and perception of the interest of College leaders in the preceptors' experiences and perspectives. No clear associations can be inferred from these data. The preceptors in the "almost daily" category have the lowest proportion of those saying that College leaders have shown no interest, but they have not more often said that College leaders are "definitely" interested. Moreover, the most critical group are those who talk with other physicians

Table 5.5

Overall Frequency* By Perceptions of Information Sources

SOURCE VALUE. Question: Which one of the following sources of information has been most valuable in your role as preceptor?

	almost never	once a mo.	once a wk.	almost daily
journals, formal presentations (n=7)	15%	9%	8%	11%
mailings from the College (n=16)	25%	45%	15%	22%
full-time faculty, hosp. dir. of educ. (n=8)	10%	9%	12%	22%
physician colleagues and students (n=26)	30%	36%	50%	33%
other (n=7)	15%	0%	8%	11%
(no response) (n=5)	(5%)	(0%)	(8%)	(0%)

PREFERRED SOURCE. Question: Where and how would you most prefer to get your information about the preceptorship program and the College's expectations for your role?

	almost never	once a mo.	once a wk.	almost daily
present arrangement is sufficient (n=15)	20%	27%	23%	22%
more, better presentations by officials (n=8)	10%	18%	8%	22%
small problem-solving sessions (n=13)	25%	18%	15%	22%
visit to my office by College rep. (n=23)	30%	18%	35%	33%
other	0%	0%	4%	0%
(no response)	(15%)	(18%)	(15%)	(0%)
	n=20	n=11	n=26	n= 9

*for operational definition, see Table 5.4.

Table 5.6

Overall Frequency* By Perception of College Interest

INTEREST OF COLLEGE. Question: How do you feel about the interest of College leaders in your experiences and perspectives as a preceptor?

	almost never	once a mo.	once a wk.	almost daily
they have shown no sign of interest (n=12)	15%	18%	23%	11%
I assume they are interested, but they haven't done much to allow me to make my input (n=30)	40%	36%	46%	56%
they're definitely interested and have welcomed my suggestions (n=19)	30%	36%	19%	33%
(no response)	(15%)	(9%)	(12%)	(0%)
	n=20	n=11	n=26	n= 9

*for operational definition, see Table 5.4.

as frequently as "once a week."

Frequency and Salience of Preceptor Role. Table 5.7 compares overall frequency with three measures of the relative salience of the preceptor role. In the first of these salience items, preceptors were asked whether being a preceptor contributed more than participation in professional associations to their growth in clinical competence. There is a clear relationship between frequency of informal communication and the choice of "being a preceptor," except that those who "almost never" talk with other physicians seem not to fit the pattern. An explanation might lie in a comparison between overall frequency and the measures of activity in the association. Unfortunately, no such comparison was made. It is noteworthy that the "almost never" category has the largest percentage of those saying "neither contributes much." In any case,

Table 5.7

Overall Frequency* By Salience of Preceptor Role

Question: Which of the following affiliations contributes more to your growth in clinical competence as a family practitioner?

	almost never	once a mo.	once a wk.	almost daily
being a preceptor (n=31)	45%	18%	38%	78%
participation in prof. ass'ns. (n=17)	15%	55%	27%	11%
neither contributes much (n=20)	40%	18%	35%	11%
(no response) (n=1)	(0%)	(9%)	(0%)	(0%)

Question: Which of the following affiliations contributes more to your growth in clinical competence as a family practitioner?

	almost never	once a mo.	once a wk.	almost daily
being a preceptor (n=18)	15%	9%	19%	44%
consultation and educational program at my hospital (n=46)	65%	82%	73%	56%
neither contributes much (n=5)	15%	0%	8%	0%
(no response)	(5%)	(9%)	(0%)	(0%)

Question: Which of the following affiliations do you think contributes more to your patients' regard for you?

	almost never	once a mo.	once a wk.	almost daily
being a preceptor (n=15)	35%	18%	8%	44%
my position(s) in hospital staff (n=12)	10%	27%	19%	22%
neither contributes much (n=38)	55%	36%	65%	33%
(no response)	(0%)	(18%)	(8%)	(0%)
	n=20	n=11	n=26	n=9

*for operational definition, see Table 5.4.

the percentages of those for whom being a preceptor is more important is 18% for those in the "once a month" category, 38% for those in the "once a week" category and 78% for those in the "almost daily" category.

A similar finding emerges from the comparison of overall frequency and the second salience variable, this one focusing on "being a preceptor" versus "consultation and educational programs at my hospital." The percentages saying that being a preceptor contributes more to growth in clinical competence are only half as large as in the previous case. Yet the same pattern is apparent. Again, those in the "almost never" category have the largest percentage saying that neither contributes much. Except for those preceptors in the "almost never" category, the percentage of those identifying the preceptor role as most important rises steeply with increased overall frequency of communication.

On the third salience variable, the regular, progressive increases in percentages identifying the preceptor role as most important is not present. However, the data still show that the largest percentage choosing the "being a preceptor" option is in the "almost daily" category. Again, despite the relatively high percentage of the "almost never" category choosing the preceptor role as most important, a very high percentage of this group also says that "neither contributes much."

