



## Health Communication

ISSN: 1041-0236 (Print) 1532-7027 (Online) Journal homepage: <http://www.tandfonline.com/loi/hhth20>

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To cite this article: James D. Robinson, Jeanine W. Turner, Elise Morris, Michelle Roett & Yuting Liao (2016) What Residents Say About Communicating with Patients: A Preliminary Examination of Doctor-to-Doctor Interaction, *Health Communication*, 31:11, 1405-1411, DOI: [10.1080/10410236.2015.1077415](https://doi.org/10.1080/10410236.2015.1077415)

To link to this article: <https://doi.org/10.1080/10410236.2015.1077415>



Published online: 06 Apr 2016.



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## What Residents Say About Communicating with Patients: A Preliminary Examination of Doctor-to-Doctor Interaction

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### ABSTRACT

This article describes the implementation and initial assessment of a training blog created within a family medicine department and used as a feedback mechanism for residents. First-year residents ( $n = 7$ ) at a large private East Coast university hospital had an interaction with a patient recorded and posted to a training blog. The residents then watched this, and posted a reaction to their interaction with the patient. Within this reaction the residents offered self-reflection on the experience and were provided an opportunity to solicit advice from their colleagues to improve their communicative strategies and style. Once the reaction was posted to the blog, other residents watched the videotaped interaction, read the self-assessment written by the resident, and responded as part of their communication training. Content analysis of the messages suggests that the residents are socially skilled. They offer each other advice, provide each other with emotional and esteem social support, and use techniques such as self-deprecation in what appears to be a strategic manner. Perhaps most interesting is that they tend to identify the problems and difficulties they experience during patient–physician interactions in an apparent effort to deflect responsibility from the practicing physician. Patient challenges raised by residents included talkativeness, noncompliance, health literacy, and situational constraints.

Health communication scholars have long been interested in how doctors and patients interact—in part because positive perceptions of patient–provider interaction have been linked to patient satisfaction, adherence to treatment, and physiological status (Brown, Stewart, & Ryan, 2003). Dubbed patient-centered care, a growing body of research has focused on clinical encounters that improve the patient’s experience, strengthen the doctor and patient relationship, and enhance medical decision making (Stein, Frankel, & Krupat, 2005). To date, however, precious little research has explored how doctors interact with each other about their communication with patients. This pilot investigation documents how doctors in a residency program communicate with other residents in an effort to better understand doctor and patient interaction and how physicians view the process of communication.

Much of the foundational work on patient-centered care stems from research on what constitutes effective communication. Researchers have found that effective patient-centered communication requires a balanced exchange of information, ideas, perceptions, and preferences between the patient and the provider. These exchanges are complicated by a variety of different factors, including that (1) physicians need to gather and process patient information quickly; (2) they need to develop rapport and reassure their patients; (3) they need to encourage patients to disclose information about their health and personal lives; (4) patients differ significantly in their levels of health literacy; and (5) patients often have a variety of different health problems that all need attention.

Additionally, depending on whether the medical consultation involves an initial interaction, an ongoing relationship, an acute problem, or a chronic condition, the doctor has to navigate different relationship and information-sharing goals.

In an effort to improve doctor–patient communication, the National Cancer Institute identifies six functions of those interactions that should be considered. These are fostering healing relationships, exchanging information, responding to patients’ emotions, managing uncertainty, making informed decisions, and enabling patient self-management (Levinson, Lesser, & Epstein, 2010). This realization has led researchers to explore the pedagogical practices that best support the learning of effective communication skills (Makoul, 2001; Roter et al., 2004; Simpson et al., 1991) and ultimately medical competence.

Epstein and Hundert (2002) define competence in medicine as “the habitual and judicious use of communication, knowledge, technical skills, clinical reasoning, emotions, values, and reflection in daily practice for the benefit of the individuals and the communities being served” (p. 226). Epstein (2007) argues that “competence is not an achievement but rather a habit of lifelong learning” (p. 387). This means that in addition to medical training, residents need to be trained in communication skills, and such training programs have proliferated within the medical school community (Holt, Miller, & Nasca, 2010).

