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## Patient-Centered Communication in Digital Medical Encounters

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### Abstract

**Objective**—Patients are increasingly using the secure messaging function available through online patient portals to communicate with their health care providers, yet little is known about the characteristics of conversations that occur. The goal of this study is to describe the types of messages initiated by patients communicating via patient portals and to assess whether providers employ patient-centered strategies in their electronic responses.

**Design**—A total of 193 messages from 58 message threads between patients and providers were collected during a one-week period in a large health care system.

**Methods**—Content analysis of patient messages was conducted and deductive analysis of provider responses was employed for two types of patient-centered communication, provider use of supportive talk and partnership building.

**Results**—Patients sent nearly double the number of messages compared to providers (65% versus 35%). Patient messages expressed concern, sought medical solutions and requested assistance with administrative tasks. Over half (53.4%) of provider replies did not contain language reflective of either partnership building or supportive talk.

**Conclusion**—Partnership building language and supportive talk occurred at lower rates than documented in the literature on in-person encounters. This may represent a lost opportunity to strengthen the patient-provider relationship.

**Practice Implications**—As secure messaging is increasingly utilized as a form of patient-provider communication, it is important to understand how aspects of this communication channel, including the patient-centeredness of the language used by providers, impact patient-provider relationships and patient outcomes.

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## 1. Introduction

The Institute of Medicine defines patient-centeredness as care that is respectful of and responsive to patient preferences, needs and values[1]. It is advocated to enhance health care quality[1] and is considered to be an individualized and empowering method of care delivery[2]. An essential aspect of patient-centeredness involves effective communication between patients and providers[3], which has been demonstrated to increase the self-efficacy levels of patients[4], enhance trust[5] and contribute to shared decision making[6]. In addition, when providers use patient-centered communication techniques such as partnership building and supportive talk, patients become more active communicators[7].

Research supporting the benefits of patient-centered communication has primarily analyzed face-to-face consultations[7, 8], in which providers are generally responsive to patient needs[9] and encourage patients to ask questions[10]. However, in-person communication is associated with greater communication apprehension than electronic modes of communication[11]. Electronic communication can be less intimidating than in-person encounters, and studies have shown that it is now patients' preferred method for contacting a physician[12, 13].

One increasingly common type of electronic communication occurs through patient portals. Patient portals are secure online websites that give patients access to the personal health information stored in their electronic health record (EHR)[14], and typically include features that allow patients and providers to communicate via secure, electronic messaging. It has quickly become a viable new form of patient-provider communication[15–17]. In the U.S., half of all hospitals and 40% of physicians operate some form of patient portal technology[18], and significant growth is expected by 2020[19]. Patients who use online portals enjoy their convenience[20] and report enhanced satisfaction, greater efficiency, and higher-quality face-to-face visits[21]. Portals enable patients to become more active participants in their own care[22], as the technology can be used to initiate an interaction with their provider without the need for a face-to-face visit and without the distractions present in busy clinics.

While the creation of the patient portal is in and of itself a response to the realization that patient-centeredness is important, it is still unknown whether or not the patient-provider communication used within the secure messaging function is itself patient-centered. To date, most research on patient portal messaging use has focused on quantifying patient-provider differences in message length[23] and categorizing message content[24–28], such as medication and referral requests. As modes of communication between providers and patients continue to change rapidly and secure messaging becomes routine within health care, it is necessary to identify how patient-centered communication strategies can be utilized in this environment. Accordingly, the purpose of this study is to analyze messages transmitted between patients and providers to (1) understand the types of messages that patients initiate through portals, and (2) explore providers' use of patient-centered communication when responding to electronic messages.

## 2. Methods

### 2.1 Study Setting

This research was conducted in collaboration with a large health care system that serves Detroit, Michigan and the surrounding suburbs. The Health System owns a large multi-specialty medical group that employs over 150 adult-serving primary care physicians in 28 primary care clinics. Although the Health System also owns a mixed-model HMO, less than half of the patients seen by the Medical Group are enrolled in the HMO.