Frequency with Full-time Faculty and Perception of Information. Table 5.8 compares a measure of frequency of communication with full-time faculty and three perception of information variables. The group saying they have "never" talked with a full-time faculty member" have, by far, the highest percentage of those saying they "never get" information (42%, as against 6% and 26%). Overall the group most favorable

Table 5.8

Frequency with Full-Time Faculty* By Perceptions of Information

AMOUNT, TIMING. Question: How do you feel about the total amount of information available to you from all sources about the preceptorship program -- and when you get it?

	never	2 mos. or more ago	less than 2 mos. ago
don't get it (n=18)	42%	6%	26%
get it, but too little and too late (n=32)	50%	39%	48%
get adequate information (n=16)	4%	44%	26%
(no response) (n=3)	(4%)	(11%)	(0%)

QUALITY. Question: How do you feel about the accuracy and helpfulness of the information which you get from all sources about the preceptorship program?

	never	2 mos. or more ago	less than 2 mos. ago
accurate and useful (n=30)	17%	61%	56%
accurate, but often not useful (n=11)	21%	17%	11%
useful, but I often doubt its accuracy (n=6)	13%	6%	7%
neither accurate nor useful (n=2)	4%	0%	4%
(no response) (n=20)	(46%)	(17%)	(22%)

CLARITY. Question: How clear is it to you what the College expects you to do as a preceptor?

	never	2 mos. or more ago	less than 2 mos. ago
it's really not very clear (n=11)	21%	6%	19%
not clear, but I decided myself what is needed (n=23)	50%	17%	30%
not clear, but other physicians and I together have worked out what should be done (n=9)	17%	22%	4%
the College has made it sufficiently clear (n=24)	8%	50%	48%
(no response) (n=2)	(4%)	(6%)	(0%)
	n=24	n=18	n=27

*Question: When was the last time you talked with a full-time faculty member in the Department of Family Medicine about the preceptorship program?

in its evaluation of the amount and timing of information is the group saying they talked with a full-time faculty member some time ago. Only one individual (4%) of the "never" group rated the amount of information as adequate.

Again, with respect to "quality" of available information, it is the middle group that gives the highest overall evaluation. Almost half of those who say they "never" have talked with a full-time faculty member declined to answer this question (perhaps because 42% of them had just finished saying that they "don't get" information). However, even with the smaller proportion spread over the response options, this "never" group still registered higher proportions than the other groups in the "not useful" and "doubtful accuracy" categories.

On the clarity variable, those who say they have "never" talked with a full-time faculty member have, by a wide margin, the lowest proportion of those saying that the College has made its expectations clear (8%, as opposed to 50% and 48% for the other two groups). It has the highest percentage of the three groups for preceptors saying that they have responded to the lack of clarity by figuring things out by themselves (50%, compared to 17% and 30%). Again, preceptors who talked with a full-time faculty member two months or more ago have the least unfavorable view of available information.

It is interesting to note that the third category of the clarity variable ("not clear, but other physicians and I together have worked out what should be done") has only one preceptor who has talked with a full-time faculty member within two months, as opposed to four each for the other two groups. This is a clue to the fact that those

who communicate most frequently with physicians about the preceptorship program are not necessarily those who also communicate most frequently with full-time faculty. The following table demonstrates this fact.

Table 5.9

Frequency with Full-Time Faculty By Overall Frequency

overall, with other physicians	frequency with full-time faculty		
	never	2 mos. or more ago	less than 2 mos. ago
almost never	29%	22%	33%
once a month	17%	17%	15%
once a week	46%	28%	37%
almost daily	4%	22%	15%
(no response)	(4%)	(11%)	(0%)

No general pattern of relationship can be seen in Table 5.9 between these two variables, except for the ones which could have been anticipated from the foregoing comparisons of the two frequency measures with the same set of perception of information measures. The preceptors who have communicated two months or more ago with full-time faculty are those who register the largest percentage of most frequent overall communication with other physicians, a finding consistent with their generally more favorable perceptions of information. The very low incidence of "almost daily" communication with other physicians by those who have never talked with any full-time faculty member is consistent with their generally heavier representation in the less favorable categories on the perception of information variables.

Frequency with Full-Time Faculty and Perception of Interest. Table 5.10 compares frequency with full-time faculty and perceptions of the interest of College leaders in the experiences and perspectives of

preceptors. Once again, a larger percentage of those who have talked with full-time faculty two months or more ago have the most favorable perception of available information. Those who have never talked with a full-time faculty member register the smallest percentage in the category representing the most favorable perception, but not the largest percentage with the most unfavorable perception.

Table 5.10

Frequency with Full-Time Faculty* By Perception of College Interest.

PERCEPTION OF COLLEGE INTEREST. Question: How do you feel about the interest of College leaders in your experiences and perspectives as a preceptor?

	never	2 mos. or more ago	less than 2 mos. ago
they have shown no sign of interest (n=12)	17%	11%	22%
I assume they are interested, but they haven't done much to allow me to make my input (n=30)	46%	39%	44%
they're definitely interested and have welcomed receiving my suggestions (n=19)	17%	50%	22%
(no response) (n=8)	(21%)	(0%)	(11%)
	n=24	n=18	n=27

*for operational definition, see Table 5.8.

The group with the largest percentage of most favorable perceptions is the group which reports talking with full-time faculty two months or more ago. It is interesting to recall in this connection that no clear association was apparent between overall frequency and perception of College interest (see Table 5.6 and accompanying text).

