1996

Discourse analysis of elderly patient medical encounters.

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DISCOURSE ANALYSIS OF ELDERLY PATIENT MEDICAL ENCOUNTERS

by

PATRICIA SAWYER BAKER

A DISSERTATION

Submitted in partial fulfillment of the requirements for the degree of Doctor of Philosophy in the Department of Sociology in the Graduate School, The University of Alabama at Birmingham

BIRMINGHAM, ALABAMA

1996

ABSTRACT OF DISSERTATION
GRADUATE SCHOOL, UNIVERSITY OF ALABAMA AT BIRMINGHAM

Degree Ph.D. Major Subject Medical Sociology

Name of Candidate Patricia Sawyer Baker

Title Discourse Analysis of Elderly Patient Medical Encounters

A growing proportion of medical interviews are between physicians and elderly patients who are accompanied by another person (triads). This transcript-based study analyzed communication patterns of information-giving and seeking of these triads. Of 88 audio recordings of older-patient medical encounters, 36 had accompanying persons, and were analyzed descriptively. Sixteen unaccompanied patient-physician encounters (dyads) were matched to 16 triads on patient characteristics of age within 5 years, race, gender, clinic status, and severity of illness to isolate the effect of third persons on physician-patient interaction and length of the encounter.

After transcription and timing, coding provided measurements that identified the proportion of participation for all persons in the pre-physical, physical examination, and post-physical portions of the encounter. A measure, called "physician orientation," quantified physician attention to patients and to third persons. Content areas suggested by geriatric assessment guidelines were used to compare dyads and triads.

The patients had a mean age of 75, were 69% male, and 67% African American. Over half were first time clinic users; 61% were rated by the physician as moderately or extremely ill. Accompanying persons were predominately female (86%) and family members (83%). Specific physician orientation to patients changed during the encounter, comprising 68% of physician initiations in the pre-physical, 74% during the physical examination and 51% post-physical. Third persons responded to 8% of questions directed to the patient. The combined information-seeking by both patients and accompanying persons accounted for only 4% of the total information exchange with patients asking an average of 4.3 questions and third persons 3.4.

Comparison of triadic to dyadic encounters showed that there were no significant differences in length of the encounter, or in any measure of information exchange when the contributions of patient and third persons were combined. Since unaccompanied patient's contributions are equivalent to the combined contributions of patients and third persons, the presence of the third party is associated with decreased patient participation in the medical interview. Reported memory problems were discussed significantly more often in triads. Other differences suggest that patients' problems related to functional independence are more likely to be discussed in triads.

Abstract Approved by: Committee Chairman Jeffrey Michael Clair

Program Director

Date 7/4/96 Dean of Graduate School

ACKNOWLEDGMENTS

There is no way to adequately acknowledge the contributions of others to the completion of this dissertation. First and foremost, I would like to thank my committee chair, Dr. Jeffrey Clair, who has acted as both a mentor and a friend throughout my graduate career. It would be impossible to assess the gratitude I feel for him and the other members of my committee: Dr. William Yoels, Dr. Michael Wrigley, Dr. Richard Allman, and Dr. Alan Stamm. In sharing their time, knowledge and expertise, they have inspired me.

I want to also thank my children, Monya, Claudia, Andrew, Daniel, and especially Karyn. Their support and encouragement maintained my efforts.

Finally, this work is the product of encouragement and guidance from many others left unnamed. To them and to all those who have contributed, I offer my deep sincere thanks.

The data used in this research was collected in part through a grant from the AARP Andrus Gerontology Foundation (Jeffery M. Clair, PI).

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CHAPTER 1

Introduction

The aging demographic structure of the United States has created a growing proportion of encounters between geriatric patients and physicians. Geriatric medicine is now recognized as a discipline of health care delivery. At the same time, the process and content of medicine has changed in the twentieth century to reflect both altered perceptions of disease and changing conceptions of the role of physician and patient. Despite the need for physicians to utilize specialized geriatric patient care strategies, research on communication in elderly patient-physician interactions is inconclusive and far from abundant.

Conversation is essential to all medical practice. The general medical encounter can be viewed as an opportunity to create a good interpersonal relationship, exchange information and negotiate treatment (Ong, de Haes, Hoos, & Lammes, 1995; Street, 1992a). The verbal component of medical encounters can not be underestimated: *60-80%* of medical diagnosis and treatment decisions may originate *from the interview itself* (Frederikson, 1995). Conceptually this process most often unfolds during dyadic medical encounters, with the physician interviewing the patient and the patient inter-viewing the doctor (Charon, Greene, & Adelman, 1994).

Although the focus has been on the dyadic relationship of patients and physicians, previous studies indicated that between 20% and 57% of elderly patients were accompanied by another person in medical interviews (Greene, Adelman, Charon, & Hoffman, 1986; Beisecker, 1988). Preliminary studies suggest that the presence of a third person may hinder the development of a patient-physician relationship (Greene, Majerovitz, Adelman, & Rizzo, 1994). The change from a dyad to triad has specific communication consequences for medical interviewing, and physicians may have difficulty dealing with two people having different and possibly conflicting needs (Beisecker, 1988, 1996). Additional research is needed to corroborate current findings and to provide additional insight about elderly patient-physician interactions, particularly when an additional person accompanies the patient.

Statement of Purpose

Information regarding triadic medical encounters with elderly patients is limited and has focused on the coalitions formed when a third person is present. I have considered two aspects of triadic medical encounters: 1) physician information-seeking and giving, and 2) patient autonomy and social identity. This work integrates qualitative and quantitative analyses to discover how interactions of patients and physicians are negotiated when a third person is present. I have evaluated the effect on the physician of having a third person present by analyzing a) time, b) information exchange, and c) topic initiation within the interview. I focus on the interactional dynamics of information exchange and content areas to explore the physician's evaluation of the patient as an independently functioning adult. In addition, I have defined the contribution of the third

person's input to the encounter as a combination of self initiated participation and specific inclusion by the physician.

This work is atypical in that it is transcript based, enabling a detailed analysis of conversational interaction between all participants. It adds to a growing but limited literature based on actual triadic medical encounters of first-time patient visits. I have identified attributes of those patients bringing additional persons as well as the characteristics of those accompanying them. The initial part of this study explores conversational patterns of information-seeking and information-giving. Specific contributions of each party are enumerated in pre-physical, physical, and post-physical portions of triadic medical interviews.

The second component of this research compares triadic elderly patient-physician encounters to dyads of physicians and patients based on matching patient characteristics to isolate the effect of the additional person. A feature unique to this project is that patients are not only matched on gender and race, but age within 5 years, and severity of illness as assessed by the physician. Although previous studies have used first time visits, I also have matched on first time to the clinic and first time to the particular physician. Time, silence, control of the conversation through topic initiation, and information-seeking/giving are compared. Greene, Hoffman , Charon, and Adelman (1987) have shown physicians to be less responsive to elderly patient's psychosocial concerns. I also examine the contextual evaluation of topics considered essential to geriatric assessment and patients' social roles.

Results of this research highlight the diversity of situational influences on the process and structure of elderly medical encounters with third person participation. Unlike pediatric encounters, there is much more variation when the patient is an elder, paralleling the wider diversity of elderly persons in general (Williams, 1994). This analysis identifies potential barriers to effective communication; incorporating the results into training programs for medical students and residents (physicians-in-training) will enhance their treatment of elderly patients. Although geriatric medicine is a specialty, most of its practitioners will be generalists, either family physicians or internists who need to understand the interaction dynamics when a third person is present.

Theoretical Background

Three distinct sociological perspectives are integrated into this investigation. Kemper (1978) notes that the deference accorded physicians by both patients and the additional persons are explicable in view of the extended model of power and status that underlie all social relationships. Within every social encounter it is necessary for one person to take the leadership role; in the medical interview this derives from physician status and the power of the physician to withhold resources, leading to patients' voluntary compliance. Allman, Yoels, and Clair (1993) note that physician resources include the control of time, information, future access to the health care system and legitimation of the patient's presentation of illness. With a third person there is the added potential to legitimate the third person's position in the health care triad. Both the consensus model (Parsons, 1951) in which the physician's role is characterized by high status and control and the discrepancy model (Friedson, 1970) in which the physician maintains authority to

advance patients' interests, predict an asymmetrical relationship between physicians and patients which is likely to extend to a third person (Meeuwesen, Schaap, & van der Staak, 1991).

In changing from a dyadic to triadic interaction the interactional dynamics are completely different as described by Simmel (see Wolff, 1950). When there are two subordinates instead of one, the sociological situation differs in that coalition formation is suggested instead of solidarity. The non-partisan person in the group may remain unconcerned about the contrasting interests of the other two or can act as a mediator, being equally concerned with both of their interests. The equality of distance to both the other participants insures impartiality. In contrast, if the superordinate person becomes involved in the decision process, their role can be considered as arbitrator. Within medical encounters, both the patient and caregiver enter subject to physician authority; alignment is possible in any of the mathematical variations of two united against the other.

The patient enters the encounter already in a subordinate position as described above. The physician's impression of a new patient follows patterns described by Goffman (1959; 1963). Clues from conduct and appearance may allow the application of untested stereotypes (Yoels, Clair, Ritchey, & Allman, 1993); by presentation alone the elderly patient affects the initial response of the physician although events within the interaction may cause reevaluation. In the case of the elderly patient accompanied by another adult, there is an additional factor discriminating the patient from others of the geriatric category, namely, being seen as a potentially dependent person. It would seem

that this would fit the classic definition of the stigmatized, a phenomena in evidence from the start of the interaction, signaling to the physician that the patient is already "*discredited*" (Goffman, 1963). Goffman predicts that although there may be no overt recognition of that which is discrediting, "careful disattention" can result in an uncertain and ambiguous situation. The implication for medical encounters is that, whether the physician's addresses or ignores the third person, the discrediting effect may be produced by the appearance of an additional party. The patient's competence as an historian may be in doubt *even before* any questions are asked. Moreover, as Goffman explains, "the issue still remains as to how much it [presence of a discriminating factor] interferes with the flow of interaction" (Goffman, 1963, p 49). Although Goffman does not particularly address age as a stigmatizing condition, he implies that familiarity with approaching agedness can facilitate understanding the predicament of other stigmas. Goffman does, however, refer to the importance of health care professionals in defining a person's identity (1963, p 35).

