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Training Housestaff To Begin Interviews With Patient-Centered Strategies: Housestaff Evaluation And Effects On Patient Experience

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Training Housestaff to Begin Interviews with Patient-Centered Strategies: Housestaff Evaluation and Effects on Patient Experience

By

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ABSTRACT

Background: Physician communication skills during a medical visit may be a central factor in achieving optimal patient experience because it improves the exchange of important clinical and psychosocial information. While many medical schools emphasize communication skills training for students, formal training in patient-centered communication for housestaff has received less attention. Few studies have examined communication skills training for housestaff with regards to its impact on actual patient experience survey results.

Aim: To assess whether an education initiative that teaches patient-centered strategies for starting medical interview improves housestaff perception and patient experiences in the resident clinics and inpatient wards.

Method: We conducted a prospective pre-post intervention study in the Departments of Neurology, Neurosurgery, and Urology. Between February and April 2014, housestaff participated in two-hour educational session about the five strategic steps to open a medical interview that combined didactic and skills practicing including lectures and role-play simulation. Outcome measures were questionnaire administered to the house-staff of their evaluations of the communication skills training program and pre- (January-February 2014) and post- (June-July 2014) patient-reported surveys (CG-CAHPS and HCAHPS) of related patient-doctor communication questions. Chi-square test was used to compare dichotomized responses (top-box items) and examine differences between pre- and post- test scores.

Results: Forty-four of a possible 45 residents (97.8%) at Yale School of Medicine participated. After the intervention, 70.5% of resident's perception of the value of the 5-step patient-centered interview increased. The response rates to the outpatient surveys were similar during the pre- (63/122, 52%) and post-intervention (77/157, 49%) periods (p = 0.67). No statistically significant difference in patient responses on outpatient survey items was seen between the pre- and post-intervention period, including items regarding whether the resident listened carefully (pre-intervention "Yes" responses = 93.7%, 50th national percentile; post = 90.9%, 25th percentile; p = 0.15) and whether the resident showed respect (pre = 92.1%, < 25% percentile; post = 96.0%, 60th percentile; p = 0.74). Similarly, mean score of doctor's communication with patients on inpatient surveys were greater than 71.0% and we found no statistically significant difference between pre- and post- tests (p-value > 0.05). Subgroup analyses comparing pre- and post- within each department and demographic factors were performed and results showed no statistically significant difference (p-value > 0.05). When mean scores were compared to the national percentile data, more than half of the clinics in the nation have higher scores than our institution.

Conclusions: While an interdepartmental educational program was both feasible and well received, demonstrating an improvement in patient experience surveys in response to such a program remains challenging. We recommend that academic medical centers develop a holistic strategy for teaching communication skills over a sufficient duration that integrates several evidence based techniques. Academic medical centers should actively incorporate communication skills training in their curricula and aggressively train all doctors and nurses.

Keywords: residency education, communication skills, teaching, intervention, interviewing, physician-patient relations, medical interviews, patient-reported outcome, patient satisfaction, patient-centered care, continuing medical education, feedback

TABLE OF CONTENTS

LIST OF TABLES

Chapter I: Introduction

Statement of the Problem

Patient-centered care is a key component of health care quality in the United States. For example, high quality medical care depends on effective communication between patients and providers (Olson et al., 2010 and hhs.gov, 2014). There are many recognized barriers to patient-centered care, including: 1) increased time required for paperwork (2) high patient volume (3) rapid patient turnover, and (4) less time to spend with patients (Ratanawongsa et al., 2012 and Bennick, 2014). These problems have potentially limited the ability of physicians to learn and deliver patient-centered care. Ineffective communication can lead to improper diagnosis, and delayed or improper medical treatment. In a cross-sectional sample of hospitalized patients and their physicians, 38% of the time, there were no agreement between patients and physicians about planned tests or procedures (O'Leary et al., 2010).

Communication skills are recognized as core components of physicians' clinical skills. Studies have shown that communication skills may be learned and transferred to a physician's clinical practice after completion of a communication skills training program (Lienard et al., 2010). However, few studies have looked at the influence of these communication skills on the patient experience, either in inpatient and outpatient settings. Ideally, physicians should start learning communication skills as part of their medical school education. Many studies have shown that medical students benefit from these communication skills, but there has been few studies on continuing medical education in residents.