Duration of Communication

Three separate measures of duration were included in the study, each focusing specifically upon communication behavior in a specified situation: during hospital rounds, at hospital staff and committee meetings, and at meetings of professional associations. For purposes of comparing the duration variable with perception of information variables, and in the interests of such parsimony of analysis as seems possible in a study of this kind, only one of these duration measures is utilized. This procedure seems justified on the basis that clear relationships were found in comparisons of all three duration measures and the appropriate propinquity variables with which they were compared (see Tables 4.23, 4.26, and 4.30). The choice of which duration variable to use for present purposes was based upon the number of preceptors answering each question. The duration measure with the largest number of responses was the one associated with informal communication of preceptors while in the hospital to see patients.

According to the data presented in Table 5.11, preceptors who recall conversations of more than five minutes' duration more often reported that they "get adequate information" and somewhat less frequently criticize available information as "too little and too late." The proportions of those who talked for more than five minutes are not different for those who characterized available information as "accurate and useful" or "neither accurate or useful." However, those who report having longer conversations substantially less often expressed doubts about its accuracy than those who report shorter conversations (9% and 20%, respectively). Also, 22% of those who talked for more than five

Table 5.11

Perceptions of Information By Duration of Hospital Conversations

AMOUNT, TIMING. Question: How do you feel about the total amount of information available to you from all sources about the preceptorship program -- and when you get it?

	less than 5 minutes	more than 5 minutes
don't get it	20%	17%
get it, but too little and too late	60%	52%
get adequate information	10%	22%
(no response)	(10%)	(9%)

QUALITY. Question: How do you feel about the accuracy and helpfulness of the information which you get from all sources about the preceptorship program?

	less than 5 minutes	more than 5 minutes
accurate and useful	40%	43%
accurate, but often not useful	0%	22%
useful, but I often doubt its accuracy	20%	9%
neither accurate nor useful	0%	0%
(no response)	(40%)	(26%)

CLARITY. Question: How clear is it to you what the College expects you to do as a preceptor?

	less than 5 minutes	more than 5 minutes
it's really not very clear	30%	17%
not clear, but I decided myself what is needed	40%	22%
not clear, but other physicians and I together have worked out what should be done	10%	26%
the College has made it sufficiently clear	20%	30%
(no response)	(0%)	(4%)
	n=10	n=23

minutes report that available information is, while accurate, "often not useful," whereas none of the preceptors reporting shorter conversations did so.

With respect to clarity, differences between those who report shorter and longer conversations emerge in every category. A substantially larger proportion of those who recall conversations of more than five minutes' duration report that "the College has made (its expectations) sufficiently clear" and a substantially smaller proportion say "it's not really very clear" what the College expects. A far higher proportion of those who had longer conversations (26% as opposed to 10% for those having shorter conversations) say that, while expectations are not clear, they have worked out what should be done in collaboration with other physicians.

Initiation of Communication

Two measures on the initiation variables were included in the study. For initiation of conversations in the context of hospital meetings, a relationship seemed present on one measure of activity in hospital affairs, but not on the other. For initiation of conversations taking place at professional association meetings, no relationship was found. Accordingly, both initiation measures are utilized for purposes of exploring possible relationships between initiation and perception of information variables.

Table 5.12 presents the resulting data. With respect to the perceptions of amount and timing of information available from all sources, a favorable perception is reported by a larger proportion of those saying that others generally start the conversations than of

Table 5.12

Perceptions of Information By Measures of Conversation Initiation

AMOUNT, TIMING. Question: How do you feel about the total amount of information available to you from all sources about the preceptorship program -- and when you get it?

	hospital meetings			association meetings		
	I start	others start	about equal	I start	others start	about equal
don't get it	17%	15%	15%	11%	7%	32%
get it, but too little, too late	67%	54%	48%	63%	53%	58%
get adequate info.	17%	31%	33%	26%	33%	11%
(no response)	(0%)	(0%)	(4%)	(0%)	(7%)	(0%)

CLARITY. Question: How clear is it to you what the College expects you to do as a preceptor?

	hospital meetings			association meetings		
	I start	others start	about equal	I start	others start	about equal
it's really not very clear	17%	15%	15%	11%	7%	16%
not clear, but I decided myself what is needed	0%	31%	33%	47%	7%	42%
not clear, but other physicians and I together worked it out	50%	0%	11%	11%	27%	16%
the College has made it sufficiently clear	33%	46%	41%	32%	53%	21%
(no response)	(0%)	(8%)	(0%)	(0%)	(7%)	(5%)
	n=6	n=13	n=27	n=19	n=15	n=19

those who say "I start." Those saying that they typically initiate conversations are more heavily represented in the category of those who say they get information, but get it "too little and too late." These relationships hold for both measures of initiation.

For the clarity variable, once again a favorable perception of available information was more often registered by those who say that others generally initiate conversations. No other clear relationships are apparent on both initiation measures. It must be acknowledged that the very small number of preceptors reporting that they initiate conversations before or after hospital meetings (column 1 in Table 5.12) renders even this cautious analysis a rather tentative undertaking.

Function of Communication

Of the four measures taken on the function variable, two were selected for comparison with perception of information variables. They are the ones associated with communication behavior in the hospital while there to see patients and in preceptors' offices. The selection was made on the grounds that the largest number of preceptors responded to these items and the concurrent factor that these two locations were clearly identified as the most frequent sites of conversations with other physicians about the preceptorship program.

In the analysis which follows, associations will be deemed to exist only in those instances in which similar differences are observed on both measures of communication function.