Conversation is identified by Berger and Kellner (1964) as the paramount factor in the construction of a social identity. Although speaking of the marriage relationship, the importance of conversation with one's personal physician also would seem to fit the pattern of "sustaining the reality of the world through conversation with significant others" (Berger & Kellner, 1964, p 373). Physicians' impact on the geriatric patient's social identity cannot be overstated. Especially in the case of first time presentations, the physician imparts what Berger and Kellner call *validation* (1964, p 372) of the individual's place in the world. The conversational structure and content of geriatric

medical encounters may have intended and unintended consequences for the elderly patient's sense of identity.

These perspectives suggest accompanied older patients will be at a distinct disadvantage in the physician-patient interaction. According to Simmel, the additional person serves to further subordinate the patient to the physician (Wolff, 1950) while providing signals to the physician that the patient is not an independent person. If the elderly patient is to participate in patient-centered health care they must overcome the "disempowering process" (McWilliam, Brown, Carmichael, & Lehman, 1994) which may intensify when an elderly person is accompanied.

Literature Review

Although geriatric patients represent a diverse group, they are seen as presenting particular challenges and frustrations to physicians (Anderson, 1991a; Anderson, 1991b; Root, 1987). Many studies have compared aspects of the medical interviews of younger and older patients. Marshall (1981) noted that older patients are likely to have less education and a lower social class standing than their physician which places the patient at a power disadvantage. Greene et al. (1986) found evidence of "ageism" in the behaviors of practitioners interacting with elderly patients. Less diagnostic testing in the elderly was noted in an analysis comparing therapeutic procedures and the use of diagnostic tests with younger and older patients (Radecki, Kane, Solomon, Mendenhall, & Beck, 1988). Elderly patients had the least participation in visits with their doctors, particularly after the age of 75 (Kaplan, Gandek, Greenfield, Rogers, & Ware, 1995). Beisecker (1988) defined "consumerist" behaviors as comments made by patients to seek

information, suggest or evaluate treatments, and assertive comments challenging the physician. She found that although patients over the age of 60 had less consumerist attitudes about the provision of health care, their verbal behavior was not any different from that of the younger patients--both were equally non-participative. Greene, Hoffman, Charon, and Adelman (1987) noted that both patients and physicians raised fewer psychosocial concerns in encounters including elderly patients. Adelman, Greene, and Charon (1991) suggest that the presence of multiple and chronic medical problems differentiate the course of medical encounters for older and younger patients.

One question that has been addressed is whether or not medical encounters with elderly patients take more time than those with younger patients. Results of studies of unaccompanied elderly patients have been inconclusive. Smith, Martin, Langefeld, Miller, and Freedman (1995) found that physicians' practice patterns accounted for more of the variability of time spent with patients than either clinic or patient characteristics. One confounding factor is the type of visit, whether a new visit or a return. A recent study by Bertakis, Helms, Callahan, Azari, and Robbins (1995) found that female patient gender and health status were factors associated with the length of the visit, although age was not specifically addressed. They do note, however, that the female patients were generally sicker. Radecki, Kane, Solomon, Mendenhall, and Beck (1988a) found that although first time visits were longer than return visits, for all visits less time was spent with elderly patients. This occurred across several medical specialties. A previous study by Baker (1993) found no differences in length associated with patient age.

Not much is known about accompanied older patients. Although age is not mentioned, one study reported that all accompanied patients had longer encounter times (Marvel, Schilling, Doherty, & Baird, 1994). Others have also observed that accompanied elders had slightly longer encounters (Greene, Majerovitz, Adelman, & Rizzo, 1994; LaBrecque, Blanchard, Ruckdeschel, & Blanchard, 1991). However, it has been noted that accompanied elderly patients are frequently older and sicker than unaccompanied older patients, suggesting that health status may be a contributing factor.

Communication Within Medical Encounters

If improved communication is a goal of medicine, analysis of how language and conversation operate in the context of medical encounters is necessary. The medical interview has been described as an interaction not of individuals, but an encounter of persons assuming roles (Robins & Wolf, 1988; Larsson, Saljo, & Aronsson, 1987). Features of medical discourse that contribute to aspects of social control have been identified by Mishler (1984) and Waitzkin, Britt, and Williams (1993, 1994) as the exclusion of a troublesome "lifeworld" or social context during the presentation of symptoms. However, Street (1991) notes that although one can argue that patients have little control over the communicative content and structure of the medical interview, it also is evident that all conversation is "an enterprise that is *mutually* constructed by the interactants." Co-ordination is required for topic development and turn-taking such that patients have the potential to exert considerable control over the physician's behavior; communication within medical encounters develops as a process of mutual and personal influence as interactants adapt their communication to each other (Street, 1991, 1992b).

That patients do not choose to participate is a result of the interactional dominance granted to the physician (Roter & Frankel, 1992), and Clair (1990) notes that physicians actively control topics by questions, silence, and the use of the medical record (also see Yoels & Clair, 1994).

Information exchange in the form of diagnosis and medical advice comprised two thirds of the speech of both parties in a study by Winefield and Murrell (1992). They note that the general medical encounter can be seen as an exchange of information aimed at the relief of the patient's presenting symptoms. Roter and Frankel (1992) reported that question-asking is second to information-giving and that physician question-asking comprised one quarter of all physician verbal behavior. Consistent with others (Street, 1991; Greene, Majerovitz, Adelman, & Rizzo, 1994; Beisecker & Beisecker, 1990) they reported little patient questioning or topic initiation.

Empirical studies of elderly patient-physician triads are recent and limited. Adelman, Greene, and Charon (1987) set the research agenda to study coalitions that might form in the course of the triadic medical encounters, noting that the third person may inhibit or facilitate the physician-patient relationship. They identified research questions assessing content, the development of a trusting relationship, patient satisfaction, patient consent for the additional person's presence, physician evaluation of the patient, the potential change in the coalitions formed over a single and successive encounters and the nature of the relationship to the third person. In a detailed study of 15 triadic medical encounters matched to 15 dyads on the basis of patient and physician race and gender, Greene, Majerovitz, Adelman, & Rizzo (1994) concluded that the specific

content and the quality of interactional processes of physicians were not affected by the presence of a third person. They noted that older patients in triads raised fewer topics in all content areas than those in dyads. Other differences were that the patients in triads were less assertive and expressive. Patients also were excluded from the conversation at times. Although talking of pediatrics, Maynard (1991) shows how doctors and parents participate in discourse in the manner to create the child as a clinical object by the way questions are posed and directed. This potential also exists for the elderly patient triadic medical encounter as can be inferred from Beisecker's study (1988) reporting on companion's participation in 83% of 21 older patient encounters. She observed that patients may be overlooked as the companion becomes the conveyor of information between the doctor and the patient regarding topics such as symptoms, medications and compliance. Beisecker (1996) calls attention to the advantages of health care professionals encouraging older patients to be dependent.

Clinical assessment differs for older patients in that disease is likely to be chronic and progressive, and specific problem complexes are often emphasized rather than diagnostic categories (Hazzard, 1994). Whether done as part of a comprehensive geriatric assessment or a shorter model, screening is advised for cognitive impairment, depression, problems of mobility, poor nutrition, vision and hearing, overall functional status, urinary incontinence, home environment, and social support (Siu, Reuben, & Moore, 1994). The relationship of this assessment to triadic encounters has not been specifically addressed.

Winefield and Murrell (1990) caution that the interview should not be the unit of analysis since "the dynamic nature of the helping relationship suggests that the definable

stages of a consultation deserve separate analysis." Although many methods of sequencing medical encounters have been suggested, Stiles, Putnam, James, and Wolf (1979) have shown that separating the interview into portions of medical history, physical examination and concluding sections is effective and reliable. Application of this approach has been missing from triadic encounters.

Successful information exchange not only optimizes physicians' abilities to discern the complaints and expectations of patients (Frankel, 1984; Werthheimer, Bertman, Wheeler, & Siegal, 1985), but it has been shown that both patient and physician satisfaction are associated with communication style (Baker & Connor, 1994; Winefield & Murrell, 1992). Stewart's (1995) review of the literature found that of 21 studies of patient satisfaction with communication, 16 reported positive outcomes. The quality of communication influenced such outcomes as emotional health, symptom resolution, function, and physiologic measures such as blood pressure, blood sugar levels, and pain control. Additional outcomes associated with increased patient satisfaction include adherence to medical regimens, recall and understanding of information (Ong, de Haes, Hoos, & Lammes, 1995; Hall, Roter, & Katz, 1988; Kaplan, Greenfield, & Ware, 1989).

Effective communication empowers the physician in reaching the goals of evaluation, diagnosis, and developing a treatment plan. Therapeutic aspects of the physician-patient relationship are strongly influenced by communication ability (Novak, 1987; Suchman & Matthews, 1988). Barriers to good communication, whether they come from patient or physician, prevent participants from experiencing a satisfactory

medical encounter (Baker & Connor, 1994). The sacrifice of autonomy resulting from the presence of a companion in triadic encounters may be such a barrier for the patient.