Communication training programs typically include lectures regarding communication concepts, followed by practice

with standardized or real patients that is videotaped and then watched and discussed for self-reflection and assessment. The use of videotape as a method has been shown to increase self-awareness and awareness of interaction styles (Duffy et al., 2004; Jonassen, 1979; Makoul, 2001). Videotapes of real consultations also provide evidence of the physician's ability to incorporate ideas from lectures into everyday interactions (Deveugele et al., 2005).

Once videotapes of doctor and patient interactions are created, many feedback models have been used to help residents improve their communication skills. Typically, the residents simply observe themselves interact with a patient and discuss their interaction with their colleagues and/or a faculty advisor. In these programs a faculty member or a trainer reviews the videotape and discusses, either individually with the resident or student, or within a small group, how different communication patterns or styles could lead to certain outcomes (Duffy et al., 2004). However, small-group training or feedback sessions that review videotaped interactions are time-consuming (Deveugele et al., 2005). Since the feedback sessions occur in face-to-face, real-time settings, the time associated with review can be considerable and therefore it can be difficult to generate ongoing assessment and reflection throughout the year.

In addition to the challenges associated with providing feedback to medical residents on their communication with patients, little attention has been given in the literature to communication between residents or physicians in general about the practice of healthcare (Solet, Norvell, Rutan, & Frankel, 2005). The majority of research in this area (Solet et al., 2005) has explored the handoff of patients between physicians (Dracup & Morris, 2008; Solet et al., 2005), the signing out procedures of residents (Bump et al., 2011) or team communication in general (Lingard et al., 2008; Pronovost et al., 2003; Reader, Flin, Mearns, & Cuthbertson, 2009). This research discusses specific strategies for improving patient handoffs or team procedures, but no research explores the interaction between health care providers about the provision of care. Additionally, while documented as an extremely stressful environment (Butterfield, 1988; Collier, McCue, Markus, & Smith, 2002; Landau, Hall, Wartman, & Macko, 1986), little research has explored mechanisms of social support or communication within medical residency programs (Butterfield, 1988; Jung, Kennedy, & Winder, 2012). While some residency programs have responded to the stress in residency programs by creating social support groups, convenience and time are critical challenges in the implementation of these strategies (Brashear, 1987).

The present study explores doctor-to-doctor communication through the use of a private weblog or blog among first-year residents to examine doctor-patient communication. In contrast to videotaped, simulated patients, in this project seven doctors were each videotaped with one of their patients and each of those tapes was uploaded to a blog for peer discussion and reactions. This article describes the implementation of this project, focusing specifically on the interaction among the residents as they reflect on the viewing of doctor and patient visits within a blog environment.

## Blogs as forms of asynchronous feedback

A blog can be thought of as a personal website or webpage where an individual or group of individuals records opinions, links to other sites, or conveys information on a regular basis. Information can be organized chronologically to follow the flow of information. Originating in 1997, blogs have emerged within many industries and are currently in use by corporations and universities (Sim & Hew, 2010). In a review of 24 peer-reviewed articles assessing the use of blogs in higher education, Sim and Hew (2010) found that blogs have been used in the disciplines of language, education, business, information technology, and sciences. Blogs were used as a learning journal, a record of activity, an outlet to express emotions or feelings, a space for interaction, an assessment tool, and a task management tool. In assessing learning outcomes from blogs, Sharma and Xie (2008) found that blog posting supported learning by providing instructor and peer viewpoints and reflection. Zeng and Harris (2005) found that blogs increased the intellectual exchange among students and served as a tool for reflective thinking and writing. Additionally, blogs provide an effective tool for peer and instructor feedback (Dippold, 2009). Dippold (2009) defines feedback as "both tutor and learner comments on learners' contributions that are not associated" with formal grading (p. 20). "Instead, the focus is on helping students to identify the strengths and weaknesses inherent in their performance and to improve it (Dippold, 2009, p. 20). Peer feedback provides benefits both to those who provide and those who receive it because students are able to critically assess a practice according to specific standards and then transfer those assessments to their own work (Nicol & Macfarlane-Dick, 2006).

