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Family Conferences in the Neonatal Intensive Care Unit: Observation of Communication Dynamics and Contributions

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Abstract

Objective—Clinicians in the neonatal intensive care unit (NICU) must engage in clear and compassionate communication with families. Empirical, observational studies of NICU family conferences are needed to develop counseling best practices and to train clinicians in key communication skills. We devised a pilot study to record and analyze how interdisciplinary NICU clinicians and parents navigate difficult conversations during NICU family conferences.

Design—We prospectively identified and audiotaped a convenience sample of NICU family conferences about “difficult news.” Conversations were analyzed using the Roter Interaction Analysis System (RIAS), a quantitative tool for assessing content and quality of patient-provider communication.

Setting—An urban academic children’s medical center with a 45-bed level IV NICU.

Participants—NICU parents and clinicians.

Measurements and Main Results—We analyzed 19 family conferences that included 31 family members and 23 clinicians. The child’s mother was included in all conferences and a second parent, usually the father, was present in 13. All but one conference included multiple medical team members. On average, physicians contributed 65% of all dialogue, regardless of who else was present. Over half (56%) of this dialogue involved giving medical information; under 5% of clinician dialogue involved asked questions of the family, and families rarely (5% of dialogue) asked questions. Conversations were longer with the presence of non-physician

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Conflicts of Interest: Debra Roter is the author of the Roter Interaction Analysis System (RIAS) and holds the copyright for the system. Johns Hopkins University also has rights to enhancements of the system. Neither Debra Roter nor Johns Hopkins collects royalties for use of the system in research applications as is the case for the current study. Debra Roter and Susan Larson are co-owners of RIASWorks LLC, a company that provides RIAS coding services for non-university projects and it is possible that RIASWorks would benefit indirectly from dissemination of the current research.

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clinicians, but this did not increase the amount of dialogue about psychosocial information or increase parent dialogue.

Conclusions—We collected a novel repository of audiorecorded NICU family meetings that offers insights into discussion content and process. These meetings were heavily focused on biomedical information even when interdisciplinary clinicians were present. Clinicians always talked more than parents, and no one asked many questions. Maximizing the participation of interdisciplinary clinicians in NICU family meetings may require explicit strategies. Methods to increase family engagement should be targeted.

Keywords

Neonatal intensive care; Communication; Family; Interdisciplinary health team

Introduction

Clinicians in the neonatal intensive care unit (NICU) are expected to engage in clear, timely, and compassionate communication with the families of very sick newborns. In other settings where clinicians and families must discuss distressing information and serious decisions, several aspect of communication are associated with improved outcomes. Family understanding increases when clinicians provide clear information that is free from jargon and then explicitly check and correct family comprehension.(1, 2) Families can participate more meaningfully in decision-making when clinicians respect their individuality by inviting discussion of the specific concerns and values that may be relevant to patient's situation.(3–5) Families cope better with support for the overwhelming emotions that accompany serious illness in a loved one.(4, 6) Inclusion of interdisciplinary team members in important discussions with families is a strategy to address family needs beyond information sharing.(7, 8)

Most of what we know about what actually happens in conversations between clinicians and families in the NICU is derived from family or clinician recollections of conversations that occurred hours, months, or even years in the past, or clinician characterization of their “usual” counseling behaviors or response to hypothetical scenarios.(9–17) Efforts to develop best practices for guiding these conversations, and for training young clinicians in key communication skills, are hampered by a distinct lack of scientific evidence regarding how these conversations unfold. The lack of observational data about discussions between clinicians and parents of sick newborns is understandable, given the logistical and ethical challenges of conducting research with families in the midst of stressful, chaotic, and urgent clinical events. Yet without detailed knowledge about these conversations, we are left only with theoretical standards to set performance targets, evaluate communication interventions and define best practices.

We have previously published an analysis of recorded conversations between neonatology clinicians and actors simulating parents with extremely premature labor. We found that the physicians dominated the conversations by talking about 80% of the time. The focus of their communication was on the predicted acute neonatal course in the first hours to days after birth.(11) The neonatologists infrequently gathered relevant psychosocial/lifestyle

information from the parents, such as information about their home or family life or their sources of instrumental and emotional support, but they attended to parental distress by devoting about a quarter of their communication to responding to parental emotion, most commonly through the expression of empathy.(11) While the context of our simulation study was individual consultations between a neonatologist and simulated parents, we wondered to what extent the broad characterization of communication style and focus might generalize to actual family conference conversations between clinicians and parents of sick newborns.