With the exception of primary care training programs, most traditional post-graduate medical training programs do not include communication skills training in their residency

curriculum (Levinson et al., 2010). Since 2002, the Accreditation Council for Graduate Medical Educating has required the teaching of interpersonal and communication skills (ICS) as a core competency. Hitherto, the number of residency programs fulfilling this requirement has been low (Levinson et al., 2010). Over the past decade, communication training interest groups including American Academy on Communication in Healthcare and large medical groups have designed and implemented communication skills program for practicing physicians (Levinson et al., 2010).

Additionally, many hospitals in the United States are actively taking steps to address ineffective communication. In 2007, the Consumer Assessment of Healthcare Providers and Systems (CAHPS) consortium developed the Hospital Consumer Assessment of Healthcare Providers and Systems (HCAHPS) survey with support from the Centers for Medicare & Medicaid Services (CMS) and the Agency for Healthcare Research and Quality (AHRQ), to measure patient experiences with hospital care (HCAHPS Fact Sheet, 2012). The incentive for hospitals to improve patient experience was strengthen by the 2010 Affordable Care Act, which specifically included HCAHPS performance in the calculation of the value-based incentive payment for hospitals (HCAHPS Fact Sheet, 2012). Hospitals are rewarded based on how closely they follow best clinical practices and how well they enhance patients' experiences of care. HCAHPS performance accounts for 30% of the calculation affecting hospital's Medicare payment while the remaining 70% is based on clinical core measures. As a result, hospitals are focusing more on improving patient experiences (Ratanawongsa et al., 2012).

This project is significant to the field of hospital administration due to hospitals' efforts to improve patient experience and safety and strengthen physician-patient communication skills.

Literature Review

Physician communication skills during a medical visit may be a central factor in achieving optimal patient experience because it improves the transmission and retrieval of important clinical and psychosocial information. There is lack of evidence for teaching communication skills using lectures (oral / didactic) presentation alone, skills modeling alone or written information (Kurtz, 2005 and Smith, 1999). Smith argues that communication skills training should teach residents to recognize previously unrecognized attitudes and reactions to patient that affect learning and practicing communications skills. Teaching self-reflection is an integral part of communication skills as well, which requires focus and positive attitude to improve communication skills and research supports the adoption and development of increasing resident reflection skills (Smith, 1999). Additionally, there is evidence to support combined didactic and skills practice including role-play, simulation-based, small group discussion and structured and direct feedback (Kurtz, 2005, Perron et al., 2014, and Smith, 1999).

Many researchers have studied different methods (observation followed by feedback, simulation-based training program, lectures and role play) for opening medical interview and their relative accuracy is well documented. These methods all address the same core components: active listening, asking open and closed ended questions, and chief complaints. However, there is no evidence of the best training program; the literature suggests that to be effective, communication programs must teach skills and provide a platform for feedback. For this project, we used an integrated approach that focused on the learning and application of a "five-step" method for opening patient-centered medical interviews using instructional videos, small group, role-play and multidisciplinary feedback (Fortin, 2002).

The five patient-centered steps for opening medical interview establishes the clinician-

patient relationship and encourage the patient to express what is most important to him or her. There are two preparatory steps during which the doctor sets the stage (Step 1) and agenda by eliciting chief concern (Step 2). These steps are followed by beginning the interview with non-focused skills which allows the patient to explain the history of their present illness (HPI) (Step 3). The HPI is continued using focusing skills to learn more about symptoms and the impact on the patient's personal experiences and emotions (Step 4), and then transitioned to the second phase (doctor-centered) phase of the interview (Step 5). Smith argues that patient-centered interviewing puts providers in a receptive listening mode for the first three to five minutes instructing them to use verbal and nonverbal behaviors similar to skills in supportive psychotherapy.