According to the data in Table 5.13, those preceptors characterizing their conversations as primarily serving to clarify the College's expectations (production) more often than preceptors in other

Table 5.13

Perceptions of Information* By Communication Function in Two Locations

	clarifying College's expectations		general topics, sharing exper.		finding better ways to do job	
	office	hospital	office	hospital	office	hospital
AMOUNT, TIMING						
don't get it	11%	11%	19%	25%	0%	20%
get it, but too little, too late	78%	78%	48%	42%	44%	40%
get adequate information	11%	11%	26%	25%	56%	20%
(no response)	(0%)	(0%)	(6%)	(8%)	(0%)	(20%)
ADEQUACY						
accurate and useful	56%	44%	45%	46%	78%	40%
accurate, but often not useful	11%	11%	16%	17%	11%	0%
useful, but I often doubt accuracy	22%	22%	10%	8%	0%	0%
neither accurate nor useful	0%	0%	3%	0%	11%	0%
(no response)	(11%)	(22%)	(26%)	(29%)	(0%)	(60%)
CLARITY						
it's really not very clear	11%	11%	6%	25%	22%	20%
not clear, but I decided myself what is needed	56%	44%	32%	21%	11%	20%
not clear, but other physicians and I together have worked out what should be done	11%	11%	16%	25%	22%	0%
College made it sufficiently clear	22%	33%	42%	29%	44%	40%
(no response)	(0%)	(0%)	(3%)	(0%)	(0%)	(20%)
	n=9	n=9	n=31	n=24	n=9	n=5

*see Table 5.11 for operational definitions.

categories say (1) that they get information, but too little and too late, (2) that they often doubt its accuracy and (3) that they have found the College's expectations unclear and have responded by deciding on their own "what is needed." On the other hand, those who characterized their conversations as "finding better ways to do our job" (innovation) have a generally more positive view of available information and information distribution than do those in the other two categories. Specifically, none of them express doubts about the accuracy of available information and the highest proportion of them say the College has made its expectations sufficiently clear. In no categories of any of the three perception of information variables do those in the maintenance category register notably higher or lower proportions than those in both of the other function categories.

Table 5.14 compares suggestions for improvement of the preceptorship program and also preferences for sources of information about the program with categories of content-function. There are no notable differences among the preceptors in each of the function categories with respect to whether or not they have specific ideas for improving the program. However, those in the production category much more frequently than the others offered ideas judged by the investigator to be mostly about how the program's administration (operation, management) might be improved, whereas those in the maintenance category more often than the others listed suggestions having mostly to do with the basic conception or "philosophy" of the program. Interestingly, though all three categories of preceptors said they had suggestions, those in the production category actually bothered to write them out more often than those in the maintenance category and far more often

Table 5.14

Suggestions for Improvement and Preferred Source By Function of In-Office Communication

	clarifying expectations	general sharing	finding better ways
IDEAS. Question: Have you ever had any specific ideas about how the preceptorship program could be improved?			
yes	67%	71%	67%
no, not at this time	22%	29%	33%
(no response)	(11%)	(0%)	(0%)
IDEA TYPE. Written suggestions categorized as follows:			
administration of preceptorship program	56%	26%	22%
conception, design or "philosophy" of program	22%	35%	22%
selection of preceptors	0%	6%	0%
criteria for student admission	0%	0%	0%
(no suggestions offered)	(22%)	(32%)	(56%)
PREFERRED SOURCE. Question: Where and how would you most prefer to get your information about the preceptorship program and the College's expectations for your role?			
the present arrangement is sufficient	22%	23%	11%
more, better presentations by officials	11%	13%	33%
small problem-solving sessions	22%	26%	11%
visit to my office by college representative	44%	19%	33%
other	0%	3%	0%
(no response)	(0%)	(16%)	(11%)
	n=9	n=31	n=9

than those in the innovation category.

With respect to where and how they would prefer to get their information, preceptors in the innovation category less often than the others perceived the "present arrangement (as) sufficient" or small problem-solving sessions as a preferable means of getting information. Rather, they said they preferred more and better presentations by College officials in general meetings. "A visit to my office by a College representative" was deemed most preferable by a large proportion (44%) of those in the production category, by a lesser proportion (33%) of those in the innovation category and by only 11% of those in the maintenance category.

Summary

A profile of the entire preceptor population on the perception-attitude variables was presented in a series of three tables. The accompanying text included many illustrative comments of respondents, gleaned both from the questionnaires and from notes taken in face-to-face interviews.

The balance of Chapter V was wholly devoted to comparisons between informal communication variables and the various perception variables. This part of the chapter was organized by headings corresponding to the major informal communication variables, on some of which multiple measures had been taken; frequency, duration, initiation and content-function.

The two most general frequency measures, overall frequency with other physicians and frequency with full-time faculty, were utilized for present purposes, on grounds that the perception variables

also measure preceptors' judgments about their overall experience.

Nine perception variables were compared with the overall frequency variable. In general terms, positive associations were apparent between overall frequency of communication with other physicians and favorable perceptions of (1) the amount and timing of available information, (2) the quality of available information and (3) the clarity of the College's expectations of preceptors. Clear associations were also found between overall frequency (on the part of those who reported at least some interchange with colleagues) and the proportions of those who said that being a preceptor "contributed more" in personal terms than did other professional roles. No relationships were clear in comparisons of overall frequency with (1) choices of the most valuable source of role-related information, (2) preferred source or (3) perceived interest of College leaders in preceptors' perspectives and experiences.