As there are few direct observational studies of NICU family conferences, we devised the current pilot study as an exploratory contribution to this area. The primary goal of the study was to explore how the professional and family composition of conferences might impact communication processes and content. Consequently, we examined how communication differed depending on the presence of one or more physicians, non-physician team members, and parents.

Methods

Participants

This study was conducted October 2012–October 2013 at an urban academic children's medical center with a 45-bed level IV NICU and multiple pediatric medical and surgical subspecialists. Through daily communication with NICU physicians, we prospectively identified parent-clinician conferences that the attending physician anticipated would involve “difficult news,” such as discussions about tracheotomies, new diagnoses of severe intraventricular hemorrhage, or withdrawal of life-sustaining therapies. The conversations represent a consecutive sample of scheduled family meetings that took place at the infant's bedside or in a separate conference room, and were led, or co-led, by a physician and often included multidisciplinary clinicians such as nurses and social workers. Written consent was obtained from every individual in the family and medical team present during the audio recorded conference.

Families were ineligible for participation if the parents did not speak English, if the physician felt that the family was too distressed for study recruitment, or if any individual did not consent to audio recording of the family conference. As recommended by Meert et al (18), participant recruitment emphasized voluntariness of participation and sensitivity to passive refusal. Participants completed short surveys to collect demographic information; clinicians also indicated when they had first met the family. Parents received \$50 gift cards; clinicians received \$25 gift cards. The study was approved by the institutional review board. A Certificate of Confidentiality from the National Institutes of Health was obtained.

Data Collection & Analysis

Analysis of family conference interactions—Digital recordings of the conversations were coded using the Roter Interaction Analysis System (RIAS). The RIAS is a valid and reliable quantitative tool for assessing medical communication in a variety of settings and has demonstrated high levels of reliability and predictive validity.(19) The unit of analysis is

a statement conveying a complete thought that may be communicated as a single word, simple sentence, or a clause in complex sentence. Statements are coded directly from recordings without transcription and assigned to one of 37 mutually exclusive and exhaustive code categories, identified by speaker.

Because of the large number of coded variables, conceptually similar codes were combined into subsuming code categories for analysis. For instance, all questions (open and closed) about the medical condition and therapeutic regimen – a total of 4 types of questions – were combined under the category of Medical Questioning. Likewise, all questions (open and closed) about psychosocial topics and lifestyle topics were combined (again, representing 4 types of questions). The individual codes included in each category are included in Table 1, with an example of a code included in the category that was taken from the family conference transcripts.

Structural measures of visit communication include visit duration (minutes), the sum of all patient and clinician statements as an indication of total dialogue, and a measure of clinician verbal dominance constructed as the ratio of all clinician to patient statements. As in a number of RIAS-based studies, the variable “patient-centered communication” is defined as a ratio of psychosocial and socioemotional focus relative to the biomedical focus of the visit dialogue. Specifically, the numerator consists of statements by all speakers falling in psychosocial and lifestyle exchange (information and questions), emotional statements and facilitation statements. The denominator consists of the sum of clinician medical questions and orientations, and biomedical information (all speakers) (11).

One RIAS-trained coder with over 20 years of experience with the system coded all of the family conference recordings. Intra-coder reliability (Pearson’s correlation coefficients) was calculated on 3 randomly selected, double-coded recordings. The average reliability, based on Pearson’s correlation coefficients for RIAS categories with a mean >1.0, averaged 0.991 for both clinician and family codes.

Analysis of language complexity and personalization—In addition to RIAS analysis, language complexity was evaluated from dialogue transcripts using Microsoft Word “grammar summary statistics,” and included reading level, number of words per sentence, and use of passive voice as a proxy for conversational formality. These measures have been shown to reflect oral literacy demand in prenatal counseling sessions.(20)

Personalization, or the degree to which clinicians tailored their conversations to the individual patient and family, was assessed using the psychosocial and socioemotional RIAS analysis, and by reviewing transcripts for clinician use of the infant’s correct name and gender.

Statistical Analysis and Approach

Descriptive statistics were used to describe the contribution of each participant to the conference discussion and to explore differences across participants in terms of total contribution to the discussion, contribution focus and overall style of their contribution in terms of patient-centeredness. These contrasts included conferences in which one vs. two

parents participated; when a second physician joined the primary physician; when a nurse and/or social worker was present or not; and, when the conference included multiple physicians and multidisciplinary participants or not.