Previous research outside of blog-specific settings has found that the peer ratings of medical students and residents are correlated with grades given by faculty and written examination performance, suggesting that residents can be competent providers of feedback (Linn, 1975; Thomas, Gebo, & Hellmann, 1999). This body of research suggests that residents, even when asked to assess other residents, will develop ratings similar to those of other faculty, suggesting that residents could be helpful providers of peer feedback.

The development of feedback mechanisms for doctors about doctor-patient interaction has been hampered by the time constraints associated with these activities. The blog environment offers the opportunity not only to provide a context for reflection on doctor and patient interaction, but also to create a window for observing doctor-to-doctor communication and the blog as a potential mechanism for doctors providing support for one another.

Therefore, the following research questions are posited:

RQ1: What types of messages do the residents include in their efforts to provide other residents feedback regarding their videotaped interaction?

RQ2: Do residents engage in relational management strategies when they provide feedback to the other residents?

RQ3: What types of problems that impact the ability to treat patients are identified by the residents in their feedback to other residents?

## Method

### *The development of the blog*

To improve and support the development of communication skills within the doctor and patient interviews, the family medicine program developed a mechanism for reviewing and reflecting on real doctor and patient visits (as opposed to simulated patients) through peer and supervisor interaction.

The residents attended an orientation in July 2012 where they were introduced to the medical center and the residency program. At this time, they also participated in a workshop that explained the Doctor-Patient Communication Project and provided the residents with the opportunity to view the technology. All of the residents had participated in some form of doctor-patient communication training in their own medical school programs. Of the seven residents, one had never been videotaped. The rest of the residents had been videotaped with simulated patients but had not received specific feedback on their communication during the interaction. The residents who were taped reported that they had been given the videotape to watch later but it was not integrated into a curriculum of feedback. One resident admitted that she had never seen the video, and another had been given a copy of the video to watch at graduation but had never gotten around to it. Another resident couldn't remember whether he had watched it or not but remembered being videotaped. Three were able to view their tapes and receive comments from a supervisor.

At the beginning of each month, a resident was taped and the process started. In total, seven residents were recorded conducting an office visit with a patient. Each resident reviewed his or her interaction and offered commentary and a critique of their performance. In addition, the remaining six residents were asked to review the interaction and the self-critique and then evaluate their colleague's performance.

### *Content-analytic scheme*

Each blog message was analyzed sentence-by-sentence, and compound sentences were divided into two or more thought units. For example, a comment like "Emily, you did a great job with that very difficult patient" would have been broken into three thought units and coded as (1) social support ("you did a great job"), (2) problem identification ("a very difficult patient"), and (3) a blogger reference ("Emily"). This process yielded a total of 1,628 message units that were coded into seven content categories.

The seven categories were (1) social support, (2) problems and difficulties, (3) advice, (4) self-references, (5) other-references, (6) self-deprecation, and (7) identification of the physician being critiqued. Messages were coded as social support if they communicated concern and admiration for the doctor under review. Messages such as "You did a great job" or "You kept the conversation on track" would be coded as instances of social support. A social support message could include esteem social support or emotional social support or both emotional and esteem social support. Messages were

coded as problems or difficulties if the resident identified a difficulty that occurred during the office visit. Such difficulties might include a particular tough diagnosis (e.g., "Figuring out what to focus on in a visit about diabetes can be tough"), patient characteristics (e.g., they don't follow up), or the difficulties associated with the new electronic messaging system. Advice messages involved those messages where the residents gave specific suggestions (e.g., I try to wait to type until after the patient finishes talking). Whenever the residents referred to themselves or something they did the message was coded as a self-reference. A resident writing "I do this" or "I like to direct the interaction" would be examples of self-references. Self-deprecating messages were messages where the reviewer used their comment to commiserate or point out that they were not particularly good at some aspect of the process (e.g., "I am terrible at this"). References to the doctor or person being reviewed were messages where the writer explicitly mentioned the doctor who was under review (e.g., a reference to "Katherine" in feedback regarding Katherine's behavior. Finally, the code "other references" was used whenever the individual critiquing a resident referred to one of the other doctors in their cohort. In some cases these comments might be specific, such as "I agree with Katherine," and in other cases they are not so specific, such as "like the others said."