With respect to frequency of communication with full-time faculty, those who have never talked with a full-time faculty member most often reported the least favorable responses on each of four perception variables. However, those in the category representing the highest frequency do not register the most favorable perceptions in proportions as high as those in the category representing a middle range of frequency. This finding must be interpreted in the light of a comparison between overall frequency with other physicians and frequency with full-time faculty. The latter comparison shows that those in the middle range category of frequency with full-time faculty report the highest rate of overall frequency with other physicians. The

overall variable had already proven to be strongly associated with the perception of information variables (though not with the perception of interest variable).

To gauge possible relationships between duration of communication and perceptions of information, the most frequently answered of the three duration measures was selected for comparison. Those whose conversations generally last more than five minutes, compared with those who report shorter conversations, (1) more often reported that they get an adequate amount of information, (2) more often criticize the usefulness of the information they get, (3) less often say that they doubt the accuracy of the information, (4) more often say that the College has made its expectations clear and (5) more often say they have collaborated with other physicians in working out "what should be done" as preceptors.

Both measures of initiation of communication included in the study were compared with the perception of amount and timing variables and with the perception of clarity variable. Those saying that their conversations about the preceptorship program are generally started by others more often report favorable responses on both perception variables.

Two of the four function measures in the study were selected for comparison with perception variables. In general terms, those characterizing their conversations as having to do mostly with innovation report favorable views of available role-related information in larger proportions than either those in the maintenance or those in the production categories. On the other hand, those who report that most

of their conversations are concerned with trying to figure out what is expected of them (production) more often report less favorable views of information than either of the other two groups.

No differences are apparent between the three function categories with regard to whether or not preceptors report having specific ideas about how the preceptorship program might be improved. However, those in the production category much more often than the others offered ideas having to do with how the program should be administered, whereas those in the maintenance category more often made suggestions about the basic design or "philosophy" of the program. Receiving information via a visit to their offices was preferred by a large proportion of those in the production category, by a lesser proportion of those in the innovation category and by a considerably smaller proportion of those in the maintenance category. Those in the innovation category less often than the others perceived "the present arrangement (as) sufficient" and more often favored presentations by College officials in general meetings.

The next and final chapter reports the investigator's conclusions, recommendations and observations.

Chapter VI

CONCLUSIONS AND IMPLICATIONS

This concluding chapter consists of four main sections: (1) background considerations and questions which gave rise to the present study, and the specific problems, limitations and conduct of the investigation; (2) the main conclusions of the study; (3) some implications of the conclusions for medical school administrators; and (4) some recommendations for subsequent research.

Summary

Background of the study. Part-time clinical faculty tend to be poorly integrated into the information systems of their medical schools. They are, first and foremost, community practitioners; only secondarily, even peripherally, are they teachers. Physically removed from the medical school environs, they do not ordinarily particpate in the formal and informal communication networks through which "regular" faculty are inducted, informed and guided, and through which faculty contributions to policy formulation and curricular design are made.

Medical school administrators seek cost-effective means of improving the flow of information to and among volunteer clinical faculty. Formal or official methods (memoranda, workshops, site visits by administrators, etc.) are part of this effort to improve communication. Volunteer clinical faculty are also involved -- to a greater or lesser extent -- in informal or unofficial interchange with each other and with

non-faculty professional colleagues about their College and its program of off-campus clinical education.

If it could be shown that certain formal characteristics of part-time clinical faculty were related to higher rates of informal communication about the College and their role in it, and if it could be further established that such increased communication were positively associated with the incidence of desired perceptions or attitudes, then administrators could be guided accordingly in the selection of clinical teachers and in the conduct of training and support efforts.

Formal and readily determined characteristics of physicians who are clinical faculty members, or who might be considered for appointment, prominently include certain features of their practice setting and patterns of professional activity. Are they in solo or group practice? If they are in group practice, how many other physicians are in the group? Is the practice located in an urban area or a rural area? How far is the practice from the medical school campus? To what extent does the nature of the practice include care of hospitalized patients? How much time does the clinical faculty member, or potential clinical faculty member, devote to hospital board and committee work? How active is he or she in the principal professional organizations?

Answers to these questions yield a measure of the relative propinquity, or nearness in place and time, of physicians with other physician colleagues. Moreover, answers to questions of this sort are easily determined and involve relatively little subjective judgment.

Specific purposes. Accordingly, this present study sought to answer two broad questions with respect to one set of volunteer, part-

time clinical faculty in a college of medicine:

1. Are propinquity factors with respect to practice setting and institutional affiliations associated with differences in self-reported communication behavior?

2. Are characteristics of self-reported communication behavior associated with differences in perceptions of role-related information and information exchange, and with differences in the relative salience of the preceptor role?

Theoretical underpinnings and prior research. General systems theory, especially as developed by James G. Miller, was adopted as a basic theoretical framework within which to elaborate the basic communication concepts explicit or implicit in this study. The centrality of the notion of unpredictability in both general systems theory and field theory was noted, and the contribution of field theorists to an understanding of social-psychological pressures to communicate were reviewed. Both theoretical literature and empirical studies about propinquity as a factor in social interaction were reviewed, drawing upon commentary from a variety of disciplines and research in a variety of social settings. Lastly, those few studies which have compared communication behavior with perceptions of information and other attitudinal outcomes of social interaction were reviewed.