Because this study is small and exploratory, this pilot was designed to be generative in identifying trends to guide future research; it was not designed to imply statistical significance.

Results

Characteristics of participants and the context of the family conferences

27 conversations were eligible; 5 parents did not consent to audiotaping, 3 parents were not approached due to time constraints. We analyzed 19 conversations that were led by 23 different clinicians ("primary clinicians") and included 31 family members. Demographic characteristics of family participants reflect a diverse group in terms of gender, race/ethnicity, age and level of education and infant diagnosis, as described in Table 2. Also reflected in the table are primary clinician characteristics. The majority of primary clinicians were neonatology attending physicians or fellows. Twelve of nineteen conversations included non-physician team members (9 nurses, 7 social workers, 4 trainees, 1 case manager, 1 respiratory therapist, 1 physician assistant).

The recorded conversations occurred at different points during the NICU hospitalization (range infant day of life 1 to 5 months). All conversations were prompted by serious medical complications and most involved a major medical decision, for instance whether to pursue cardiopulmonary resuscitation, tracheostomy placement, or organ transplantation. Five infants, 26% of those in the study, died in the NICU or were discharged to hospice care.

Family Conference Characteristics and Dialogue Focus

As reflected in Table 2, professional and parental attendance at the family conference varied quite a bit and this affected the communication processes of the meeting. In addition to the attending physician who was present in all meetings, 14 conferences included a specialist or fellow (and 5 did not); 12 conferences included a non-physician team member (7 did not); and 9 conferences included a full complement of attending physician, specialist/fellow, and non-physician, multidisciplinary professionals (10 did not). Finally, all conferences included the infant's mother and in 13 instances she was joined by the child's father. One conversation included more than two family members.

Conference composition was related to meeting duration (Table 3). The overall length of the conferences averaged 30.7 minutes (range 11–52 minutes); compared to meetings with only the primary clinician, the participation of a non-physician team member increased conference duration by about 10 minutes, while having a second clinician and a non-physician member increased the conference duration by 12 minutes. The longer conference lengths were primarily accounted for by clinician input; 89% of the professional team's communication was delivered by clinicians (a total of 558 statements) with minimal input from non-physician team members (a total of 68 statements).

In all but one conference, mothers were more verbally active than fathers, contributing three times as many statements to the conversation as the infant's father or other family member. Overall the presence of the father in the sessions did not alter the communication focus or amount of maternal, physician or full team dialogue.

The bottom cell of Table 3 presents patient-centeredness scores across conference composition. While no statistical significance was found, mean scores were lower when the primary clinician was not accompanied by a 2nd clinician, when non-physician team members were absent, and when the mother was not accompanied by the infant's father or other family member.

Table 4 presents the distribution of clinician and parent contribution to conference interaction by code categories. Most of the exchanges focused on the delivery of biomedical information, and this was especially true for the clinicians. Clinicians asked relatively few questions of the family especially in regard to psychosocial/lifestyle topics. Aside from delivering medical information, the most common categories of clinician contribution was devoted to facilitation, responding to parent expressed emotion and positive statements. Overall, non-physician team members added relatively little dialogue content, and the majority of it was medical information.

The highest frequency area of family contribution to the dialogue was in the area of facilitation, which principally involved paraphrasing or interpreting what was heard from the medical team, followed by disclosing medical information, and to a lesser degree psychosocial/lifestyle information. Parents asked questions primarily in the medical domain.

Although half of those infants had been in the NICU for >1 month, in over half (11/19) of the meetings, at least one of the primary clinicians had not met the family previously. The infant's name was not used by any clinician in over one-third (7/19) of the meetings; in 3 meetings phrases like "the baby" or "babies like this" were used rather than reference to the baby's gender or name.

Finally, an analysis of language complexity used during the conferences based on a grammatical summary of transcripts found low levels of oral literacy demand; the average number of words per sentence was modest 10.5 (range 6.1–16.4) and less than 2% of sentences used the passive voice. The use of multi-syllabic words was minimal and on par with reading material written at the 4th grade level.