There is limited research on the effectiveness of communication skills interventions on patient-reported experiences or outcomes. Only two studies have found positive effects on patient satisfaction. In a study focused on training housestaff at John Hopkins, researchers used the Aliki Initiative to teach housestaff to know every patient and apply this knowledge to improve care. Results showed that a patient-centered curriculum was associated with higher satisfaction ratings by patients and physicians' improved skills in patient-centered tasks (Ratanawongsa et al., 2012). Additionally, many communication skills curriculums have focused less on the hours residents spend at work but instead on what residents were doing. An observational study found that increased patient workload was associated with less likelihood that residents participate in educational activities (Arora et al., 2008). Similarly, Lienard et al. conducted a randomized controlled trial investigating a 40-hour role-play and feedback communication skills training program over eight months for residents resulting in significantly higher patient satisfaction scores and transfer of residents' learned skills to daily clinical practice. On the other hand, only one randomized study reported no association with

significant changes in quality of communication about end of life care following an 8-session simulation-based communication skills intervention (Curtis et al., 2013). This study is unique because we are not only investigating residents' perception of the communication skills training program but also its effect on patient-reported outcomes (HCAHPS scores) as part of the metrics for evaluation.

Specific Aims

Primary Aim: To determine whether an educational initiative for housestaff that teaches patient-centered strategies for starting medical interviews results in better patient experiences in resident clinics.

Secondary Aims:

1. To determine whether the educational initiative resulted in improved patient experience in the inpatient wards.

2. To elicit housestaff assessment of the educational initiative.

Hypotheses

1. Our hypothesis was that scores on selected CG-CAHPS questions asked of patients in resident clinics would significantly increase from a 1-month period prior to the training period (pre-intervention) to a 1-month period following the training period (post-intervention).

2. Our hypothesis was that scores on selected inpatient HCHAPS questions from the inpatient services run by residents undergoing the educational initiative would increase when comparing similar time periods used to assess our primary aim.

3. Our hypothesis was that participating housestaff would say that the training program was valuable.

Chapter II: Methodology

Overview

This project used a prospective pre- and post-intervention study design. A standardized patient satisfaction survey, adapted from the CG-CAHPS Visit Survey 2.0, was administered to patients immediately after being seen in the afternoon resident clinics at Yale New-Haven Hospital (YNHH) for four weeks (January 27, 2014 – February 17, 2014) and after being seen in resident clinic for four weeks (May 26, 2014 – June 16, 2014). In addition, residents attended a two-hour training session with the study primary investigators about the five strategic steps to open a medical interview that combined didactic and skills practicing including lectures and role-play simulation. We collected questionnaires assessing housestaff evaluation of the innovative patient-centered communication curriculum. This study was granted a formal exemption from the Yale Human Research Protection Program. Residents and patients did not have to give written informed consent.

Patients Recruited

During the pre- and post-intervention data collection periods, two study investigators recruited subjects' in-person in the resident clinics by approaching patients as they were checking out at the front desk following appointments. The investigators explained the purpose of the survey to the potential subject, including the elements of informed consent. The survey also included the important elements of informed consent and was written at an elementary school reading level. No subjects were excluded from the study; patients were included in the study if they agreed to participate and returned a complete to the research coordinator. No data was recorded with patient identifiers.

Residents Recruited

Faculty preceptors interested in communication skills training from the Departments

of Neurology, Neurosurgery and Urology attended a two-hour training session with the study primary investigators. All housestaff in the same three departments then participated in the intervention and were divided into groups of three and assigned to a faculty preceptor.

Intervention

The educational intervention period for all residents in the Neurology, Urology and Neurosurgery Departments at Yale School of Medicine took place from February 1st through the end of April 2014. One week before each group of residents met, they were emailed a link to a training video in which Dr. Fortin explained the five strategic steps to open a medical interview from a patient-centered perspective. The two-hour educational session consisted of (1) a standardized interactive lecture for 30 minutes on effective strategies of communication and a vvideo of the five-step process for opening medical interviews; (2) 90 minutes role-play simulation session, with the group given a common, department-specific clinical scenario and each of the three residents in the group rotation roles (e.g., patient, doctor, evaluator). The 'doctor' in each group interviewed the 'patent', and the 'evaluator' gave feedback to the 'doctor' on how well he/she employed patient-centered interviewing techniques. Each group had three separate cases so that each resident assumes all three roles. Residents were given laminated cards that summarized the five-step process for opening patient-centered medical interviews.