In 2012, the Health System purchased an enterprise license for EpicCare EMR[29], a commercial medical record software program, and its associated patient portal program, MyChart. The EHR roll-out was initiated first within the Health System's primary care clinics and then within their specialty care clinics. As originally implemented, patients seen in one of the Health System's clinics were able to use MyChart to securely schedule appointments, receive appointment reminders, pay bills online, view lab and other test results, manage information about their health, and communicate with care team members via a secure messaging system. MyChart messages are pushed directly to clinician inboxes and per Health System policy, MyChart messages are responded to by the next business day. The Health System's MyChart message response policy, explicitly prioritizes a quick electronic response to MyChart messages over calling patients to encourage patient portal usage. However, doctors within the Health System are salaried and there are no financial incentives for providers to answer portal messages. At the time of this study, 33% of adults over the age of 18 with a primary care visit had an activated portal account.

### 2.2 Study Design

All data used in the current analyses were compiled from the Health System's EHR data repository. This includes the content of secure messages as well as patient socio-demographic characteristics (i.e., age, gender, race ethnicity, marital status, and preferred language). We were also able to obtain information on provider's position (physician, nursing staff, or other) as well as Department. Prior to analyses, identifying information (including names) were redacted from all study files. Because the study was minimum risk and relied on review of existing records, the IRB waived consent.

Messages were retrieved during a one-week period in March 2014, resulting in a total of 193 messages from 58 patient-initiated message threads. We defined a message thread as a new sequence of messages between patients and providers about the same topic[30]. Inclusion criteria consisted of message threads that (1) began with a patient-initiated message, (2) included at least one provider response, and (3) were sent or received by patients over 21 years of age or caregivers who had patient permission to act as a proxy. Messages were excluded if they were not patient-initiated, did not include at least one provider response, or were sent or received by patients under 21 years of age.

### 2.3 Analyses

Content analysis, "a research technique for making replicable and valid inferences from data to their context,"[31] was used as the first analytic strategy. Two of the authors applied

inductive codes to identify the types of discussion initiated by patients. Next, deductive coding was conducted based on Street and Millay's[7] categories of provider patient-centered communication. The unit of analysis for the latter was each provider's individual response message. We examined the content of each message to identify occurrences of patient-centered responses by providers, either partnership building or supportive talk. Partnership building occurs when providers take patients' beliefs and opinions seriously and encourage them to express their feelings and ask questions[32, 33]. Supportive talk occurs when a provider acknowledges patients' feelings[34] and expresses empathy in order to reduce distress.[9] These codes were mutually exclusive, although it was possible that one message could be categorized in several different ways. To establish reliability, 20% of provider messages were randomly selected and independently coded by the authors. Interrater reliability was estimated pre- and post-discussion using Krippendorff's alpha in which  $\alpha > 0.800$  is considered acceptable agreement[31]. Higher than acceptable alphas were achieved for both partnership building ( $\alpha=0.860$ ) and supportive talk ( $\alpha=0.886$ ). Following this, the remaining content was independently coded. Descriptive statistics to quantify sociodemographic variables were performed using SPSS (v.23) for Macintosh.

### 3. Results

#### 3.1 Sample Characteristics

Patient-initiated conversations comprised of threads between patients and providers, including doctors, nurses, physician assistants, medical assistants, and other employees. See Table 1 for patient demographic characteristics (n=58) and Table 2 for responding providers' departments (n=51). Four patients were missing complete demographic data and six providers were missing department information.

#### 3.2 Use of Messaging Function

The majority of message threads (60%) consisted of three messages: a patient message, the provider response, followed by another patient message. Typically, the third message in the thread was sent by the patient to thank the provider for their response. Only 14% of exchanges contained just two messages (patient, provider) and these threads ended when the provider wrote that they would call or had already called the patient. Over one-quarter of threads (26%) had four messages or more, but following the initial exchange in most of these cases, patients then responded with additional questions or concerns. The most active thread consisted of eight messages in which the doctor and patient corresponded about blood pressure readings. Physicians were the primary provider responding to messages (53%), followed by nurses (31%). This difference was expected given that secure messages were initially set up to route to individual doctors when the patient portal was implemented in the Health System. A full summary is provided in Table 3.

#### 3.3 Patient Messages

In general, the tone of messages sent by patients was assertive, direct and respectful. The channel allowed patients to be honest and straightforward with their concerns, while also expressing emotions, including statements of worry, gratitude and anxiety. They often referenced their relationship with that particular provider and acknowledged the potential

burden created by portal messaging with statements such as “I am so sorry to trouble you.” One patient never received a response and sent a follow-up message, which began “I’m sorry if I have already sent this.” Patients frequently expressed gratitude when closing their message, writing “thank you” before signing their name, with one patient writing, “Thank you so very much. I will never trouble you ever again. God Bless.”