CHAPTER 2

Research Design and Methods

Research Questions

The initial focus of this study was to identify characteristics of older adults who bring an additional person to their medical encounters, to identify characteristics of the accompanying persons and to provide a descriptive overview of speech patterns and the flow of conversation during these triadic interactions. I had assumed that these third persons could be classified as caregivers, however, it appears that the situation is far more complicated. These additional participants are hereafter referred to as third persons or "thirds." The effects of the presence of this third person on both the patient and physician were considered, to isolate the function of third persons as independent contributors to the conversation and as possible detractors from the interaction of physician and patient. The first part of the analysis addresses these questions. A comparison of triads (interaction with the physician, patient and a third person accompanying the patient) to dyads (physician-patient interaction) is the basis of the second analysis. The matched sample design based on patient characteristics emphasizes the differences in structural features and content areas of the conversational patterns between accompanied and unaccompanied patients' encounters. In both instances, the particular emphasis is on verbal information-giving and seeking in which the third person has the potential to

participate. Only interaction between the patient and/or third person and the physician was considered, not the minimal direct interaction of patients and third persons that occurred in this sample. The medical encounter is treated as a sequence of three distinct components, classified here in reference to the physical examination, but consisting of the determination of presenting symptoms and medical history taken before the physical exam, the physical exam itself, and the diagnosis, treatment plans and conclusion which follow (see Stiles, Putnam, James, & Wolf, 1979).

Patterns Within Triadic Medical Encounters

Participants

The focus of the analysis is the patients who bring additional persons into the medical encounter, specifically age, race, sex, marital status, living situation, and severity of illness. Third person characteristics, age, race, and sex, as well as the relationship of the third person to the patient and whether or not the third person is a member of the patient's household are described.

Structural Features of Triadic Medical Encounters

Specific questions focus on the length of the encounter by portion and total, and the presence of the third person during pre-physical, physical examination and post-physical components of the exam.

Patterns of Conversation

The focus is on turn-taking and responses to questions. The quality of information exchange, that is how information-giving and seeking is divided among the participants, is explored by looking at the a) initiation of topics; b) information-giving

and seeking by all participants; c) physicians' orientations to the third person; and d) response patterns of patients and thirds to physician questions. Additionally, the features of information exchange described above were examined to see if patterns differed in pre-physical, physical examination and post-physical portions of the encounter.

Comparison of Dyads and Triads

Triadic encounters of patient, third person and the physician were matched to patient-physician dyads by patient characteristics including age within five years, race, sex, status at the clinic (either a transfer to a new physician or a first time clinic user), and severity of illness as rated by the physician (dichotomized as "not or mildly ill" or "moderately or extremely ill").

Specific comparisons and expectations included:

1. The length of the encounter was expected to be longer for the triads.

2. The proportion of silence to the length of the encounter was expected to be less with the added participants.

3. Information given by patients and thirds was hypothesized to be greater than that of the dyads since there are two potential respondents to physician questions.

4. Information given by the physician would not differ, since information can be directed simultaneously to both persons at the same time.

5. Information sought by the combination of patients and thirds was expected to be greater than that of dyads since the patient and the third person have differing agendas.

6. Information sought by the physician was not expected to differ since the physician needs a finite amount of information.

7. Initiation of topics was hypothesized to be greater for the patients and thirds together since this would be a reflection of the greater potential for patient and third information-seeking.

8. Differences in items assessed by physicians, for instance, functional abilities, mental ability, transportation, roles, and social support (see Appendix A), were expected to differ in the triadic and dyadic interactions as a result of the possible assessment of dependence attributed to persons accompanied by others to the medical encounter.

The Sample

The encounters used in this study are part of a larger research project of doctor patient communication in which recordings were collected at out-patient clinics of an urban university's medical center over a two year period. All encounters are first time visits with a particular physician although patients may have been seen at the clinic previously. Approximately half of the clinics scheduled over the course of the study were attended at two of the sites and are the source of 83 of the encounters. The primary criterion for selection was new patient status. This included first, patients new to the clinic and to the physician (*new-new*) and second, those patients not new to the clinic but who were transferred to a new resident physician (*transfer-new*). Sampling patients from the clinic new appointments list was not practical since lists were often changed at the last minute and patients might not appear for scheduled appointments. As a result we tried to approximate a random sample of all new-new and transfer-new patients who appeared for appointments by selection of the first such patient to arrive for an appointment during the morning or afternoon clinic covered. If two eligible patients

arrived simultaneously, those accompanied by others were selected before choosing unaccompanied patients.

For encounters to be included in this study patients had to be 60 or older. Of the 88 tapes available of older patients, patient age ranged from 60 to 95 years with a mean of 72.8 (standard deviation of 7.6 years). In terms of race and gender, the sample is representative of the combined clinic populations, being 50% male and 76% African American. New-new encounters represented 52% of the total, and 51% of the patients were classified as "not or mildly ill" by the physicians. A designated caregiver was indicated for 25% of the patients; lack of a designated caregiver, however, does not necessarily indicate that the patient was not a recipient of care. The clinic populations are not representative of the general population in terms of socioeconomic status (SES) with disproportionately lower income and education.

Physicians from the university's Division of General Medicine or Geriatric Medicine served as attending physicians in the clinics. This data set includes 52 resident physicians (72% male; 91% white). Most of the physicians (84%) were between 26 and 30 years of age. Approximately half of the encounters (47%) were with first year residents; one-fourth (27%) were with second year residents and one-fourth (26%) with third year residents or attending physicians.

The first sample, 36 encounters, was composed of all encounters having both patients and thirds present together. The remaining dyadic encounters were used as the source of a control group, matching as many as possible of the triads on the basis of age

(within 5 years), sex, race, status at the clinic, and severity of illness. This paired sample was used for the second analysis.

Methods

Audiotaped medical encounters were first transcribed according to transcript notation conventions introduced by Jefferson (1978) with minimal modifications (Appendix B). Initial review of the typed transcripts focused on identifying and timing the following portions of the encounter: pre-physical, physical examination, and post-physical. The smallest unit of silence timed is one second; other pauses and hesitations are indicated by punctuation. Following the designation of Sacks, Schegloff, and Jefferson (1984) of "significant silence" granting speech potential to participants, silences of over two seconds duration were summed to measure the proportion of silence within the exam. This measurement was used only in the comparison of dyads to triads.

These transcripts were then analyzed by a coding system, VEXIS, the Verbal Exchange Initiation System (Baker, 1993; Baker & Clair, 1995). This system is an adaptation of the interaction exchange system developed by Sinclair and Coulthard (1975) in which initiatory, response, and follow-up speech acts are classified into sequences called exchanges. Using the concept of adjacency pairs introduced by Sacks (1967, cited in Coulthard, 1985), conversation can be analyzed as complementary pairs of utterances. These pairs can be classified by function, with the nature of the first utterance predicting the type of verbalization that follows. As suggested by Sinclair and Coulthard (1975) an exchange is the minimal interaction in communication, from which sequences develop. Speech turns can be separated into the components of individual exchange

sequences. For example, the following segment is one speech turn, but it can be analyzed as having three elements: (a) acknowledgment of a preceding question; (b) a summary of information given; and (c) a question that in turn elicits another response:

D: Okay. These were given to you by Doctor L. Was that in the emergency room?

In this system, exchanges are identified not by grammatical category but by the function of the spoken words. Whereas utterance can be used to define everything said within a single speech turn, one utterance can consist of a combination of functional speech units. Using VEXIS, the basic functions of initiatory speech include the transmission of information, the direction of physical behavior and structuring the conversation. Only those exchanges involved in the verbal transmission of information are considered here. This includes *eliciting* exchanges, used to request information, and *informing* exchanges, used to transmit information but not in response to an eliciting exchange. *Prescribing* exchanges, in which direction for future behavior is indicated, were recoded as informing exchanges for this analysis. In a previous study of 88 physician-patient dyads these two exchange types accounted for 82% of physician initiated exchanges and 98% of patient initiated exchanges. Other interactive of exchanges initiated by physicians mostly involve the direction of physical behavior (Baker, 1993). Examples of eliciting and informing exchanges initiated by physicians are given below. (Details of the exchange types are described in Appendix C.)

Example 1. Eliciting exchange:

D: Have you had uh any problems with vomiting?

P: No sir.

Example 2. Eliciting exchange:

D: So basically it sounds like you've been doing pretty well, never been admitted to the hospital except for that [is that right?]

P: [Except for that,] that's all.

Example 3. Informing exchange:

D: You have a good family history as far as heart disease is [concerned.]

P: [Umm hmm.]

Example 4. Informing exchange:

D: I think you need to have your stomach seen about, but I think you need to have (1) your (2) esophagus seen about too, while you're, having problems swallowing, still.

Coding and Variables

Each exchange considered here is coded with the type of exchange (e = eliciting exchange; i = informing exchange), the person initiating the exchange, the person to whom the exchange is directed, the person who answers or acknowledges the exchange and a second person who answers or acknowledges the exchange. The physician is coded as 1, the patient as 2 and the additional person as 3. Persons are designated as 0 = ambiguous if in column 3, no response if in columns 4-5. Since each elicit has two basic components, information-giving and information-seeking, responses can be counted from the number of questions asked. The focus of this analysis is on conversation between the physician and the patient and/or third; conversational exchanges between patient and

thirds are coded but not used. Additionally, there are elicits that are coded as incomplete although they are not considered in this analysis.

For example, a physician elicit can have one response (by patient or third) or two responses (by patient and third).

Example 5. Physician initiated eliciting exchange:

D: Do you take medication for that?

P: No.

T: Sometimes he does.

This exchange is exchange directed to the patient, a response is given by both patient and third, and this would be coded as indicated in Table 1.

Table 1

Coding of Exchanges

Type	Speaker	Directed to	Respondent	Respondent
e	1	2	2	3

Example 6. Physician initiated eliciting exchange followed by third person initiated informing exchange. (Patient has just told the physician she mows the yard in the summertime.)

D: You do not have any pain or any shortness of breath when you [mow] the yard?

P: [No.] Uh uh.

The third person initiates an informing exchange to clarify the patient's response.

T: She rides a lawnmower 'cause she mows about four acres.