Outpatient CG-CAHPS Data Collected from Patients

We adapted a standardized patient satisfaction survey from the CG-CAHPS Visit Survey 2.0 by selecting the relevant patient-doctor communication questions. In addition, we collected patient demographics information including: age, sex, education, gender, and race. The surveys were administered to patients immediately after being seen in the afternoon resident clinics at Yale New-Haven Hospital (YNHH) for four weeks (January 27, 2014 –

February 17, 2014). The same standardized patient satisfaction survey was administered again to patients immediately after being seen in resident clinic for four weeks (May 26, 2014 – June 16, 2014. The CG-CAHPS questions are on Likert scale (Never, Sometimes, Usually and Always).

Inpatient HCAHPS Data Collected

We collected inpatient HCAHPS and Press Ganey survey data from patients admitted to the Neuroscience (Neurology and Neurosurgery) and Urology services during January & February 2014 and June & July 2014. We obtained HCAHPS and Press Ganey patient satisfaction data from the YNHH patient experience office. The HCAHPS questions are on Likert scale (Never, Sometimes, Usually and Always). Press Ganey surveys were administered to YNHH patients after 72 hours of discharge following inpatient hospitalization. In order to get urology data, we used a short list of the 5-10 most common EPIC Diagnostic Related Groups (DRGs) for inpatients admitted to the urology service. We focused on the Press Ganey Survey questions under 'physician', 'personal issue,' and 'overall assessment', which are also on a 5-point Likert scale (1=very poor, 2=poor, 3=fair, 4=good, and 5=very good). While the HCAHPS survey measures patient experience in terms of how often a service was provided, the Press Ganey integrated survey reveals more important qualitative details regarding how well a service was provided.

Data collected from Residents

We collected questionnaires that asked housestaff for their evaluations of the innovative patient-centered communication curriculum using 5-item with different response scale and 2 open-ended items. At the beginning of the training, residents completed a pre-training questionnaire. Post-training evaluation forms were collected at the end of the session. Additionally, each session ended with each resident completing a 'commitment to

change' form using a 5-point scale, they ranked their level of motivation to make this change (1 – not at all motivated, 5 – highly motivated) and anticipated difficulty in making this change (1 – not at all difficult, 5 – extremely difficult).

Analyses

Our primary analyses used dichotomized patient responses as the dependent variables. For comparability to nationally reported results, we analyzed the data by dichotomizing responses focusing on the 'top-box', which is the most positive response to survey questions. We distinguish the responses in the most positive category (top box) from all other responses. We defined the top box for the 0-10 overall rating item to include responses of '9 or 10', HCAHPS Likert scale of Never, Sometimes, Usually and Always to include 'Always' and lastly, CG CAHPS scale of yes and no to include 'yes'. We estimated that approximately 80 patients pre-test and 80 patients post-test would fill out the surveys, which would give the study 80% power to detect a 20% rise in post-intervention satisfaction with 95% certainty. The pre- and post- intervention survey data from patients were compared between groups to assess the impact of the resident curriculum on patient experience in the clinics. We converted the raw numbers to frequency table with percentages for each survey question. We used Chi-square test to compare dichotomized answers to pre- and post- CG CAHPS, HCAHPS and Press Ganey Visit surveys and within subgroup analyses. We used Wilcoxon rank sum test for full response scale, which assumes the difference is ordinal and not normally distributed. For the open-ended question, we developed a coding tree and for the sake of research integrity, two people separately coded and then selectively combined representative responses. We used logistics regression to compare non-dichotomized responses. We adjusted for patient characteristics using regression models. Lastly, Press Ganey data was calculated per hospital protocol – two-

proportion sample test.

Chapter III: Results

Curriculum Evaluation

Eligible residents were those who completed the intervention during that year (24 Neurologists, 12 Neurosurgeons and 8 Urologists). Among the 44 participants (98% participation rate), 68% were men. We had 7 out of 8 responses from Urology department because one of the residents' questionnaires was not returned.