The content of patient messages had two main purposes: (1) to seek solutions, clarification or next steps, and (2) to make administrative requests. These themes are described in more detail below, and followed by an analysis of providers’ responses. Quotes used in this paper underwent minor editing for clarity only; for example, “there time sensitive” was edited to “they are time sensitive.” However, quotes may still include spelling and grammatical mistakes present in the original source.

**3.3.1 Solution-Seeking**—A common purpose behind patient messages was to seek the next course of action for themselves or others. Patients often made recommendations to providers and appeared to prefer achieving a resolution via messaging. For example, patients recognized that a current medication was not working properly and suggested a different dose or alternative medication. The inclination to avoid clinic visits was common. Patients often used messaging to gauge whether an in-person appointment was necessary, in an attempt to avoid co-pays or wait times.

Patient #9 (67-year old man): Do I have to come on [Date] to see you? I ask because I will not see [Doctor] until [Date] and his board does not meet until a week later. I do not want to spend \$ for a visit if no treatment will be made.

Sometimes patients simply wanted more information, such as clarifying laboratory test results received through the portal. Patients also valued the opinions of their primary care doctors and wrote to confirm directions issued by other specialists. For example, one patient was told by her dermatologist to stop a certain medication, and subsequently sent the following message to her primary care provider:

Patient #22 (75-year old man): Why would [Doctor] want me to stop my thyroid med? I would like to hear back from you before I stop taking this.

**3.3.1.1 Expressions of Concern:** Messages also contained expressions of concern in response to worsening symptoms or pain. For example, one patient described her father’s increasing hip pain following a prior appointment, and inquired whether she should make an appointment. Other patients reported back on their “homework” (such as taking home measurements of blood pressure) in order to elicit next steps from their physicians.

A frequent use of messaging was to communicate with providers about existing prescriptions. Patients were distressed about the high cost, side effects, or ineffectiveness of their prescribed medications. The following patient conveyed anxiety while seeking a solution to problems with his medication:

Patient #34 (68-year old man): I’m having difficulty with erectile dysfunction. I’ve had 2 appointments with a Urologist at the [Hospital]. He has given me one prescription that does not work and another I am ready to try...I discovered on

WebMd that my blood pressure pill Lisinopril had an ED side effect. Also, some blood pressure pills according to what I read actually increase sex performance. Do you prescribe those that increase sex ability by allowing for better blood flow? HELP!

**3.3.2 Administrative Requests**—Portal messaging was frequently used by patients to make requests for non-urgent administrative issues, such as help with paperwork or insurance pre-authorization forms. A patient requested a note to document an injury for work while another needed help activating a prescription savings card. The following patient reviewed her mother's medical record and wanted to ensure that it did not contain errors:

Patient #10 (on behalf of her 86-year old mother): [Doctor], during [Patient's] visit to [Hospital], the staff showed us a list of prescriptions for [Patient]. These did not appear up to date with what she is getting at [Hospital]. Could you please confirm that the MyChart record is up to date and accurate?

Messaging was often used to troubleshoot appointment scheduling problems or receive exceptions to standard scheduling processes. When they were unable to receive timely appointments through a receptionist, some patients knew that a portal message was a direct line to a provider. For instance:

Patient #6 (on behalf of their mother, age unknown): When I called to schedule an appointment, [Employee] told me that the only available appointment was [Date] at 8:00am. Could you possibly help us schedule an earlier in the month appointment and could it possibly be later than 8:00am as mom gets up normally around 10:00am?

### 3.4 Provider Responses

Out of the 58 patient-initiated message threads, almost half (46.6%) contained a patient-centered response from the provider. Partnership building occurred at least once in 36.2% of messages, while supportive talk was present in 22.4% (see Table 4). Only 12.1% of responses contained both types. In general, provider messages were succinct and to-the-point; they did not reciprocate the patients' rapport-building attempts. Providers did not usually reference their relationship or experience with that particular patient, limiting their responses strictly to the information or feedback requested.

Patient-centered responses as measured by supportive talk and partnership building were present in 42.3% of messages sent by Internal Medicine providers, 54.5% of messages sent by Family Medicine providers, and 53.3% of messages sent by providers in other departments. Chi-square tests for independence indicated no significant differences between departments in terms of proportion of messages with patient-centered responses. However, there was a significant difference by provider type: physicians were more likely to use a patient-centered response in a message thread than nurses (58.1% versus 23.5%,  $\chi^2 [1, n=48]=4.0, p=0.046, phi=-.331$ ).