The first of these exchanges is coded e1220 and the second i3000.

Combinations of the 72 possible coding patterns were used to create measurements as explicated in Tables 2-6. Ratios of particular patterns to the total number of exchanges were used to allow comparison between discourses. A simplified example showing how these variables are used to answer the research questions follows the listing of these variables. (An alphabetic listing of the numeric variables are in Appendix D.) Additional variables were used for each of the content areas (see Appendix A).

Sample Discourse Measures

The example below is used to demonstrate the measures used. The following exchanges are totals from a hypothetical single discourse: (a) 10 physician elicits (7 asked of patient, 2 asked of caregiver, 1 ambiguous); (b) 0 patient elicits; (c) 2 caregiver elicits (directed to physician); (d) 5 physician informs; (e) 1 caregiver inform; (f) 2 patient informs; (g) for a total of 20 exchanges. The 10 questions asked by the physician are answered as follows: the patient singly answers 5, the caregiver singly answers 3 and both answer 2. Numerically then, there are 12 responses to 10 questions.

Calculations for Describing Triads Using the Example Above

Physician questioning patterns are addressed to look at the range of third person participation, and the balance of questions directed to patients and thirds.

A. Ratio of questions asked of patient (indicated by discourse):

DEP/DE = 7/10 = .7

Table 2

Initiations by All Participants

Description of variable	Variable name	Calculation
Physician eliciting exchanges	DE	e1020 + e1030 + e1023 + e1220 + e1230 + e1223 + e1320 + e1330 + e1323
Physican informing exchanges	DI	i1000 + i1020 + i1030 + i1023 + i1200 + i1220 + i1230 + i1223 + i1300 + i1320 + i1330 + i1323
Patient eliciting exchanges	PE	e2010 + e2030 + e2013 + e2110 + e2130 + e2113
Patient informing exchanges	PI	i2000 + i2010 + i2030 + i2013 + i2100 + i2110 + i2130 + i2113
Third eliciting exchanges	TE	e3010 + e3020 + e3012 + e3110 + e3120 + e3112
Third informing exchanges	TI	i3000 + i3010 + i3020 + i3012 + i3100 + i3110 + i3120 + i3112
Total exchanges initiated by physician	DTOT	DE + DI
Total exchanges initated by patients	PTOT	PE + PI
Total exchanges initiated by thirds	TTOT	TE + TI
Total exchanges	EXTOT	PTOT + TTOT + DTOT
Ratio of patient initiations to all initiations	PATRAT	PTOT/EXTOT
Ratio of third initiations to all initiations	THIRAT	TTOT/EXTOT
Ratio of combined patient and third initiations to all initiations	COMRAT	(PTOT + TTOT)/EXTOT

B. Ratio of questions asked of third party (indicated by reference to patient in third person): DET/DE = 2/10 = .2

Table 3

Direction of Initiations by Physicians

Description of variable	Variable name	Calculation
Elicits directed to patient	DEP	e1220 + e1230 + e1223
Elicits directed to third	DET	e1320 + e1330 + e1323
Elicits ambiguously directed	DEO	e1020 + e1030 + e1023
% physician elicits to patient	DEPRAT	DEP/DE
% physician elicits to third	DETRAT	DET/DE
% physician elicits ambiguous	DEORAT	DEO/DE
Informs directed to patient	DIP	i1200 + i1220 + i1230 + i1223
Informs directed to third	DIT	i1300 + i1320 + i1330 + i1323
Informs ambiguously directed	DIO	i1000 + i1020 + i1030 + i1023
Physician orientation to patient	DOP	(DEP + DIP)/DTOT
Physician orientation to third	DOT	(DET + DIT)/DTOT

C: Ratio of questions unmarked or ambiguous (question not verbally directed):

DEO/DE = 1/10 = .1

Patient and third party response ratios are explored to see who answers the questions asked by physicians.

A. Expressed as a patient response ratio: PRE/DE = (5+2)/10 = .7

B. Expressed as the third party response ratio: TRE/DE = (3+2)/10 = .5

C. Expressed as the combined response ratio: (PRE + TRE)/DE = (5+2+3+2)/1 = 1.2

The observed and potential response patterns can be calculated by comparison of the ratios of information-seeking potentials and patient/third party responses to address

Table 4

Information-Giving in Response to Elicits

Description of variable	Variable name	Calculation
Physician responses to patients	DREPE	e2110 + e2113
Physician responses to thirds	DRETE	e3110 + e3112
Patient responses to physician elicits directed to patient	PREDEP	e1220 + e1223
Patient responses to physician elicits directed to third	PREDET	e1320 + e1323
Patient responses to physician elicits directed ambiguously	PREDEO	e1020 + e1023
Third responses to physician elicits directed to patient	TREDEP	e1230 + e1223
Third responses to physician elicits directed to third	TREDET	e1330 + e1323
Third responses to physician elicits directed ambiguously	TREDEO	e1030 + e1023
Total patient responses	PRE	PREDEP + PREDET + PREDEO
Total third responses	TRE	TREDEP + TREDET + TREDEO
Patient response ratio	PRERAT	PRE/DE
Third response ratio	TRERAT	TRE/DE

how often third persons answer when questions are directed to the patient and how often patients answer when questions are directed to the third person.

A. Question-answering potential for patient = ratio of responses to questions directed to the patient + ratio of responses to ambiguously directed questions = .8; the ratio of the observed responses to the potential responses is expressed by:

PRERAT/XPRERAT = .7/.8 <1; therefore, the patient responded less than might be expected from the questioning pattern.

B. Question-answering potential for third party = ratio of questions directed to the patient + the ratio to ambiguously directed questions = .3; the ratio of the observed responses to the ratio of the potential responses is expressed by:

TRERAT/XTRERAT = .5 /.3 = 1.67 > 1; therefore, the third person responded more than expected.

Measures of patient and third information-giving tell who provides information to the physician.

A. Patient information-giving as a proportion of all exchanges: PINGIVE = (PRE + PI)/EXTOT = (5+2+2)/20 = .45.

B. Third information-giving: TINGIVE = (TRE + TI)/EXTOT = (3+2+1)/20 = .30.

Comparison shows that patient gave more information, although there was substantial participation by the third person.

Table 5

Potential to Observed Responses to Physician Elicits

Description of Variable	Variable Name	Calculation
Potential for patient	XPRERAT	(DEP + DEO)/DE
Potential for third	XTRERAT	(DET + DEO)/DE
Ratio observed to potential for patients	OEXP	PRERAT/XPRERAT
Ratio observed to potential for thirds	OEXT	TRERAT/XTRERAT

Table 6

Summary Measures of Information-Giving and Seeking

Description of Variable	Variable Name	Calculation
Physician information-giving	DINGIVE	(DREPE + DRETE + DI)/EXTOT
Physician information-seeking	DINSEEK	DE/EXTOT
Patient information-giving	PINGIVE	(PRE + PI)/EXTOT
Patient information-seeking	PINSEEK	PE/EXTOT
Third information-giving	TINGIVE	(TRE + TI)/EXTOT
Third information-seeking	TINSEEK	TE/EXTOT
Patient-third combined information-giving	COMGIVE	(PRE + PI + TRE + TI)/EXTOT
Patient-third combined information-seeking	COMSEEK	(PE + TE)/EXTOT

Patient and third information-seeking measures describe who is asking the physician questions.

A. Patient information-seeking: PINSEEK = PE/EXTOT = 0/20 = 0

B: Third information-seeking: TINSEEK = TE/EXTOT = 2/20 = .10

In this example the caregiver sought more information than the patient.

Topic initiation measures indicate who controls the conversational floor.

A. Physician: DOCRAT = DTOT/EXTOT = 15/20 = .75

B. Patient: PATRAT = PTOT/EXTOT = 2/20 = .1

C. Third: THIRAT = TTOT/EXTOT = 3/20 = .15

In this example the physician initiates 75% of all verbal information transmission exchanges. Note that these are actual percentages and total 100%.

To compare triads and dyads, the patients and third person initiations and responses are added together in general categories of information-giving and seeking to see if the ratios are similar to unaccompanied patients. For instance, in the preceding example, the patient and third together can be seen as contributing 25% of the initiated topics.

Data Analysis

All analysis was done with SPSS. Four data sets were created. The first classified all encounters by characteristics of physician, patients and accompanying persons and was used to select the discourses used here. Following transcription and coding, a data set was created of all exchanges in the 52 discourses (36 triads and 16 paired dyads). All coding was verified by a research team member trained in the coding system (agreement was 98%) and entered into SPSS. This data set was used to summarize measures of the basic coding of exchanges for each portion and total of all 52 discourses. These measures were then entered into a data set by discourse number and portion of the encounter and used for the analysis of the 36 triads; simple descriptive statistics were used. The final data set was a correlated sample design to compare the dyads and triads. The sign test was used for continuous variables and the McNemar test for the dichotomously measured content items. Tukey H.S.D. was used to identify significant differences among portions of the encounter.

CHAPTER 3

Results

Of the initial data set of 88 tapes of elderly person medical encounters, 36 had a third person present. These 36 tapes comprise the data for the first analysis. The remaining dyadic encounters were used to match as many as possible of the triads on the basis of age (within 5 years), sex, race, status at the clinic, and severity of illness. Sixteen of the dyads were matched to a subset of the 36 triads and these pairs were used in the second analysis. The 52 encounters (36 triads and 16 dyads) represent approximately 27 hours of discourse. The total time of the 36 triadic encounters was 18.3 hours. Over 10,000 entries were made of eliciting and informing exchanges.

Patient Characteristics

Of the 36 triads, the age of the patients ranged from 63 to 95 (Mean = 75; S.D. = 7.2). There were 25 male patients and 11 female patients. African-Americans comprised 66.7% of the sample. Thirty-six percent were married and 78% lived with someone. A designated caregiver was indicated for 50% of these patients. More than half were first time clinic users, and 61% were rated by the physician as moderately or extremely ill. Table 7 presents patient characteristics for the 36 triads and for the subsets of 16 triads and dyads that were paired for comparison.