Conduct of the study. The population utilized was comprised of part-time volunteer clinical faculty, or preceptors, appointed in the Department of Family Medicine of the College of Osteopathic Medicine at Michigan State University.

Primary data were gathered by mailed questionnaire. The

questionnaire was developed through a lengthy series of steps in an effort to assure the inclusion of essential variables, an appropriate operational definition of variables and general clarity of language and form.

Analysis of the survey data involved the generation by computer of a large number of tables, each involving the direct comparison of two variables. The majority of variable pairings involved either a propinquity measure and an informal communication measure or an informal communication measure and a perception measure, as entailed by the central purposes of the study. Some additional comparisons were made in an effort to explore possible associations between propinquity variables and several "control" variables.

Limitations of the study. No measures of actual knowledge or of performance were included as outcome criteria against which to compare informal communication behavior.

Data were gathered from volunteer clinical faculty in a single department of one medical school, all of whom are engaged in a single type of practice.

The demonstration of causal relationship is beyond the scope of the study. It is exploratory and descriptive only.

Main Conclusions

Conclusions emerging from the analysis of questionnaire data are summarized in the following sixteen statements. They are grouped under two sub-headings, corresponding to the two broad purposes of this study.

Propinquity and Informal Communication

1. Preceptors in group practice talk with other physicians about the preceptorship program more frequently than do preceptors in solo practice.

2. This difference of solo and group practitioners in overall frequency of communication may be accounted for by the differences in frequency of communication which takes place in the preceptors' offices.

3. Preceptors in larger (urban-suburban) communities talk with other physicians about the preceptorship program somewhat more frequently than do preceptors in smaller (rural-small town) communities.

4. Preceptors whose offices are located within 1/2 hour's drive from the University campus talk with full-time faculty about the preceptorship program only slightly more often than do those farther away and have not more often used the campus as an important locus for conversations about the program.

5. Preceptors who spend considerable time in the hospital visiting patients talk both more frequently and for longer periods with other physicians about the preceptorship program than do those who spend less time in the hospital visiting patients.

6. Preceptors active in board and/or staff committee work in their hospitals have more frequent and longer conversations about the preceptorship program during hospital meetings than do those who are less active in hospital affairs.

7. Preceptors more active in professional associations have more frequent and longer conversations about the preceptorship program at association meetings than do those who are less active.

Informal Communication and Perceptions.

8. Preceptors who more frequently talk informally with other physicians about the preceptorship program more often have positive perceptions of the information available to them from all sources about the preceptorship program.

9. Preceptors who more frequently talk with other physicians about the preceptorship program more often perceive that being a preceptor enhances their professional competence and status, relative to other professional roles.

10. Preceptors who more frequently talk with other physicians about the preceptorship program do not more often have favorable perceptions of the College's interest in their experiences and perspectives as a preceptor.

11. Preceptors who more frequently talk with other physicians about the preceptorship program do not meaningfully differ from preceptors who communicate less frequently with respect to identification of those sources deemed most valuable or with respect to those sources deemed preferable.

12. Preceptors who have never talked with a full-time faculty member in their department more often have unfavorable perceptions of available information and more often have unfavorable perceptions of the College's interest in their experiences and perspectives as a preceptor.

13. Preceptors who generally have longer conversations with other physicians about the preceptorship program more often have favorable perceptions of available information.

14. Preceptors who generally have longer conversations with other physicians about the preceptorship program more often perceive that the College has made clear its expectations and more often respond to unclarity by working out "what should be done" in collaboration with other physicians.

15. Preceptors whose conversations with other physicians about the preceptorship program are generally about "finding better ways to do our job" (innovation) more often perceive available role-related information favorably than do those whose conversations are generally about "clarifying what the College expects" (production).

16. Preceptors whose informal communication with other physicians about the preceptorship program was characterized as having to do mostly with "clarifying what the College expects" (production) more often prefer receiving information via a visit to their offices by a College representative than do those in the innovation category and much more often than those in the maintenance ("general topics, sharing experiences") category.

Implications of Findings about "Control" Variables

Throughout this dissertation, the term "control" has consistently appeared in quotation marks. This practice was adopted to signify that, although this term is conventionally associated with experimental designs, it is used here in the context of a descriptive study. This caveat notwithstanding, the rationale for including "control" factors in the study was to provide some check upon implications drawn from associations between propinquity factors and informal communication, in the event that "control" factors should turn out to be associated

with propinquity factors.

Some such associations between "control" factors and propinquity factors have emerged from the analysis. Length of time in the preceptorship program is related to each of the several propinquity variables with which it was compared. Thus, preceptors in group practice, preceptors practicing in urban areas and preceptors whose offices are located more than one-half hour's drive from the campus have been in the program longer, on the average. Moreover, because length of time in the program seems to be associated with overall frequency of communication, conclusions about relations between such overall frequency of communication and the several propinquity variables must be assessed accordingly.

Because of the finding that the highest frequency of communication is disproportionately associated with preceptors who have been in the program for one year or less, conclusions about the higher frequency of communication among preceptors practicing in groups would seem to be further strengthened. Moreover, the conclusion that urban preceptors talk more frequently about the preceptorship program emerged despite any supposed "advantage" accruing to rural preceptors as a "result" of being new to the program and receiving more visits.