**3.4.1 Partnership Building**—Twenty-one of the 58 message threads (36.2%) contained at least one instance of partnership building. Partnership building occurred a total of 30

times. In all cases, providers who sent partnership building messages were responding to a patient's voiced concern, request, or question. None were initiated by the provider.

**3.4.1.1 Understanding Patient Preferences:** Providers using partnership building responses often took what seemed to be a “customer service-oriented” approach to their patients' requests by responding to their concerns directly and succinctly. In an exchange quoted earlier in this paper, a patient emailed his doctor because he was very concerned about the effects of his blood pressure medication on erectile dysfunction; he included information obtained from the Internet and asked to be switched to another medication. The physician took his concern seriously, asking him “which blood pressure pills were you thinking of?” After an additional exchange, the provider considered the patient's preferences:

Physician #57 (Internal Medicine): It is more likely that the metoprolol is causing the erectile dysfunction... However I have no problem changing from Lisinopril to Losartan/Cozaar if you prefer. This is a good drug.

In another thread, a nurse sought a patient's opinion about a treatment option by asking, “Your HA1C was 9.8 which is high, would you be willing to try insulin?” In return, the patient expressed a preference for managing their diabetes through diet and exercise versus insulin.

**3.4.1.2 Encouragement and Praise:** Some provider messages reinforced positive patient behavior. Patient #15 sent the physician their requested blood-sugar counts and included a message about weight loss. The physician praised the patient by saying, “Congrats on starting an exercise program.”

Conversely, providers often responded in a manner that did little to encourage patients to discuss their opinions, express feelings or ask questions. The following exchange took place in which the patient expressed a need for additional information:

Patient #21 (38-year old man): I have a question about wound abscess/draining culture resulted on [Date] at [Time]...what do these results mean?

MA #4 (department unknown): [Patient], it means that you were being treated for and had staph which he treated you for with the Bactrim.

Although the medical assistant directly answered the patient's question, the response left the patient unsure of what to do next and resulted in a series of follow-up questions.

**3.4.2 Supportive Talk—**Thirteen of the 58 (22.4%) patient-initiated message threads included at least one instance of supportive talk. Supportive talk occurred a total of 16 times. These messages seemed intended to connect with the patient or ease concerns about test results. For example, the provider below attempted to relieve a caregiver's concerns by first stating that they should not be alarmed, followed by listing symptoms to observe:

Patient #1 (on behalf of their 79-year old father): I had a note from the Home Health Care nurse that my Dad should let the nurse know if his glucose level goes below 70. Yesterday it was 68...I would like to know what [Doctor's] instructions should be if his glucose level goes below 70. Thank you.

Physician #10 (Family Medicine): I am not worried about a glucose less than 70 if he is feeling fine. If he is having symptoms of hypoglycemia (cold sweats, confusion, extreme hunger, weakness) then you would need to give him sugar (orange juice, hard candy even regular pop) to get the sugar back up. If this is occurring frequently (more than 2 times per week) then let me know and maybe we would need to adjust his insulin dose.

However, the majority of provider responses lacked expressions of empathy or sensitivity. For instance, in the following thread, the provider did not acknowledge the patient's anxiety:

Patient #26 (age/sex unknown): I'm very concerned over the oxygen test I had last week... I'm still having difficulty doing most everyday things. I was just concerned that we didn't get a true test result.

Physician #77 (Pulmonary Medicine): I don't feel that there will be need to repeat this testing now but more importantly to redo it in the future.

Other providers overlooked patient cues of distress, such as the following exchange in which the daughter of a cancer patient described her mother's pain:

Patient #25 (on behalf of her mother, age unknown): My mom is doing pretty poorly...She has two questions for you. One: should she be taking a prescription potassium supplement? and Two: Now that she has lost 70 lbs and is on chemo her blood pressure is always pretty low...The new chemo meds are really making her sick and she is getting double chemo meds every week for 5 weeks and I hope she can get through these treatments without getting even weaker. Thanks again for your help.

PA #3 (Internal Medicine): Hi [Name], glad your mom is doing well; she's pretty strong really. Have her stop the amlodipine for blood pressure... You may want to ask the Oncologist about the potassium. Take care.