Table 7

Patient Characteristics

	Triads (N=36)	Paired Triads (N=16)	Paired Dyads (N=16)
Mean age	75	72	75
Male	59%	59%	67%
African-American	67%	81%	81%
New to the clinic	58%	69%	69%
Moderately or extremely ill	61%	63%	63%
Married	36%	31%	50%
Living alone	22%	19%	25%
Designated caregiver[1]	50%	50%	6%

Note. [1]These values represent only those patients for whom a caregiver was positively identified. For the remaining patients it was often undetermined whether or not the patient had a designated caregiver.

Third Person Characteristics

Of the third persons, 86% were female. All male third persons accompanied male patients. Male patients were much more likely to be accompanied by someone of the same generation (62%) compared to only 1 of the female patients. Fourteen of the third persons did not live with the patient, 7 of whom lived alone and 7 with someone other than the person accompanying them. There was no discernable pattern to the persons accompanying these patients. However, in this sample only 27% of females were accompanied by persons from the same household compared to 76% of the male patients.

Of the male patients, 10 (40%) were accompanied by wives. Adult children accompaning males included 4 daughters, 1 step-daughter and 2 sons. Two patients were accompanied by sisters and 1 by a sister-in-law. Two patients were accompanied by male friends, 2 by female friends and 1 by a male worker from the boarding home in which he resides. Of the 11 female patients all were accompanied by females, 6 by daughters, 1 by a daughter-in-law, 2 by nieces, 1 by a sister, and 1 by a neighbor.

Physician Characteristics

For the 36 triadic encounters there were 26 different physicians. Comparison of physician characteristics for the sample groups is presented in Table 8. Although no analysis was done on the basis of matching physician and patient characteristics, the interactions were one-third male physicians and male patients, one-third female physicians and male patients, one-fourth male physicians and female patients. There were three encounters with female physicians and female patients.

Table 8

Physician Characteristics

	Triads (N=36)	Paired Triads (N=16)	Paired Dyads (N=16)
White	97%	94%	88%
Male	58%	63%	75%
PGYI	33%	38%	44%
Number of physicians	26	15	16

Structural Characteristics of the Triads

Third persons were present for most of the encounters in the pre-physical and post-physical portions. All encounters had a pre-physical portion, and 34 of those had third persons present. Of the 35 encounters with physical examinations, third persons were present for 28 and for the 35 post-physical portions third persons were present in 33. Although not statistically significant, the mean time for the physical examination was slightly over 4 minutes longer if the third person left the room. The mean lengths and ranges are presented in Table 9.

Table 9

Mean Time of Triadic Medical Encounters

	Mean length in minutes (S. D.)	Minimum time	Maximum time
Portion of the encounter			
Pre-physical	12.7 (3.1)	3.8	45.4
Physical examination	10.6 (5.4)	0.0	23.9
Post-physical	7.6 (5.0)	0.0	21.5
Total encounter	30.6 (10.7)	9.5	66.2

Patterns of Conversational Turn-taking and Responses to Questions

Initiation of Exchanges

The initiation of exchanges is expressed as a ratio, to measure the control of conversation turn-taking patterns. Although within an individual discourse the mean measure is additive for patients and thirds, this is not true for other calculations, particularly across all discourses. For instance, in a single encounter patient contributions

can theoretically range from 0 to 1.00 and the third person's contribution will augment this input. The mean of the combined initiation ratio for each discourse is a measure of the combined patient/third control and has a range of 0 to 1.00 by itself. This effect is clearly seen by examination of the maximum values in which the combined control of the conversational floor is only minimally higher than the maximum of either patient or third alone. Interpretation of these values is like percentages, such that if the patient contributes 16%, the third 15%, the combined would be 31% with the physician contributing the other 69%. Table 10 shows these values for portions of the exam in which the third person was present and for the entire encounter.

Information-seeking and Giving

Information is sought in the form of eliciting exchanges. With two persons, the physician has the option of directing questions to either or both patient and third. Table 11 shows the ratio of physician directed questions (percentage of all physician questions) to patients, third persons and those that are verbally ambiguous for the respondent. For the first two portions of the exam, approximately one question is directed to the third person for every three directed to the patient. Less than 1 in 10 is directed to either or both respondents. However, in the portion concluding portion of the exam, following the physical examination the pattern differs. Although the number of questions directed to the third and ambiguously directed questions remains low, the proportion is nearly double.

Patients and third persons seek information through initiating eliciting exchanges directed to the physician. The proportions of questions asked by patients and third

Table 10

Initiation Patterns of Patients and Third Persons[1]

	Mean	S. D.	Median	Maximum
Total encounters (N=36)				
Patient	.16	.10	.16	.41
Third	.15	.11	.13	.49
Combined	.31	.09	.29	.55
Pre-physical (N=34)				
Patient	.14	.11	.14	.42
Third	.15	.12	.13	.53
Combined	.29	.10	.26	.54
Physical (N=28)				
Patient	.19	.14	.16	.49
Third	.14	.12	.12	.49
Combined	.32	.13	.32	.61
Post-physical (N=33)				
Patient	.17	.14	.15	.50
Third	.19	.13	.19	.46
Combined	.35	.11	.35	.46

Note. [1]Calculated from the ratio of patient initiated elicitations and informatives to all elicitations and informatives.

persons to all exchanges are presented in Table 12. As can be seen, most information sought is in the post-physical portion, related to diagnosis and treatment plans. Although the maximum value is highest for a patient, the third person and patient both seek

Table 11

Eliciting Patterns of Physicians[1]

	Mean	S. D.	Median	Maximum
Total encounters (N=36)				
Directed to:				
Patient	.70	.27	.75	1.00
Third	.24	.26	.16	.98
Ambiguous	.07	.07	.04	.30
Pre-physical (N=34)				
Directed to:				
Patient	.70	.28	.74	1.00
Third	.23	.26	.17	1.00
Ambiguous	.07	.09	.04	.35
Physical (N=28)				
Directed to:				
Patient	.73	.33	.87	1.00
Third	.20	.29	.09	1.00
Ambiguous	.04	.06	.00	.19
Post-physical (N=33)				
Directed to:				
Patient	.49	.38	.50	1.00
Third	.37	.38	.24	1.00
Ambiguous	.12	.18	.05	.75

Note. [1]Calculated as the ratio of specifically directed physician initiated exchanges to all physician initiated exchanges. [2]$p<.05$ different from pre-physical and physical values. [3]$p<.05$ different from physical examination value.

Table 12

Comparison of Information-Seeking by Patients and Third Persons[1]

	Mean	S. D.	Median	Maximum
Total encounters (N=36)				
Patients	.02	.02	.02	.08
Thirds	.02	.02	.02	.07
Pre-physical (N=34)				
Patients	.01	.01	.00	.07
Thirds	.01	.02	.00	.09
Physical (N=28)				
Patients	.02	.03	.02	.08
Thirds	.01	.02	.00	.08
Post-physical (N=33)				
Patients	.04	.05	.02	.27
Thirds	.05	.05	.04	.20

Note. [1]Ratio calculated from patient and third elicitations to all elicitations and exchanges.

minimal information, with little difference in amount when calculated by the ratio of the number of questions asked.

The absolute values of the average questions asked by patients is 4.3 over the entire encounter, including those instances when the third person is not present. When the third person is present the patient initiates an average of .8 questions in the portion, 1.2 questions during the physical and 1.9 questions after the physical examination. The third person asks an average total of 3.4 questions over the exam; .5 questions are asked

in the pre-physical, .6 in the physical and 2.6 in the post-physical portion. Information is given to the physician in response to physician questions and when patients or thirds independently initiate an informing exchange. Table 13 presents the ratios of information-giving to total exchanges for patients and third persons. Although for the total encounter, the pre-physical, and physical examination portions the values of the

Table 13

Comparison of Information-Giving by Patients and Third Persons

	Mean[1]	S. D.	Median	Maximum
Total encounters (N=36)				
Patients	.45	.19	.51	.74
Thirds	.28	.20	.25	.68
Pre-physical (N=34)				
Patients[2]	.56	.24	.58	.95
Thirds	.43	.24	.33	.81
Physical (N=28)				
Patients[2]	.43	.20	.49	.68
Thirds	.23	.22	.15	.77
Post-physical (N=33)				
Patients[2]	.24	.18	.18	.58
Thirds	.26	.20	.23	.70

Note. [1] Calculated as the ratio of information given by patient and third responses to physician elicitations and informatives to all elicitations and informatives.
[2] $p < .05$ differs from both other portions of the encounter.

information provided by thirds is less than that given by patients, in the post-physical the means are nearly equal. Although no portion for thirds is significantly different from any other portion, for patients all portions have significantly different values.

The physician directs both questions and informative statements to either the patient or third person or to both. The ratio created from combining the number of questions directed to the patient with the information-giving statements directed to the patient provides a measure that represents the proportion of the encounter the physician specifically orients to the patient. Likewise, this value can be calculated for thirds. Mean measures of these values are presented in Table 14. Over the entire encounter the minimum directed to the patient was 7% and to the third person it was 1%. These results parallel the pattern of physician elicitations in Table 11.

Eliciting exchanges that are directed to either the patient or third would be predicted to have a response from that person. Questions that are ambiguously directed also can be seen as an invitation to speak. In addition, patients and third persons have the potential to answer questions directed to each other. Table 15 shows that patients respond less than would be expected and that third persons respond much more. Third persons are most likely to respond for patients in the pre-physical, information-gathering portion of the encounter.