Communication effects which may be speculatively attributed to the "control" or formal participation variables should be viewed within the perspective of data on the overall proportions of the "control" factors. Only twenty-six percent of the preceptors in the entire population have had a visit from a College representative and only 30% have been in the program for one year or less. Given the assumption

of causal relationship for the associations between "control" variables and overall frequency of communication, a much larger proportion of those newer to the program and receiving visits from College officials might conceivably have overturned some of this study's conclusions.

Implications for Administrators

Administrators responsible for the design and conduct of community preceptorship programs in general medicine would be well advised to stimulate informal communication among volunteer clinical faculty. The frequency and duration of such informal interchange is clearly associated with favorable perceptions of available information, with the perceived clarity of the College's expectations and with the personal salience of the preceptor role.

Furthermore, the informal communication of community physicians who volunteer as part-time clinical faculty may be seen as a kind of contribution to the College, just as is their time actually spent with students. The data in this study indicate that, in private offices, in hospital corridors, in meeting rooms and in convention halls, preceptors are -- to greater or lesser degrees -- taking time to talk with one another and with non-preceptor colleagues about the College's program and their own part in it. The phrase "taking time" is significant. When these physicians talk about the preceptorship program, they are taking time from some other activity or pursuit and freely "giving time" to the College and its interests.

When such communication takes place in preceptors' offices or the corridors of their hospitals, as most of it does, it very clearly represents a giving of time which could be directly invested in the

production of additional income. Such "opportunity costs" represented by the informal communication of volunteer clinical faculty deserve to be assessed as genuinely valuable. Moreover, as a kind of contribution to the College and to the medical education enterprise, such an investment should be protected, nurtured and responded to in kind by College leaders.

These data provide some significant clues to ways in which informal communication among clinical faculty may be furthered by medical school leaders.

First, to the extent consistent with other criteria, more preceptors might be selected from among physicians in group practice.

Second, a criterion for selection might be a relatively large amount of time spent in the hospital for purposes of visiting patients.

Third, a criterion for selection might be a relatively active role in the affairs of the hospital.

Fourth, a criterion for selection might be a relatively active role in the principal professional associations.

Fifth, already appointed clinical faculty members who are relatively active in their hospitals, with respect both to patient care and institutional leadership, might be identified for particular attention in efforts to disseminate information.

Sixth, formal programs of orientation, in-service education and problem-solving could be mounted on an area basis in community hospitals to exploit and further stimulate the informal communication already existant in these settings.

Seventh, visitation by preceptorship program administrators or other full-time faculty members to the offices of clinical faculty might be concentrated particularly among those preceptors who are known to be less active in their hospitals and/or in professional associations.

Implications for Further Research

The present study should afford encouragement to students of medical education and professional organizations generally.

First, a high percentage of returns was returned by a population of private physicians, an outcome not often achieved. Success in this instance was probably due to the relatively small size of the population, the identification of the subjects with the institution and the access afforded by the College leaders.

Second, the finding of generally clear associations in a descriptive study suggests that subsequent investigators may more confidently risk the formulation and testing of hypotheses by inferential statistics, e.g., the chi-square or similar tests.

Third, these data indicate that hospital affiliation is a highly salient factor for this population of physicians in general, family practice. This crucial dimension might have been altogether missed by this investigator, had he not conducted preliminary surveys and interviews before constructing his instrumentation. Early assumptions and much advice had suggested that the patient care responsibilities and, by inference, the communication ambit of these family practitioners would be much more limited to office practice.

Fourth, the concepts and other tools of communication research have an applicability to research in medical education which is foreshadowed in the present study. Descriptive investigations and case studies of this kind will further explore the operation of communication behavior as intervening activity between organizational arrangements subject to manipulation or influence by institutional leaders and the various criterion measures on the basis of which those same institutional leaders make decisions among alternative policies or practices. Beyond such relatively unsophisticated methodologies as represented here are more powerful research tools, such as network analysis, now being developed and tested by communications researchers. If the present study, in any substantial way, encourages medical educators to exploit communication research approaches to organizational analysis, it will have served no mean purpose.

APPENDIX

QUESTIONNAIRE

FOR PRECEPTORS IN FAMILY MEDICINE

1. What is your name?

_____
my name

2. How long have you been in the preceptorship program?

_____less than 6 months

_____6 - 12 months

_____more than one year

3. How many times has an official of the College visited you in your office?

_____
No. of visits

4. How many meetings for preceptors have you attended at the campus?

_____
No. of meetings

5. Do you share an office with another physician?

_____no

_____yes

If Yes:

a. How many others?

_____
No. of others

b. How many of the others are preceptors?

_____
No. of other preceptors

6. Please check the response which best describes the location of your office.

_____urban-suburban

_____rural-small town

7. How long does it take you to drive to the MSU campus in good weather?

_____1/2 hour or less

_____more than 1/2 hour

8. In your office or on your telephone, about how frequently do you usually talk with other physicians about the preceptorship program?

_____almost never

_____once a month

_____once a week

_____more than once a week

9. When you talk about the preceptorship program with other physicians in your office or on your telephone, what do you most frequently talk about?

_____clarifying what the College expects

_____general topics, sharing experiences

_____finding better ways to do our job

_____other (please specify):_____

_____don't have such conversations

10. On the average, how much time do you spend in the hospital each week when you go there for the purpose of seeing patients?

_____
hrs./wk.

11. When you are in the hospital to see patients, about how much time do you usually spend talking with other physicians each week about anything whatever?