Two unpaid research assistants underwent a single training session for a total of 1 hour. Upon completion of the training session, each coder was asked to content analyze 100 messages to be coded independently. Kappa or  $\kappa$  (Cohen, 1960) indicated acceptable intercoder agreement for all variables: social support ( $\kappa = .84$ ), identification of the physician being critiqued ( $\kappa = 1.00$ ), self-deprecating ( $\kappa = 1.00$ ), references to others ( $\kappa = 1.00$ ), self-references ( $\kappa = 1.00$ ), problems and difficulties ( $\kappa = .82$ ), and advice ( $\kappa = .79$ ). In addition, the coders categorized the 342 comments associated with problems into an emergent eight-category coding system. Again, the levels of intercoder agreement were judged as more than adequate: computer and record-keeping problems ( $\kappa = 1.00$ ), distractions that occurred during the office visit ( $\kappa = .77$ ), patients being noncompliant ( $\kappa = .74$ ), patients being low in health literacy and understanding ( $\kappa = .81$ ), problems of time ( $\kappa = .89$ ), specified and nonspecified health problems ( $\kappa = .72$ ), and problems in talking with patients ( $\kappa = .79$ ).

## Results

Research question 1 asked what types of messages the residents included in their efforts to provide other residents feedback. Examination of their blog post replies indicates that the typical message contained a median of 337 words (mean = 409.16; SD = 225.34).

The average blog post contained a mixture of the seven message types identified. The blog post replies contained about 10 pieces of specific advice (mean = 9.97; SD = 6.5). In addition to the specific advice, the typical blog post replies contained seven messages of emotional and esteem social support (mean = 7.67; SD = 4.13).

Much of the specific advice being offered was also framed as "this is what I do." The average reply contained 16 self-

references (mean = 16.26;  $SD = 11.5$ ) and very few references to the other reviewers (mean = 0.73;  $SD = 0.94$ ) within the cohort. References to the doctor's being reviewed in initial blog posts were more common and typically the focus of the advice and the evaluation offered. The typical blog post reply referred to the videotaped resident about six times (mean = 5.83;  $SD = 4.28$ ).

Finally, in their replies the residents frequently described the problems and hardships of interacting with patients and the complex nature of the task. The average blog post reply identified 11 problems and difficulties that occurred within the diagnosis and interaction (mean = 11.02;  $SD = 10.04$ ). Most of these comments also included some encouragement that the process would become easier with practice and experience.

Our initial examination of the relationships between the seven commonly observed message components using Pearson correlations suggested there were systematic relationships among the message strategies. Concern over the impact of message length led us to examine data using partial correlations. After controlling for the length of message, we observed that the higher the number of social support comments (emotional and esteem messages) included in a critique of the resident's interaction with a patient, the more direct references they made to the resident under scrutiny ( $r = .34$ ,  $n = 28$ ,  $p < .05$ ). In addition, the number of social support comments (emotional and esteem messages) included in a critique of the resident's interaction with a patient was inversely related to the amount of advice they offered the resident ( $r = -.32$ ,  $n = 28$ ,  $p < .05$ ). These references to the resident focused on comments they made about themselves and questions they raised to the other residents about their performance in their self-critique. It is interesting to note that the number of social support messages was also inversely related to the number of self-references made ( $r = -.51$ ,  $n = 28$ ,  $p < .001$ ). In short, it appears the residents offered less advice, made fewer self-references, and included more responses directed at the questions and issues brought up by the resident under scrutiny when they were providing emotional and esteem social support.

In addition, a pattern was observed in the relationships between self-references, references to the other residents, and self-deprecating remarks. Specifically the number of references residents made about themselves was positively related to the number of references they made to the other residents ( $r = .31$ ,  $n = 28$ ,  $p < .05$ ), and the number of self-deprecating remarks residents made ( $r = .30$ ,  $n = 28$ ,  $p < .05$ ). Since there were no instances of other deprecating remarks, it appears that commentary about the self was softened by the inclusion of self-deprecation—perhaps as a way of not appearing to be too conceited or as having all the answers.