Table 16 shows the number of questions asked for each portion of the exam and the response patterns of patients and thirds. This highlights the location of requests for verbal information. As expected, most questions (65%) are asked before the physical examination, and the least following it. Over all, about 8% of questions directed to the

Table 14

Comparison of Physician Orientation to Patients and Third Persons[1]

	Mean	S. D.	Median	Maximum
Total encounters (N=36)				
Oriented to:				
Patients	.66	.27	.72	.99
Thirds	.24	.26	.15	.90
Pre-physical (N=34)				
Oriented to:				
Patients	.68	.27	.76	1.00
Thirds	.23	.26	.14	1.00
Physical (N=28)				
Oriented to:				
Patients	.74	.29	.87	1.00
Thirds	.16	.23	.04	.68
Post-physical (N=33)				
Oriented to:				
Patients[2]	.51	.35	.50	1.00
Thirds	.33	.34	.23	.92

Note. [1] Calculated by the ratio of the sum of physician elicitations and informatives directed either to patients or thirds to all physician elicitations and informatives.
[2]$p<.05$ different from the physical examination portion.

patient are answered by the third person. This percentage is highest in the pre-physical portion, decreases in the physical examination and is only 1% in the conclusion.

Table 15

Comparison of Potential to Observed Responses by Patients and Third Persons[1]

	Mean	S. D.	Median	Maximum
Total encounters (N=36)				
Patients	.94	.09	.98	1.03
Thirds	1.36	.70	1.17	4.33
Pre-physical (N=34)				
Patients	.90	.19	.97	1.10
Thirds[2]	1.42	.89	1.10	4.00
Physical (N=28)				
Patients	.93	.29	1.00	1.42
Thirds	.79	.76	1.00	3.00
Post-physical (N=33)				
Patients[3]	.70	.38	.86	1.10
Thirds	1.01	.60	1.00	3.00

Note. [1]Calculated by the ratio of the ratio of observed to the ratio of potential responses. [2] $p<.05$ different from physical. [3] $p<.05$ different from pre-physical and post physical.

Comparison of Dyads and Triads

Structural Features

The above results give a descriptive analysis of what happens in medical encounters when third persons are present. The paired sample design tests the consequences of these structural and information-giving and seeking patterns for the physician and for the patient. Table 17 summarizes the comparative mean values of the variables used to describe these features. Because of the small sample size a $p < .10$ was used to detect

differences. As can be noted, the only significant difference ($p < .08$) was over the entire encounter, in the initiation of exchanges. Although statistically significant, it can be seen from the values that there is not much of a difference. Not statistically significant but notable, the length of the exam is shorter for the triads.

Table 16

Number of Questions Asked and Response Patterns to Physician Elicits

	Answered by			
	Patient only	Third only	Both	
Directed to:				Row total
Pre-physical (N=34)				
Patients	1413	33	111	1557
Thirds	5	319	26	350
Ambiguous	23	90	39	152
Physical (N=28)				
Patients	576	7	24	607
Thirds	2	66	9	77
Ambiguous	2	15	9	26
Post-physical (N=34)				
Patients	198	5	17	220
Thirds	3	148	1	152
Ambiguous	2	28	12	42
Column totals	2224	711	248	3183

Table 17

Mean Values of Structural Features of Dyads and Triads

	Phase of the encounter			
	Pre-physical	Physical	Post-Physical	Total
Length in minutes				
Dyads	13.66	11.02	7.32	32.00
Triads	12.11	10.30	6.36	28.70
Ratio of silence to total time				
Dyads	.12	.46	.42	.27
Triads	.18	.45	.21	.28
Patient/third information-giving				
Dyads	.88	.68	.42	.72
Triads	.90	.69	.46	.74
Physician information-giving				
Dyads	.12	.32	.58	.28
Triads	.15	.34	.55	.29
Patient/third information-seeking				
Dyads	.02	.02	.09	.03
Triads	.02	.03	.09	.04
Patient/third initiation of exchanges				
Dyads	.26	.25	.29	.25*
Triads	.26	.28	.34	.28*

*$p < .10$

Content Comparison of Dyads and Triads

Structural features of the conversation of medical discourse are one way of describing what is happening. It also is important to consider the content of the information exchange. Tables 18-22 present the content areas explored to see if particular topics important to geriatric assessment were more or less likely to be discussed if a third person accompanied the patient. As can be seen, most notable is the number of times neither pair was asked about specific topics.

Table 18

Comparison of Dyads and Triads for Discussion of ADL and IADL Difficulties

ADL or IADL	Number of pairs in which topic is discussed				
	Triad only	Dyad only	Both	Neither	% of all encounters
Bathing	2	0	0	14	6
Dressing	3	0	0	13	9
Eating	2	2	0	12	13
Toileting	4	1	0	11	16
Transferring from bed or chair	0	0	0	16	0
Outside	1	1	0	14	6
Walking	3	4	7	2	66
Light housework**	6	0	0	10	19
Heavy housework	2	0	0	14	6
Managing money	1	0	0	15	3
Preparing meals	3	1	0	12	13
Using the phone	1	0	0	15	3
Shopping	2	1	0	13	9

**$p < .05$

Table 19

Comparison of Dyads and Triads for Discussion of Mental Problems

Item	Number of pairs in which topic is discussed				
	Triad only	Dyad only	Both	Neither	% of all encounters
MSQ or MMSE	4	3	0	9	22
Reported memory problems**	7	0	0	9	22
Depression	2	4	0	10	19
Nerves	1	4	0	11	16

**$p < .05$

Table 20

Comparison of Dyads and Triads for Discussion of Transportation Issues

Item	Number of pairs in which topic is discussed				
	Triad only	Dyad only	Both	Neither	% of all encounters
Who is responsible?	2	0	1	13	13
How does patient get to the clinic?	2	3	1	10	22
Does the patient drive?	3	0	1	12	16

Table 21

Comparison of Dyads and Triads for Discussion of Social and Demographic Items

Item	Number of pairs in which topic is discussed				
	Triad only	Dyad only	Both	Neither	% of all encounters
Married	4	6	3	3	50
Has children	2	2	8	4	63
Has grandchildren	4	2	0	10	19
Other family	4	2	2	8	31
Other social contact (friends, neighbors)	3	1	0	12	13
Previous occupation	1	4	3	7	34
Current occupation	1	6	1	7	28
Hobbies	4	3	1	8	28
Recipient of care	4	0	0	12	13
Gives care	0	2	0	13	6
Living situation	5	1	9	1	75

Table 22

Comparison of Dyads and Triads - Miscellaneous Items

Item	Number of pairs in which topic is discussed				
	Triad only	Dyad only	Both	Neither	% of all encounters (N=32)
Responsibility for taking medications	3	6	4	3	53
Falling	5	2	0	9	22
Alcohol usage*	1	5	6	5	56
Smoking	1	5	8	2	69
Exercise	1	1	0	14	6
Did patient change to a gown for the physical?	8	3	1	4	40

*$p < .10$

CHAPTER 4

Discussion and Conclusions

The Triads

Comparison of interactions based on third person characteristics was not possible in a purely quantitative way since the relationship patterns are so diverse. I had assumed that most of the third persons would be actively involved with the care of the patient, but this was not the case. Most (83%) of the third persons were family members. These family members, however, were not necessarily primary caregivers, but someone who was available to bring the patient to the clinic for this scheduled visit. Often the third person was not a member of the patient's household. Only the men brought spouses, and that relationship represented less than one third of the total sample and 40% of the male patients.

In this sample, 40% of patients aged 60 or more were accompanied by an additional person. In almost all encounters with thirds, the third person and patient were waiting in the examining room for the doctor. Physicians generally ascertained how the additional person was connected to the patient at some point during the exam, but not necessarily at the beginning. Third persons sometimes left the room on their own initiative. At times the third person had to go check a parking meter and would leave and reenter; this is one reason for the differing numbers of pre-physical and post-physical

portions of the exam. Third persons always left the room when the physicians requested they do so, most often for the physical examination. In only one case was the patient so severely ill that the presence of the third person seemed essential to the physician appraisal. None of the patients in this sample were asked if they wanted the third person to be present. In only one encounter did the physician discuss the patient's relationship to the third person when the third person was out of the room, and that was to explore the patient's antagonism to his sister. In only one instance did the physician specifically invite both the third person and the patient to participate as a team, by saying that he would talk to both together, and whoever had something to say, should say it. It should be noted that, in actuality, there was always a fourth person present in the room, no matter how unobtrusive the researcher tried to be. It is impossible to assess the impact on the conversation dynamics except to note that, under such conditions, one would expect the physician's behavior to approximate their own idealized notion of appropriateness for dealing with triads.

Patient Initiations

There was consistency across the encounters for the participation of the third person and the patients in initiations with the combined participation around 30%. Since the exchange method used here codes unsolicited information on a topic already raised by the physician as a patient initiation, these numbers appear higher than those noted in other studies. However, in a discussion of future illness risk, Kalet, Roberts, and Fletcher (1994) found that 16% of the talk was initiated by patients. Measured this way, the maximum patient and third person combination was higher than 50%, indicating that

some of these encounters clearly had reciprocal participation, fitting the patient-centered model. However, the only time the measure of patient initiations exceeded that of thirds was in the physical examination.

Information-seeking

It was usually obvious from the transcripts to whom questions were directed. Physicians would refer to the patient as "he" or "she." The small number of ambiguously directed questions may have been possible to assign had video been available. The first two portions of the encounter seem fairly consistent with a 3 to 1 ratio of questions directed to the patient. However, the concluding portion includes the third person much more actively, especially compared to the physical examination, changing from a low of 20% to 37% specifically directed to the third person. If the ambiguous questions were all considered to be directed to the third person, the ratio of question-asking would be equal. This may indicate that acceptance of the diagnosis and treatment plan is negotiated as a joint enterprise between patients and third persons and the physician. Since these are information-seeking behaviors on the part of the physician, perhaps the patient's ability to respond to medical regimens is dubious.