Discussion

Frameworks for counseling parents with critically ill newborns have largely been formulated without the benefit of systematic observation of common practice. To the best of our knowledge, this is the first study that provides information about real-time discussions between NICU parents and clinicians regarding high risk newborns. Similar to our previous findings based on physician performance in simulations, clinicians overwhelmingly dominated the discussions by focusing on the delivery of medical information. Despite the volume of medical information that clinicians delivered, they used fairly simple language, and a conversational and straightforward sentence structure. Little clinician dialogue

involved asking families to share medical or social information. The family conferences often occurred without the benefit of pre-existing relationships between parents and participating clinicians. Many conversations included multidisciplinary medical team members such as nurses and social workers, though these members contributed relatively little and did not increase the amount of dialogue related to psychosocial and lifestyle issues.

The recorded conversations were often prompted by a serious change in an infant's condition and the need for medical decision-making. Given this, and given prior reports from both clinicians and families (13, 15), we were not surprised that clinicians would prioritize the delivery of medical information in these discussions. On average, this accounted for more than half of all dialogue, and the percentage increased when there were more clinicians in the room. Medical dialogue dominated conference discussions less so in the current study than in our earlier simulated study of prenatal consults,(11) perhaps suggesting a higher information burden during initial prenatal consultation or a more compelling demand of actual patients for emotional and psychosocial/lifestyle exchange.

While the ideal proportion of clinician-family conversations that should be devoted to conveying medical information is not known, data suggest that family comprehension may be overwhelmed by excessive information, especially in emotionally intense situations.(21–23) We found that clinician dialogue included few questions for parents, suggesting that it could be difficult for them to recognize if or when a family reached “information overload.” If clinicians do not routinely assess family perceptions, this may underlie the well-described phenomenon where parents and clinicians have different recall about a discussion they shared.(9, 24) We have previously shown that parents want clinicians to begin conversations by inviting parents to talk about what they already understand about their infant's medical issue, and then to provide information tailored to that knowledge base.(25) In the current study, many clinicians were meeting parents for the first time during the conference, so it is unlikely that they had assessed parent understanding prior to the recorded conversation. Families commonly restated or rephrased the medical information that they heard, as reflected in their use of the RIAS code category of facilitation; this likely offered clinicians some sense of family comprehension. Explicitly and consistently assessing parent understanding before, during, and after important conversations could make the transfer of information more efficient and effective.

Meaningful discussions about serious medical decisions includes the consideration of relevant psychosocial/lifestyle dimensions of parental and family functioning. These data about family context and concerns are relevant to care plans and are essential to forming relationships with families. Data suggest that families are most satisfied with conversations that allow them more opportunities to talk.(26) We (24, 25) and others (10) have described ways in which parents' emotions, hopes, and religious or spiritual beliefs often drive their approach to making medical decisions for their infant, though they often do not raise these issues with clinicians unless invited to do so. Clinicians in this study rarely asked psychosocial or lifestyle questions that would prompt parents to share information about themselves or their family.

Personalization-- exploring how patients' social situation, culture, and beliefs may impact health decisions--is a communication skill central to relationship-centered care and associated with improved health outcomes. (27–29) The types of psychosocial and lifestyle inquiry that parents tell us are relevant to their serious decision-making for their infant include family supports, their stressors outside of the medical crisis, their ability to make sense of this situation in light of their religious beliefs, or their sense of what it means to be a good parent.(5, 24, 30) Because so many clinicians in the current study were meeting parents for the first time, they may have felt uncomfortable broaching these topics. Additional missed opportunities for personalizing communication included neglecting to use the infant's name or gender, an oversight that parents report dehumanizes their child and diminishes their trust in clinicians.(31)

Guidelines for ICU family meetings incorporate interdisciplinary team member participation as a way to broaden discussions to include an appreciation for the family's social context (7), and data suggest that family satisfaction and patient care is improved when interdisciplinary teams are meaningfully engaged in the discussions. (8, 32) We anticipated that conversations that included non-clinician members would prompt more discussion of a family's emotional, spiritual, or other psychosocial and lifestyle concerns. In fact, most contributions of non-physician team members were related to medical information, and the patient-centeredness scores were not substantially different in conferences that included non-physicians relative to those that did not (.69 vs .62, respectively).