It is interesting to note, however, that other references and self-deprecating remarks were inversely related ( $r = -.32$ ). Similarly, the number of problems identified by the residents in their critiques was also inversely related to references to the other residents. Residents were reluctant to include self-deprecating remarks when discussing other residents—perhaps as a strategy to reduce the likelihood of misunderstandings about who was being criticized. Most interesting,

however, is the fact that comments referring to other residents were less likely to contain the identification of problems that occurred during the doctor–patient interaction. References to the other residents' commentary and critique consisted of agreement with their positive evaluations of the resident under scrutiny. In short, nobody dragged anyone else into the discussion when they were identifying problems and nobody piled on by agreeing to the veridicality of the problems identified by other residents.

Given that the word count varied dramatically both between and within the messages posted on the blog (range = 1,010), the first research question examined which message variables predicted message length. A stepwise linear regression indicated that the number of problems identified by the resident in his or her blog post reply ( $\beta = 18.47$ ,  $p = .001$ ) and the number of references to the other resident physicians ( $\beta = 55.81$ ,  $p = .007$ ) were the only successful predictors of message length ( $F = 68.91$ ,  $p < .001$ ,  $r^2 = .82$ ). None of the other message variables (self-references, self-deprecating remarks, the amount of advice offered, social support messages) predicted message length or word count.

A second linear regression was employed to determine whether the number of problems identified could be predicted by the message variables. The analysis suggested that (1) the number of emotional and esteem social support messages provided ( $\beta = .31$ ,  $p = .033$ ), (2) the number of self-deprecating comments ( $\beta = .32$ ,  $p = .032$ ), and (3) the amount of advice they offered ( $\beta = .49$ ,  $p = .002$ ) were significant predictors ( $F = 9.60$ ;  $p < .001$ ;  $r^2 = .43$ ).

A third linear regression examined the predictors of self-deprecating remarks. The stepwise regression indicated that self-deprecating remarks ( $\beta = .40$ ,  $p = .026$ ) were predicted by the number of problems identified within the message ( $F = 5.49$ ;  $p < .03$ ;  $r^2 = .16$ ), but the other predictors (social support messages provided, advice, references to other blog posters, self-references, and message length) were not significant contributors to the model.

A fourth stepwise regression analysis with the number of emotional and esteem social support messages as the dependent variable indicated that the number of references to the resident under scrutiny ( $\beta = .40$ ,  $p = .021$ ) was the only significant predictor ( $F = 5.97$ ;  $p < .02$ ;  $r^2 = .14$ ).

The final research question asked about the nature of the problems that residents face in dealing with patients as identified by the residents. Given the nature of the task, it comes as no surprise that the residents identified problems with talking to their patients as the most common type of difficulty they experienced. Just over 32% of the problems identified were coded as communication problems ( $n = 110$ ). Communication problems included issues such as patients who were noncommunicative, patients who were too talkative, patients who kept changing topics, problems associated with controlling the conversation, and, in a small number of cases, problems associated with language differences and the use of an interpreter. Other problems included distractions that occurred during the office visit (5.6%)—such as children being present or cell-phone calls—patients being noncompliant (6.5%), and the fact that the computerized note-taking system and note taking in general adversely affected

interaction with the patient (10%). Residents were also likely to discuss time constraints and patient wait times as a problem (10.9%). Residents were somewhat less likely to indicate that the patients were not health literate (10.0%), well educated about their illness, or able to differentiate between serious health problems (e.g., hypertension) and less serious health issues (e.g., sore wrist). Finally, residents often commented about health problems facing the patient—and did so in a specific (e.g., patient has diabetes) or in a nonspecific manner (e.g., patient health is complicated) in 17.9% of the problems identified.

## Discussion

Residents asked to review and comment on their colleagues' interactional style and abilities during interactions with patients are paradoxically put in a difficult situation and an excellent situation to learn about interacting with patients. The situation is difficult because residents are put in the position of providing peer critique, and the situation is excellent in that it provides a type of observation and reflection not usually available to residents. Such training allows the residents to watch and learn from their own interactions with the patients, as well as to learn how other residents approach patient care. Additionally, it provides them with the opportunity to solicit and to receive advice about their communicative behavior from the other residents. Finally, it also provides an opportunity for sharing information that might not be explicitly available outside of this context and it provides residents with an opportunity to build relationships and group cohesion.