_____
hrs./wk.

12. In the past <u>month</u>, can you recall having any conversations with other physicians about the preceptorship program while you were in the hospital to see patients?

_____no

_____yes, once or twice

_____yes, three or more times

If Yes:

a. What did you talk about?

_____clarifying what the College expects

_____general topics, sharing experiences

_____finding better ways to do our job

_____other (please specify):_____

b. Did at least one of these conversations last more than five minutes?

_____no

_____yes

_____can't remember

13. Relative to other members of your (principal) hospital's staff, would you describe yourself as "more active than most" in the affairs of the hospital?

_____yes - more active

_____about average

_____no - less active

14. Excluding regular meetings for the entire staff, about how much time do you presently spend in hospital board or committee meetings in an average month?

_____
hrs./month

15. At hospital staff or committee meetings, how frequently do you talk with anyone about the preceptor program?

_____almost never

_____once a month

_____more than once a month

16. When you talk about the preceptorship program with physicians at hospital staff or committee meetings, how long do these conversations generally last?

_____don't talk

_____less than 5 min.

_____more than 5 min.

17. Who generally starts these conversations?

_____others start

_____I start

_____about equal

18. What do you talk about in these conversations?

_____clarifying what the College expects

_____general topics, sharing experiences

_____finding better ways to do our job

_____other (please specify):_____

_____don't have such conversations

19. How active are you in your district osteopathic medical association at this time?

_____don't attend

_____attend some meetings, but no or little committee work

_____attend most meetings, serve on committees

_____officer or chairman of major committee(s)

20. How active are you in the state-wide association (MAOP&S)?

_____don't attend

_____attend some meetings, but no or little committee work

_____attend most meetings, serve on committees

_____officer or chairman of major committee(s)

21. Before or after osteopathic association meetings, how frequently do you talk with anyone about the preceptorship program?

_____almost never

_____once every 3 - 4 meetings

_____ at least once every meeting

22. When you talk about the preceptorship program with other physicians before or after an osteopathic association meeting, how long do these conversations generally last?

_____less than 5 min.

_____more than 5 min.

_____don't talk

23. Who generally starts these conversations?

_____others start

_____I start

_____about equal

_____don't have such conversations

24. What do you talk about in these conversations?

_____clarifying what the College expects

_____general topics, sharing experiences

_____finding better ways to do our job

_____other (please specify):_____

_____don't have such conversations

25. Where do you most frequently have conversations with other physicians about the College or the preceptorship program? (Please put a "1" by the most frequent location and a "2" by the second most frequent location.)

_____in my office or on my telephone

_____in the hospital

_____at osteopathic association meetings

_____at the College's facilities on campus

_____other (please specify):_____

26. Which ONE of the following sources of information has been most valuable in your role as a preceptor?

_____journals and formal presentations at conventions

_____mailings from the College

_____full-time faculty members and/or the Director of Education at your hospital

_____other physician colleagues and students

_____other (please specify):_____

27. How clear is it to you what the College expects you to do as a preceptor? (Choose the one answer which best fits your perceptions.)

_____it's really not very clear

_____not clear, but I decided myself what is needed

_____not clear, but other physicians and I together have worked out what should be done

_____the College has made it sufficiently clear

_____other (please specify):_____

28. On the average, during periods when you have a student, how frequently do you talk with other physicians about some aspect of the preceptorship program?

_____almost never

_____once a month

_____once a week

_____almost daily

29. When was the last time you talked with a full-time faculty member in Department of Family Medicine about the preceptorship program?

_____never

_____less than 2 months ago

_____2 months or more ago

30. How do you feel about the total amount of information available to you from all sources about the preceptorship program -- and when you get it?

_____don't get information

_____get it, but too little and too late

_____get adequate information

31. How do you feel about the accuracy and usefulness of the information which you get from all sources about the preceptorship program?

_____it's accurate and useful

_____it's accurate, but often not useful in my situation

_____it's useful, but I often doubt its accuracy

_____it is neither useful nor accurate

32. Have you ever had any specific ideas about how the preceptorship program could be improved?

_____yes

_____no, not at this time

If Yes:

a. Have you shared your idea(s) with other physicians?

_____no

_____only briefly

_____considerable discussion

b. Have you ever communicated your idea(s) to any full-time faculty member of the Department of Family Medicine?

_____yes

_____no

c. Briefly outline your suggestions in the space below.

_____

_____

_____

_____

33. How do you feel about the interest of College leaders in your experiences and perspectives as a preceptor?

_____they have shown no sign of interest

_____I assume they are interested, but they haven't done much to allow me to make my input

_____they're definitely interested and have welcomed receiving my suggestions

34. Where and how would you most prefer to get your information about the preceptorship program and the College's expectations for your role? (Check one only.)

_____the present arrangement is sufficient

_____more, better presentations by officials at general meetings

_____small discussion and problem-solving sessions

_____a visit to my office by College representative

_____other (please specify):_____

35. Which of the following affiliations contributes more to your growth in clinical competence as a family practitioner?

_____being a preceptor

_____consultation and educational programs at my hospital

_____neither contributes much

36. Again, which of the following affiliations contributes more to your growth in clinical competence as a family practitioner?

_____being a preceptor

_____participation in professional associations

_____neither contributes much

37. Which of the following affiliations do you think contributes more to your patients' regard for you?

_____being a preceptor

_____my position(s) in the hospital staff

_____neither contributes much

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