Our findings must be viewed in light of study limitations. Since only one conversation in a family's NICU course was recorded, other conversations could have taken place in which clinicians explored the psychosocial and lifestyle context of the family. Nevertheless, the recorded conversations reviewed very serious medical concerns for critically ill infants; 25% of whom died while in the NICU or were discharged to hospice. We did not video record the family conferences and it is possible that we missed the capture of non-verbal communication that may have shed additional light on the audio recorded conversations. It is also possible that participants may have altered their usual behavior because they knew they were being recorded. While we gathered data from Caucasian and African American families, our findings may not extend to other race/ethnicities or those with limited English proficiency. The recorded conversations occurred in a single NICU at different points in a family's NICU trajectory and we cannot account for the family's prior experiences communicating with NICU clinicians. The clinicians had variable levels of experience with counseling families, highlighting a systems issue of actual NICU care, where the most senior clinician may not be available for serious conversations. While this small exploratory pilot study has identified promising areas to guide future research, it was not designed to establish statistical significance. Potential differences based on parent race/ethnicity, education, or socioeconomic status should be included in further study.

Our study did not assess the systems challenges of communication in the NICU. Consistent and coherent communication during prolonged hospitalizations is made unwieldy by the many teams, disciplines, and clinicians involved in the care of critically ill infants. Shiftwork, rotations, subspecialty silos, and multiple layers of trainees further interfere with optimal communication. Building individual clinician skills is not enough to optimize care

of these infants and their family; we need to understand more about team-based and ICU-based strategies to enhance relationships and trust with families.

Conclusions

Evidence-based strategies to enhance communication between families and clinicians require empirical data about actual practice. The current study adds to this evidence base with a novel repository of audio recorded NICU family meetings that raises questions for future research. It also generates several important questions, including: What strategies might leverage the multidisciplinary expertise of non-physician team members to more broadly address families' concerns during NICU family meetings? Do these strategies prompt families to speak more and ask more questions? Do families feel more supported when family meetings include multidisciplinary members of the medical team? And what is the impact of family conference dynamics on medical decision-making? We will explore these and related questions in our future work.

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Abbreviations

NICU	(Neonatal Intensive Care Unit)
RIAS	(Roter Interaction Analysis System)

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Table 1

RIAS Codes and Dialogue Excerpts

Categories and Individual Codes	Representative Excerpts
Medical questioning All questions (open and closed) about medical & therapeutic issues like treatment regimen, referrals, tests ((all speakers)	“Did you also get to talk to pediatric cardiology?” (closed therapeutic question)
Psychosocial questioning All questions (open and closed) about lifestyle & psychosocial issues(all speakers)	“Now how will this affect your job if we transfer your son for a transplant evaluation?” (open lifestyle question)
Biomedical information and counseling Giving of medical & therapeutic regimen information (all speakers) (related counseling – clinician only)	“Now we have to weigh, of course, the prematurity issues versus what’s going on with the fluid accumulation.” (medical information)
Psychosocial information and counseling Giving lifestyle & psychosocial information (all speakers) (related counseling – clinician only)	“We had a patient that had never been outside and that was like one of the things the parents wanted to accomplish”. (psychosocial information)
Facilitation Asking for understanding; paraphrase and interpretation (all speakers); asking for patient opinion; expressing cues of interest (clinician only)	“How do you think she is doing?” (asks for patient opinion)
Positive talk Laughter and jokes; approvals; compliments; agreements (all speakers)	“So, good questions.” (approval)
Emotion talk Empathy; concern; reassurance/optimism; (all speakers)	“We’re going to be optimistic about that at the moment.” (reassurance/optimism)
Negative talk Disagreement; criticism (all speakers)	Parent: “I don’t think she needs this operation.” (disagreement) Dr: “She absolutely needs it.” (disagreement)
Social talk Social talk, greetings and amenities (all speakers)	“Nice to meet you”
Procedural talk Instructions; transitions; orientation (all speakers)	“We’ll do a shunt tap next week.” (orientation)

Table 2

Demographic Characteristics of Patients, Parents, and Primary Clinicians

Characteristic	Infants (n=19)	Parents (n= 31)	Primary Clinicians (n= 23)
Gender			
Female	9	21	18
Male	10	10	5
Race/ethnicity			
White	12	19	15
African American	7	12	5
Asian or Pacific Islander	0	0	3
Primary diagnosis			
Extreme prematurity	5		
Congenital heart disease	4		
Major congenital anomaly	2		
Other genetic syndrome	4		
Hypoxic ischemic encephalopathy	1		
Other	3		
NICU disposition			
Home	12		
Transfer for rehabilitation	2		
Hospice	2		
Death	3		
Relationship to infant			
Mother		19	
Father		10	
Grandparent		1	
Other relative		1	
Age, y			
20–25		3	
26–30		7	
31–35		12	
>35		11	
Level of education			
High school or less		9	
Some college		9	
College graduate		10	
Graduate school		3	
Staff position			