This study definitely supports other studies in which patients ask very few questions. Thirds also ask few questions. However, as might be expected, most information-seeking occurs during the concluding portion of the exam, when the physician would be offering a diagnosis and treatment. Yet, even here the number of questions of the physician is low, with patients asking an average of 1.9 questions and thirds only slightly more, 2.6. The difference, however, can be seen as a definite trend

such that if the third participates in the verbal exchange, they will ask more questions than the patient.

Information-giving

This measure is a composite of information given in response to specific requests for information and unsolicited information. The response to an elicitation of information is directed by the physician, however, both patient and third person have the potential to respond to any question or introduce new topics. Again, different portions of the encounter suggest trends. The least information in absolute values is passed to the physician in the concluding portion, however the proportion of information provided to the physician is split almost equally between patients and thirds. A decrease in the exchange of information given by the patients and thirds would be expected over the course in the exam, with most information passed during the presentation of symptoms and medical history portion of the encounter; overall this is the pattern that occurs.

The range of values for information-giving is much greater for third persons in all phases with the greatest variance occurring in the physical examination. Since the physical examination also is the portion of the exam which seems most directed to the patient, one explanation of the high values of third person response would be a patient's incapacity to reply. Still, patients are providing verbal information during the physical examination, and at a rate nearly double that of thirds. These values only include those encounters in which the third person has remained in the room, suggesting that at least for this portion of the encounter, the physician focuses on the patient, even when a third person is present. The physician also may be issuing directives to the patient and

conducting a hands-on examination making this portion of the encounter clearly directed to the patient. Since physical exams are slightly longer if the third person leaves the room, the question needs to be asked if this is because procedures are done that are otherwise omitted, or if the presence of an additional informant shortens the time the physician needs to assess the patient.

Two different ways of looking at the response patterns of patients and third persons to questions are proportions and frequencies. There is some argument about which measure is a more accurate reflection of what is occurring (Street, 1992a; Winefield & Murrell, 1992), but the proportions do control for the length of the encounter. It is apparent that third persons are more likely to answer questions directed to the patient than patients are to answer if the third person is addressed. This indicates that third persons respond for and with patients while patients either remain quiet, not answering questions directed to themselves, or that thirds actively answer with the patient. Transcripts show both scenarios; not only do third persons speak or prompt when the patient hesitates, but they contradict, and even interrupt patient speech. Ambiguously directed questions can be seen as having the potential for both patient and third responses. Third persons answer these questions at a much higher rate than patients. Maximum values show the diversity in how thirds answer for patients, at almost a 4 to 1 ratio in the pre-physical portion when the third is an active participant.

Physician Orientation

The measure that gives the overall picture of how the physician is directing the exam is what I have termed "physician orientation." This measure is an indication of the

information-seeking and information-giving exchanges specifically directed to patient and third. Again, the importance of looking at the progress of the encounter in stages is emphasized. Although physicians are always more oriented to patients the values change over the course of the exam, and by the concluding portion the third person is much more actively involved. These differing patterns are not statistically significant because of large variances; almost all had minimum values from 0.00 to 0.10, the only exception being the physical examination (and it is difficult to imagine a physical in which the physician does not direct comments to the patient). This is a quantitative measure of how the physician utilizes third persons in conversation patterns, and provides a way of rating individual encounters.

Summary of Triad Characteristics

Third persons definitely participate in the encounter. Their contributions are directly solicited by the physician, and they answer for the patient at other times. Patients also are at a disadvantage in answering questions directed to them when the third person remains in the encounter. One possible explanation for this impact of third persons would be that these patients are sicker and/or less competent to handle the encounter on their own and that the physician, of necessity, must involve the additional person. The comparison of dyads and triads that was the second part of the analysis controls for severity of illness and other patient characteristics to investigate this possibility.

Comparison of Dyads and Triads

Structural Features

The comparison of the structural features uses combined patient and third values in the triads to contrast to patient values of the dyads. The most apparent result is the difference of values by portion of the encounter, particularly in contrast to the value calculated when the exam is taken as the unit of analysis. Winefield and Murrell's caution (1992) to look at the exam as a sequence is supported by this research. The length of the encounter is slightly longer for the unaccompanied patient, however, this difference is spread over all portions of the encounter with the least difference in the physical examination. This contrasts with the difference in length among the triads when the third person was present or absent during the physical as only one of these triads did not have a third person in the room. Although not statistically significant, the lengths of the encounters are in the opposite direction from those studied by Greene, Majerovitz, Adelman, and Rizzo (1994). What is significant is that there is no difference in length when the patients are controlled for age and severity of illness. These accompanied patients are neither sicker nor older which implies that the presence of the third person may be the factor associated with the differing patterns.

There is little difference for the physician in terms of information-giving or in the amounts of information received from patients or from patients and thirds combined. While it was expected that silence would be less with an additional person this is only true in the concluding portion of the encounter. The concluding portion also has a slightly higher rate of patient and third initiations, suggesting that the partnership of

patient and third person is more likely to take advantage of silent time to initiate exchanges. However, by frequency count, less questions are asked by patients and thirds so this time is not being used to seek information. The numbers identify an interesting pattern but provide no context for what might be happening; the difference merits further qualitative study.

Geriatric Assessment Topics

The comparison of ADL's and IADL's is notable in that so many are never verbally assessed. It might be assumed that if the patient is at the clinic and not using specialized equipment, physical appearance would show that these topics do not need to be surveyed. However, the answers to many of these assessment items are unavailable to the physician except through conversation. For instance, given the high incidence of incontinence in the geriatric population, 28% in one community dwelling sample of 65 and older (Wetle et al., 1995) it would seem that this is a significant area of inquiry, given that the information is readily available verbally. While toileting problems were more often addressed in triadic encounters this data does not show who introduced the topic. Of the functional assess-ments only walking was consistently addressed for all patients, and mobility would be somewhat evident from observing the patient. Mobility is closely related to falling, another common geriatric syndrome among community dwelling elderly. It has been estimated that 30% of persons over the age of 65 experience falls without a noticeable intrinsic or extrinsic cause (Tinetti, 1988). This is another topic that verbal assessment would readily identify yet only 22% of all patients in the paired sample were asked about falling, and more of these were in triads.

Only triads were asked about housework. This seems somewhat perplexing in that the patients in triads, having someone with them, would presumably have someone to assist with the work. It is possible that the assessment is made in support of the third person rather than as an evaluation of patient ability. Cognitive and mental function were also rarely addressed, but the presence of a third person was significantly associated with discussion of reported memory problems. While standard cognitive tests were given to both sets of patients, memory problems were asked about only if a third person was present. One reason might be that the third person was available to corroborate or supply this information.

One measure of patient independent functioning could be assessed by transportation questions but these were also rarely addressed and with not enough frequency to make any conclusions. During data collection we observed that, occasionally, a person accompanied the elder but remained in the waiting room. Unfortunately, there is no way to tell if patients had help with transportation, but saw the doctor by themselves. Only in one dyad was a patient asked about transportation.

Patients who presented themselves independently in the medical encounter were more likely to be asked about occupation. Living situation, however, and whether or not the patient had children were established for the majority of the patients, whether in dyads or triads. The caregiving situation was rarely mentioned, neither establishing the patient as a care recipient nor as a caregiver. The question of care is more complex than might be expected. In our interviews with patients we found that some 70-80 year old patients had even older parents whom they looked after. A more common situation was

care being extended to a patient by an adult child; meanwhile the patient reciprocated by providing care for grandchildren. Members of dyads were never asked if they received help to live independently and members of triads were never asked if they provided care for anyone.

Among health behaviors, the discussion of alcohol usage was significant for the dyads although half of all patients were asked about alcohol. It might be that triadic patients were considered less susceptible to alcohol misuse if it was assumed that the person who accompanied them also provided supervision.

Even though physical examinations were no longer for the triads, more patients in triads changed into a gown. Additional analysis is necessary to determine if this is due to the effect of a third person on physician behavior (perhaps to impress the third person with physician competence or the thoroughness of the examination) or just an artefact of this sample.

Summary

The patients in this sample who were accompanied by third persons were marginalized by appearing with another. Clearly, the question is not simply whether or not elderly patients take more time, have psychosocial issues addressed, develop a trusting relationship with the physician or have high rates of satisfaction with information received (Beisecker, 1988; Greene et al. 1987; Greene, Adelman, Friedmann, & Charon, 1994; Greene, Majerovitz, Adelman, & Rizzo, 1994; Radecki et al., 1988b), but the valida-tion of self worth that they receive from health care professionals. The third person is automatically legitimated in the patient's health care by the physician. In this

sample no questions were ever asked to determine if the third person's presence was necessary, implying that the patient's need for help is in question from the start. Physicians give the third person the right to intercede for the patient. Moreover, as the interaction unfolds, there is little opportunity for the patient to renegotiate this initial appraisal by the physician. This is evidenced by the discussion of content items which are not assessed with equally old and sick patients who appear by themselves. Only in triads were issues of memory problems, incontinence and falling likely to be discussed. These are clearly issues that would discredit a person's ability to function independently. Additionally, the topics that were not discussed when patients were accompanied give support to this perspective. Patients in triads were never asked if they provided care for someone else, nor was prior or current occupation as likely to be discussed. It was not that patients were forced to admit to being incompetent, but that areas in which these patients might display competence were not part of the interview. Patients were not actively discredited, but not allowed the opportunity to present themselves as autonomous adults. Appearing with another person seems to preset the path of physician questioning, a clear example of a stigmatizing condition as defined by Goffman (1963).