Given the nature of the assignment, it is not surprising that residents were willing to provide advice. The average blog post (409 words) contained 10 pieces of advice, and this advice was most often directed at the comments and questions posed by the resident under scrutiny in that person's initial blog post/self-assessment. In addition, residents also provided emotional and esteem social support to the resident under scrutiny. In fact, 50% of the blog post replies contained between five and nine social support messages and 25% contained more than nine social support messages.

It is interesting to note that after controlling for message length, the number of social support messages provided was inversely related to the amount of advice the residents offered the resident under scrutiny. That is to say, residents offering advice are less likely to provide emotional and esteem social support to the resident under scrutiny. In addition, after controlling for message length, the number of problems identified by a resident was inversely related to references to the comments made by the other residents involved in the critique. This suggests that when residents identify communication problems they are less likely to make references to the comments of the other residents so they do not involve residents into their analysis and critique. Perhaps the residents feel that if they make a critical observation about a colleague, they must accept all of the responsibility for the comment and not dilute that responsibility by pointing to others who may or may not agree.

Data also suggest that the provision of social support is also associated with references to the resident under scrutiny and inversely associated with self-references. Perhaps the desire to provide social support is cued or triggered by the self-assessment of the resident under scrutiny. Or perhaps self-criticism discourages the other residents from talking about their own behavior to insure nobody thinks they are suggesting they have no such problems. Future research may examine whether or not self-criticism reduces the need for the identification of problems among residents asked to critique a colleague. In addition, future research should ascertain whether self-criticism encourages emotional and esteem social support messages from the other residents in an effort to reduce negative self-feelings by the resident. It may be that the residents are trying to help their colleague save face.

Finally, the partial correlation analysis suggests that residents are careful to balance self-references with other-references. In other words, they are careful not to talk too much about themselves. When they do refer to themselves they are careful to bring in comments about others to reduce the appearance of self-involvement, and it appears they also make self-deprecating remarks to insure they are not viewed as being too wrapped up in themselves. These face-saving strategies point to the emphasis that reviewers placed on repairing any damage to the relationship caused by the critique (Mao, 1994). This matching also suggests that the doctors may be using the blog as a mechanism for connecting with each other as part of a similar team and using the blog as a means for providing support to the stressful situations often created through doctor-patient visits.

The regressions add additional clarity about how the residents interact with one another. The number of problems identified was the sole predictor of self-deprecating remarks. The single predictor of social support messages was the number of references to the resident under scrutiny. The numbers of problems identified by the residents in their critique were predicted by social support messages, the number of self-deprecating comments, and the amount of advice they offered. These findings suggest that problems identified in the interaction behavior of a colleague may be softened by the use of self-deprecating comments and that social support is to be provided to colleagues who point out their own shortcomings. Finally, it appears that residents with more problems were given more advice and more social support, and the resident responsible for the critique attempted to reduce the stigma of the problem by making self-deprecating comments.

While the purpose of this pilot investigation was to examine the types of messages used by residents as they provide feedback about patient-physician interaction, it became clear throughout the process that a second unintended consequence also emerged. That consequence is the observation of relational development and/or team-building mechanisms that seem to have occurred. The literature on patient-physician interaction examines some of the challenges that doctors face when interacting with patients. However, up until this research, we have not been able to assess how doctors interact with each other about patient care. The present research suggests that many of these residents are quite accomplished

interpersonally. Even the most cursory examination of the interactions between patients and physicians—when coupled with an examination of the feedback they provided one another—suggests some level of interpersonal sensitivity.

The development of this blog is important for many reasons. First, the blog provides an opportunity for doctors to reflect on their own doctor–patient communication and the opportunity to view and consider the interactions of their colleagues. The use of a blog can reduce the amount of time spent by each individual resident by eliminating the need for synchronous meetings/feedback. Since the blog is an asynchronous medium, it allows doctors the opportunity to watch the videos and read the comments on their own schedule, creating a potentially more efficient mechanism for sharing information. Second, because the feedback is not in a face-to-face setting, it potentially offers the opportunity for participants to reflect in a less threatening space, although this conclusion needs to be replicated in future research. It could be that the residents within this study provided more explicit supportive comments to make up for the lack of nonverbal gestures of support that would be available in a face-to-face environment. As the first reflective space of its kind, this blog creates the opportunity for a new channel of interaction to support the education and development of medical residents.