Frequently, providers did not acknowledge questions or concerns and instead recommended scheduling an appointment:

Patient #38 (57-year old woman): I have been diagnosed with tendinopathy in both shoulders. I now have swelling in my elbows. I fell twice last month, and I have begun to have extreme pain in my hips and legs when I try to walk. I literally cannot move or support my weight...

Nurse #17 (After Hours Nurse): Please schedule an appointment for evaluation.

## 4. Discussion and conclusion

### 4.1 Discussion

Secure messaging via patient portals enables a direct line of communication between patients and their providers through which patients can ask questions and express concerns without the need for a face-to-face office visit. Previous studies have shown that portals are a preferred method for contacting a physician[13], and due to the increased access and general anonymity that online communication affords, patients are more likely to clearly express



their thoughts[35] and to disclose potentially embarrassing issues[36]. Our findings indicate that both patients and providers are engaging in patterns of communication via online messaging that may differ from what has traditionally occurred in face-to-face encounters.

In face-to-face interactions, researchers have highlighted communication challenges [37, 38], but have also found that providers are largely responsive to patient needs[9] and encourage questions[39]. However, over half of provider responses in this study did not reciprocate patient messages with a patient-centered response. This is less than what has been found using the same coding system for in-person office visits: in one recent study, 93% of office visits included at least one instance of a provider patient-centered communication behavior that was unprompted, with an average frequency of 2.6 instances (SD=1.8) per visit[40]. Another study indicated an average frequency of 5.22 instances (SD=3.08) per face-to-face consultation[7].

While it is unclear if patients ultimately desire and benefit from patient-centered communication in the electronic context, as the use of secure messaging grows, it may be necessary for providers to devote as much consideration to its incorporation as they now do for face-to-face interactions. This prospect poses significant challenges, as computer-mediated communication is a “lean” media that lacks social cues and can be impersonal, especially compared to a “rich” media like face-to-face communication[41]. Indeed, one potential explanation for the lower rates of patient-centered responses found in our study versus face-to-face studies is that it may reflect clinicians’ resistance to portal messaging. Haun and colleagues[20] found that clinicians’ reluctance to use portal messaging served as a barrier to patient use, and that staff frequently called patients instead of replying electronically. Research has shown that providers have concerns communicating via portals[42], which was reflected in the current study when several message threads ended because the provider indicated that they would contact the patient by phone. Given that patient participation in medical encounters is associated with multiple benefits and that messaging may serve to enhance certain forms of participation, overcoming clinician resistance to digital communication would seem an important goal, but perhaps one that needs to be accompanied by a similar goal focused on the patient-centeredness of providers’ responses within this communication channel. Without the latter, providers may be missing opportunities to build partnerships with their patients and may risk decreasing the level of trust within the overall relationship.

Findings from this study should be interpreted with its limitations in mind. First, Street and Millay’s[7] categories of provider patient-centeredness were developed using in-person clinical consultations. There are limitations when applying these codes to written text instead, and some characteristics of participation unique to the electronic context may be overlooked; however, our use of inductive coding sought to mitigate this risk. To the extent of our knowledge, this is the first attempt to apply these widely-used categories of patient-centered communication to the electronic messaging context; thus, these findings can provide a baseline of knowledge from which to undertake and guide more targeted research. Second, as noted above, patients’ communication style preferences and the perceived benefits of patient-centered communication for secure messaging are largely unknown. For example, it may be that patients prefer an expeditious, but potentially brief, response in favor

of messages containing supportive talk or partnership building language. In general, online communication, such as social media, can alter communicative practices and patterns of social relations[43]. In the medical context, social science research exploring online behavior using web-based interventions found significant positive effects on empowerment compared with face-to-face interventions[44]. Future research should examine patient preferences for digital communication and, more broadly, whether patient-centered communication ultimately impacts interactions and outcomes. Third, the limited size of the sample and short timeframe of data collection limits generalizability to other clinicians, settings or even time periods. Lastly, the messages used here were retrieved from a one-week period only; therefore, responses sent after this period were not included in this analysis. A related drawback of studying electronic messages is that we were unable to ascertain if a response was given over the phone or during a subsequent appointment, or the characteristics of that response. Because we had neither the data nor the funding to analyze the final resolution to many of the issues raised in these exchanges, some of the provider patient-centered response codes may be underestimated. This point also applies to messages that were initially excluded from this study because they did not receive a provider response. Accordingly, future research should examine “message closure” as an outcome, which could be partially assessed by eliciting patient perspectives on the context of the message and satisfaction with its resolution.