It would seem that the freedom to form coalitions is not numerically equal in the case of physicians, patients and third persons but rather fits Simmel's (Wolff, 1950) explanation of the situation in which the third maintains a superordinate position by preventing a coalition of the other two. Simmel explains the necessary condition of creating only a slight difference in rank between subordinates to achieve this goal, neither treating the parties as equal nor creating too great a difference between them. Indeed, this

is what is apparent in the conversation dynamics of patients and thirds with physicians. The physician maintains control, orienting the interview to either patient, third person or both. Although Maynard (1991) argues that the interaction dynamics are negotiable, and that the potential for patient assertiveness is available, in aggregate, patients succumb to the authority of both physician and third person. Patients rarely provide additional responses when questions are directed to thirds and also rarely answer ambiguously directed questions. However, the third person maintains the right to override patient's responses and to introduce information or topics. Although both remain subordinate to the physician, the third may participate as an unwitting ally in the depersonalization of the patient.

Conclusions

The presence of a third person definitely compromises patients' contributions to their medical care, assuming that the patient is capable of participating more fully. By all measures considered here, patients participate less when they are accompanied. Third persons replace portions of patient involvement in the information exchange process when viewed quantitatively. It would appear that patients are not only subordinate to the physician, but to the third person if that person chooses to participate. It is not so much that a coalition is automatically formed but a hierarchy, in which the third person retains the choice of being passive or active. Patient autonomy is sacrificed by the presence of the third person, who by their very presence have the "right" to intercede however and whenever they want.

It has been noted that today's geriatric patients may want an adult son or daughter to act as an intermediary between the health care system and themselves (Beisecker, 1988; Haug, 1994). Elderly patients seem to prefer the more traditional style of medical treatment (Greene, Adelman, Friedmann, & Charon, 1994) and may be satisfied with the situation as it exists. However, others speculate that patients who feel they are participants in the consultation process will have a greater commitment to treatment plans (Frederikson, 1995). It also has been suggested that physicians provide an indirect source of support for the caregiver when they treat elderly patients with dignity and respect (Haug, 1994; Clair, Ritchey, & Allman, 1994).

This implies that physicians must specifically include the patient in the process of determining medical care while monitoring the effects of the third person on the interaction. The necessity of the third person's presence should be evaluated. The physician should know if the person is present at patient's request or because the third person decides to stay. It is the physician who has to balance the need to treat the patient with dignity while utilizing the additional person as a possible informant. In addition to curative medical care, physicians will have to take on the responsibility of involving the patient as much as possible in their own medical treatment, perhaps even restoring some of the autonomy that is lost by the third person's presence. This could be done perhaps, by asking the patient if they want the third person to stay and/or asking to see the patient alone for some portion of the interview.

The quantitative analysis done here shows the necessity to consider the medical encounter as a process, studying the interaction dynamics as a sequence as the interview

proceeds through the pre-physical, physical and concluding portions. Although the quantitative evidence shows patient disempowerment when they are accompanied, there is a need for qualitative evidence to supply the context of patient-physician-third person interaction, the ways in which physicians and third persons assume roles which marginalize the patient.

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APPENDIX A

List of Content Items

Coded for each encounter: 0 = Unknown; 1 = Known

ADL's

___Bathing

___Dressing

___Eating

___Toileting

___Transferring

___Outside

___Walking

IADL's

___Housework - light

___Housework - heavy

___Meals

___Money

___Phone

___Shopping

MENTAL

___MSQ (or MMSE)

___Memory problems or confusion (reported)

___Depression

___Nervousness/Anxiety

TRANSPORTATION

___Who is generally responsible?

___How does patient get to clinic?

___Driving - does patient drive?

ROLES AND SOCIAL SUPPORT

___Marital status

___Children

___Grandchildren

___Other family

___Other (neighbors, friends, etc)

___Occupation - previous

___Occupation - current

___Pastimes/hobbies

___Care recipient - established need for patient

___Caregiver - patient as a provider of care/support for others

___Living situation

OTHER

___Medications -Who is responsible

___Gowning

___Falling

___Alcohol

___Smoking

___Exercise

APPENDIX B

Transcript Conventions

D: P:	Speaker, D for doctor, P for patient, other initials as needed
(( ))	Double enclosure "descriptive," not transcribed utterances
[ ]	Bracket used to indicate overlapping speech
(0)	Silences representing 1.0 second intervals
=	No time elapses between speakers utterances
-	Used when a word or sentence is broken off in the middle
(word)	When a word is heard but remains unclear
(....)	Speaking sounds that are unintelligible
:	Used when a word is stretched (as in wel:l)
word	Underlined for marked increase in loudness or emphasis
*	Softness or decreased amplitude
(x)	Hitch or stutter
hh	Alone stands for exhalation
hh.	Followed by period denotes inhalation

Names of persons and places are indicated by number or initial. Titles reflecting patient gender are used, e.g., "Ms." "Mr."

APPENDIX C

Definition of Exchange Types

Aside: Structures discourse. Legitimates temporary withdrawal from an interaction

Boundary: Creates and marks transition between exchanges

Checking: Sequential to informing or directing exchanges. Verifies compliance and understanding

Directing: Requests a physical behavior

Eliciting: Requests information, linguistic response

Informing: Transmission of information from initiating speaker to the listener

Prescribing: Requests future physical behavior, often instructions

APPENDIX D

Alphabetical Listing of Variables

COMGIVE (Combined patient-third information-giving) =
(PRE + PI + TRE + TI)/EXTOT

COMRAT (Ratio of combined third) = (PTOT + TTOT)/EXTOT

COMSEEK (Combined patient-third information-seeking) = (PE + TE)/EXTOT

DE (Physician eliciting exchanges) = e1020 + e1030 + e1023 + e1220 + e1230 + e1223 +e1320 + e1330 + e1323

DE (Physician eliciting exchanges) = DEP + DET + DEO

DEO (Physician elicits ambiguously directed (regardless of respondent(s)) =
e1020+ e1030 + e1023

DEORAT (% dr. elicits ambiguous) DEO/DE

DEP (Physician elicits directed to patient (regardless of respondent(s)) =
e1220 + e1230 + e1223

DEPRAT (% dr. elicits to patient) = DEP/DE

DET (Physician elicits directed to third (regardless of respondent(s)) =
e1320 + e1330 + e1323

DETRAT (% dr. elicits to third) = DET/DE

DI (Phyician informing exchanges) = i1000 + i1020 + i1030 + i1023 + i1200 + i1220 + i1230 + i1223 + i1300 + i1320 + i1330 +i1323

DI (Physician informing exchanges) = DIP + DIT + DIO

DINGIVE (Physician information-giving) = (DREPE + DRETE + DI)/EXTOT

DINSEEK (Physician information-seeking) = DE/EXTOT

DIO (Physician informs ambiguous) = i1000 + i1020 + i1030 + i1023

DIP (Physician informs directed to the patient) = i1200 + i1220 + i1230 + i1223

DIT (Physician informs directed to the third) = i1300 + i1320 + i1330 + i1323

DOP (Physician orientation to patient) = (DEP + DIP)/DTOT

DOT (Physician orientation to third) = (DET + DIT)/DTOT

DREPE (Physician responses to patient elicits) = e2110 +e2113

DRETE (Physician responses to third elicits) = e3110 + e3112

DTOT (Total exchanges initiated by physician = DE (Doctor elicits) + DI (Doctor informs)

EXTOT (Total Exchanges, all elicits and informs, no matter whom directed to) sum of all e's and i's but not including incomplete exchanges) = PTOT + TTOT + DTOT

MCONPAT (Patient control of initiated exchanges for matched dyads) = (e2110 + e2100)/MEXTOT

MDINGIVE (Physician information-giving for matched dyads) = (e2100 + i1200)

MDINSEEK (Physician information-seeking for matched dyads) = e1220/MEXTOT

MEXTOT (Exchange total for matched dyads) = e1220 + e2110 + i1200 + i2100

MPINGIVE (Patient information-giving for matched dyads) = (e1220 + i2100)/MEXTOT

MPINSEEK (Patient information-seeking for matched dyads) = e2110/MEXTOT

OEXP (Ratio observed to potential for patients) = PRERAT/XPRERAT

OEXT (Ratio observed to potential for thirds) = TRERAT/XTRERAT

PATRAT (Ratio of patient initiations to all initiations) = PTOT/EXTOT

PE (patient elicits) = e2010 + e2030 + e2013 + e2110 + e2130 + e2113

PI (patient informs) = i2000 + i2010 + i2030 + i2013 + i2100 + i2110 + i2130 + i2113

PINGIVE (Patient information-giving) = (PRE + PI) / EXTOT

PINSEEK (Patient information-seeking) = PE/EXTOT

PRE (Total patient responses) = PREDEP + PREDET + PREDEO

PREDEO (Patient responses to physician elicits directed ambiguously) = e1020 + e1023

PREDEP (Patient responses to physician elicits directed to patient) = e1220 + e1223

PREDET (Patient responses to physician elicits directed to third) = e1320 + e1323

PRERAT (Patient response ratio) = PRE/DE

PTOT (Total exchanges initated by patient directed to physician) = PE + PI

TE (Third elicits) = e3010 + e3020 + e3012 + e3110 + e3120 + e3112

THIRAT (Ratio of third initiations to all initiations) = TTOT/EXTOT

TI (Third informs) = i3000 + i3010 + i3020 + i3012 + i3100 + i3110 + i3120 + i3112

TINGIVE (Third information-giving) = (TRE + TI)/EXTOT

TINSEEK (Third information-seeking) = TE/EXTOT

TRE (Total third responses) = TREDEP + TREDET + TREDEO

TREDEO (Third responses to physician elicits directed ambiguously) = e1030 + e1023

TREDEP (Third responses to physician elicits directed to patient) = e1230 + e1223

TREDET (Third responses to physician elicits directed to third) = e1330 + e1323

TRERAT (Third response ratio) = TRE/DE

TTOT (Total exchanges initiated by third directed to the physician) = TE + TI

XPRERAT (Potential for patient, from questions asked of patient) = DEP + DEO

XTRERAT (Potential for third, from questions asked of third) = DET + DEO

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Date 4/29/96

PS-1428