Finally, the evidence reported here suggests that the residents were indeed behaving in a relatively systematic if not strategic manner. Providing feedback and advice was the stated goal of the program, but it appears that in addition, the residents also used the opportunity to manage and perhaps even enhance their relationships by providing assistance and by framing their problems as being a function of the circumstances and not unlike the problems they themselves suffer from. When coupled with the emotional support messages, it appears that a secondary goal of this process was to maintain if not improve their social relationships. Future research in this area is sorely needed.

The content analysis of resident comments was also quite interesting and yields further insights into what residents talk about, how they view patients, and the role communication plays in that process. It is clear from the messages that residents view interacting with the patients as important and at the same time challenging. Nearly one-third of the problems identified by the residents focused on communication. While some of this may be an artifact of the task, it was also clear that there were no mentions of the interaction as being a positive experience for the resident. Almost every single mention of communication was framed as being a problem or difficult, and patient communication appeared to be viewed as a necessary evil. When coupled with the fact that the residents felt tremendous time constraints, it is somewhat more understandable that they felt a patient who “rambled” or “jumped from topic to topic” was problematic. Similarly, the residents uniformly felt that keeping patient records on the computer in the room also contributed to this problem. There were many specific references to an inability to appear attentive, make eye contact, or maintain a reasonable conversational flow as part of the problem. In short, it appears that the residents feel that their ability to perform as a physician is far greater than their ability to

conversationally navigate a relationship with the patient. And it is clear that much of the difficulty associated with interaction is believed to be a function of patient behavior (e.g., health literacy and noncompliance), structural properties of the interaction (e.g., time constraints, distractions, and record keeping and in particular the use of the computers during the office visit), and the myriad health problems that the residents face (e.g., complicated cases). Few of the comments associated with problems ( $n = 5$ ) suggested that the residents would be able to address these issues over time with practice. Again, this lends support to the notion that the problems are clearly viewed as being something that is largely outside the control of the resident.

From a communication research perspective, this blog provides a unique opportunity to not only study doctor and patient interaction, but also to study doctors' reflections on their patient interactions with each other while viewing tapes of their own interactions as well as those of their peers. In addition to studying the blog comments, specific connections between the coded videotapes of the interactions contrasted with the blog comments of the interactions could provide an interesting comparison.

### ***Limitations and suggestions for future research***

The small sample size certainly limits the generalizability of these findings. In addition, it would be important to determine whether or not residents' behavior indicates both divergence and convergence in their responses to each other. In particular, research examining the function word usage of residents could be a very valuable contribution to this area of research and a project that is currently underway. Function words are particularly interesting because they are generally outside the awareness of the individual and potentially excellent indicators of both convergence and divergence (Gasiorek & Giles, 2012; Ireland et al., 2011; Pennebaker, 2011). Finally, we would like to see research focus on language differences in replies to different residents. Specifically, it is reasonable to expect some of the residents to have more affinity for other residents and we would expect the feedback they provide to be more verbally immediate, just as it is reasonable to expect language changes based on the cognitive abilities of the patients. Future research should focus on the relationships between residents and their perceptions of communicative effectiveness. Such analyses will strengthen our understanding of the communication skills of these residents.

Additionally, comparing doctor-to-doctor interaction in a face-to-face setting with the blog setting would help to examine how relationship management strategies are used in synchronous and asynchronous settings for providing feedback.

### **Conclusion**

This research project provides a unique window into the interaction between doctors about patient care and the challenges and opportunities specifically focused on communication. Additionally, it introduces the examination of a blog technology that provided the opportunity for ongoing reflection over the year of the residency. Without the blog, we

would not have access to doctor-to-doctor interactions as they unfold in their conversations about patient interactions. As technological environments develop, health communication scholars can find new frontiers for understanding interaction and contributing to advances in health care communication.

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