Characteristic	Infants (n=19)	Parents (n= 31)	Primary Clinicians (n= 23)
Attending physician			11
Fellow			7
NP or PA			5
Pediatric specialty			
Neonatology			15
Neurosurgery			3
General surgery			1
Cardiology			1
Genetics			2
Palliative care			1
Years in practice			
<5			7
5–10			4
10–20			4
20+			8

Table 3

Differences in Family Conference Communication by Team Member Composition

Conference elements	Over all family conferences Mean (SD) range	Primary and 2nd clinician present vs primary clinician only Mean (SD) range		Non-MD's present vs not present Mean (SD) range		Mother and father present vs mother only Mean (SD) range	
		2 nd doctor (n=14)	Attending physician (n=5)	Yes (n=12)	No (n=7)	Mother and father (n=13)	Mother only (n=6)
Conference duration in minutes	Over all family conferences 30.7 (11.4) 11.3–51.5	32.3 (11.9) 11.3–51.5	26.1 (9.2) 17.3–37.4	34.5 (11.0) 19.4–51.3	24.1 (9.4) 11.3–36.7	33.2 (12.3) 11.3–51.5	25.3 (7.3) 17.3–37.4
Primary clinician statement frequency	314 (150) 69–648	312 (165) 69–648	318 (115) 205–513	301 (160) 69–648	336 (141) 204–569	298 (159) 69–648	348 (135) 205–513
2nd clinician statement frequency	244 (131) 18–753	235 (193) 18–753	--	282 (201) 19–753	119 (119) 18–279	276 (199) 18–753	87 (49) 40–138
Non-MD team members statement frequency	68 (64) 2–223	71 (49) 37–106	71 (49) 37–106	68 (63) 2–223	--	74 (68) 17–223	48 (53) 2–106
Mother statement frequency	218 (110) 63–438	232 (119) 63–438	180 (74) 97–296	238 (97) 106–411	185 (130) 63–438	227 (125) 63–438	200 (72) 110–296
Father statement frequency	75 (56) 5–165	76 (54) 5–165	71 (90) 8–135	82 (59) 5–165	60 (54) 8–135	75 (56) 5–165	--
Patient-centeredness score	.66 (.38) .29–1.53	.71 (.43) .29–1.53	.52 (.10) .41–.66	.69 (.38) .29–1.53	.62 (.40) .39–1.5	.69 (.41) .29–1.5	.60 (.31) .38–1.2

Table 4
Participant contribution to high frequency interaction codes during family conferences

Code categories	Primary Clinician Statement Frequency Mean (SD) range (n=19)	Second Clinician Mean (SD) range (n=12)	Non-physicians Mean (SD) range (n=12)	Mother Mean (SD) range (n=19)	Father & other family members Mean (SD) range (n=13)
Biomedical questioning	6.7 (8.7) 0-34	4.6 (7.8) 0-26	1 (2) 0-6	9 (8) 1-29	6 (8) 1-32
Psychosocial questioning	4.6 (8.1) 0-27	2.1 (5.1) 0-18	2.0 (2) 0-6	1.0 (2) 0-6	0.2 (0.6) 0-2
Biomedical information giving	166 (81) 15-329	145 (119) 11-440	37 (43) 1-137	47 (30) 0-12	18 (19) 0-67
Psychosocial information giving	22 (36) 0-152	9 (13) 0-43	6 (9) 0-29	29 (31) 0-109	9 (12) 0-38
Facilitation	38 (35) 3-127	13 (15) 0-54	6 (8) 0-26	76 (44) 18-170	20 (17) 0-51
Positive talk	31 (27) 3-119	19 (17) 0-62	7 (6) 0-23	33 (20) 6-84	9 (9) 0-30
Emotion talk	36 (19) 7-65	31 (29) 1-92	7 (7) 0-22	17 (14) 3-49	8 (10) 0-34
Social talk	0.9 (1.18) 0-3	.4 (.7) 0-2	2 (2) 0-2	.6 (.7) 0-2	.3 (.5) 0-1
Procedural talk	8 (5) 2-20	7 (7) 0-23	2 (2) 0-6	4 (4) 0-15	2 (2) 0-6
Total talk	314 (150) 69-648	235 (193) 18-753	68 (63) 2-223	218 (110) 64-438	75 (56) 5-165