## 4.2 Conclusion

The use of patient-centered communication techniques varied across health care providers’ written responses to patient-initiated, secure messaging. Future research should measure the effect of such alternate patient-provider communication channels on patient-provider relationships as well as the impact of using patient-centered communication techniques within these channels.

## 4.3 Practice implications

As secure messaging becomes widespread in healthcare, it is necessary to understand both how it is used by patients and providers as well as how aspects of this communication channel, including the patient-centeredness of the language used by providers, impact patient-provider relationships and patient outcomes. Our study found promising signs that messaging may provide an ideal context for patient-driven communication, and may present opportunities for providers to build rapport with their patients. Therefore, as communication via patient portals becomes standard, it is imperative to determine whether this channel is appropriate, practical and advantageous for the inclusion of patient-centered techniques.

The authors confirm that all patient/personal identifiers have been removed or disguised so the patient/person(s) described are not identifiable and cannot be identified through the details of the story.

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### Highlights

- Patients use secure messaging available within portals to communicate with physicians
- Patient messages expressed concern, sought solutions and requested assistance
- The patient-centeredness of the content of provider responses differs
- Understanding the impact of patient-centered provider e-responses is important

**Table 1**

Sociodemographic Characteristics of Patients Initiating Messaging (n=58)

Variable	Frequency	Percentage
<b>Age in Years</b> (Mean, SD)	62.7 (16.3), range = 21–90	
Missing	11	20.0%
<b>Gender</b>		
Female	25	43.1%
Male	22	37.9%
Missing	11	19.0%
<b>Race</b>		
White	30	51.7%
Black	9	15.5%
Asian	2	3.4%
Missing	17	29.3%
<b>Ethnicity</b>		
Hispanic	0	0.0%
Non-Hispanic	40	69.0%
Missing	18	31.0%
<b>Marital Status</b>		
Unmarried/Single	25	43.1%
Married/Partnered	22	37.9%
Missing	11	19.0%
<b>Language</b>		
English	43	74.1%
Other	1	1.7%
Missing	14	24.1%

**Table 2**

Departments of Responding Providers (n=51)

<b>Provider/Department</b>	<b>Frequency</b>	<b>Percentage of all providers and within provider category</b>
<b>Physician</b>	<b>28</b>	<b>54.9% of all providers</b>
Internal Medicine	13	46.4%
Family Medicine	8	28.6%
Other	7	25.0%
<b>Nurse</b>	<b>13</b>	<b>25.5% of all providers</b>
Internal Medicine	4	30.8%
Family Medicine	2	15.4%
Other	5	38.5%
Missing	2	15.4%
<b>Medical Assistant</b>	<b>5</b>	<b>9.8% of all providers</b>
Internal Medicine	2	40.0%
Other	2	40.0%
Missing	1	20.0%
<b>Physician Assistant</b>	<b>3</b>	<b>5.9% of all providers</b>
Internal Medicine	1	33.3%
Other	1	33.3%
Missing	1	33.3%
<b>Other Employees</b>	<b>2</b>	<b>3.9% of all providers</b>
Missing	2	100%

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**Table 3**

Individual Messages Sent (n=193) and Word Counts

Message sender	Frequency (%)	Mean (SD) word count per message	Min/max word count per message
Patient	125 (65%)	84.7 (284.4)	2 – 3,180
Provider	68 (35%)	39.7 (30.0)	2 – 122
Physician	36 (53%)	44.4 (31.2)	7 – 122
Nurse	21 (31%)	28.0 (22.5)	2 – 86
Medical Assistant	6 (9%)	29.8 (16.2)	15 – 53
Physician Assistant	3 (4%)	64.0 (42.3)	17 – 99
Other Employee	2 (3%)	73.0 (55.2)	34 – 112

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**Table 4**

Provider Patient-Centered Responses

Behavior	Frequency/percentage of threads with behavior present (n=58)	Min/max frequency per thread (n=58)	Frequency/percentage of either ST present PB or (n=58) per thread	Frequency/percentage of both ST present PB and (n=58) per thread	Frequency/percentage of total occurrences (n=46)
Partnership Building (PB)	21/36.2%	0 – 3	27/46.6%	7/12.1%	30/65.2%
Supportive Talk (ST)	13/22.4%	0 – 3			16/34.8%