Pre and post intervention questionnaire: Sixty-eight percent of residents said they had been taught a specific technique for interviewing during prior training (see Table 1), including: motivational interviewing, creative listening, appropriate tailored interviewing for patients with neurologic conditions, use of open-ended questions and allow uninterruption. Of the 44% of residents who had been introduced to the 5-step approach, majority identified step 3 and 4 as the most challenging (see Table 1). The literature suggests that step 3 and 4 are the most difficult steps in the five steps for opening medical interviews because it requires using multiple tools including: nonfocusing and focusing open-ended inquiry, occasionally closed-ended questions, hypothesis testing and emotion-handling skills (Smith 2002). Likewise, as a result of participating in this workshop, residents reported feeling more comfortable with Step 2 and 4 (see Table 2). After participating in the workshop, 70.5% of resident's perception of the value of the 5-step patient-centered interview increased (see Table 2).

Commitment to change form: Residents were asked to complete a commitment to change form. Some popular changes listed were: listen carefully to patient, introduce myself and indicate role in team, make time for open-ended questions, talk slowly, elicit chief concern, concentrate on patient's feeling, explore patient's psychosocial situation, and use

more 'we' and less 'I'. The mean score for the anticipated difficulty in making this change for the 44 housestaff was 2.03 (on a five-point scale) and mean score for the level of motivation to make this change was 3.95 (on a five-point scale).

Outpatient Data

We received 63 pre-intervention outpatient surveys (63/122 = 52% response rate) from January to February 2014 and 77 post-intervention outpatient surveys (77/157 = 49% response rate) from June to July 2014. There were no significant difference between pre- and post- respondents' demographics (p > 0.05) (See Table 3). To analyze the 7-item with 3-point response scale skewed data, we dichotomized by calculating the proportion who selected yes. All the pre-test items had positive mean score > 90% and post-test items had a mean score > 85%. When scores were compared to the national percentile data, more than half of the clinics in the nation have higher scores than us (see Table 4), which suggest there is room for improvement. We examined differences between pre- and post- test scores using Chi-square test for mean difference and found no statistically significant difference (See Table 4). In addition, there was a trend of decrease in the post-test score regarding the provider's ability to provide easy to understand information about health questions or concerns (see Table 4). Subgroup analyses were performed for the three resident clinics and results also showed no statistically significant difference (p > 0.05). We analyzed the 1-item with 11-point full response scale (0=worst provider possible, 10=best provider possible) using the Wilcoxon signed rank sum test and results suggested no statistically significant difference for patient rating of provider between the pre- and post- test (p > 0.05). We developed a coding tree for the open-ended question for patients to share their thoughts on their experience in resident clinic (1=positive experience, 2=negative experience). Of the 33 people who shared their thoughts in the pre-test, 79% had a positive experience. Of the 51

people who shared their thoughts in the post-test, 76% had a positive experience. When we adjusted for patient characteristics using regression models, none of the characteristics (gender, education level, race, and age) predicted CG-CAHPS scores. One of the core components of the communication skills training program was asking open-ended questions and using emotion-handling skills to respond to patient's concerns. One could make the argument that CG-CAHPS scores may not directly measure patient experience with residents since CG-CAHPS scores are influenced by multiple interactions with several healthcare workforce (i.e., receptionist, nurses, PAs, and doctors) and are unlikely to show change unless there is a substantial number that can be linked to specific survey respondents.

Inpatient Data

HCAHPS Survey: Press Ganey administers HCAHPS survey questions to patients. Press Ganey reports that for inpatient surveys, 70% are returned within two weeks of receipt and 83% within 3 weeks. YNHH does not calculate response rates by units but we were able to obtain aggregate quarterly response rate for inpatient HCAHPS/PG surveys. YNHH reported a flat and consistent response rate of about 20%. There was no significant difference between pre- and post- respondents' demographics (p > 0.05) (See Table 5). We specifically focused on HCAHPS questions regarding a patient's care from doctors (similar to the outpatient CG-CAHPS), which addressed courtesy and respect, listening carefully and explaining things. We examined the differences between pre- and post- test scores using Chi-square Test and found no statistically significant difference (See Table 6). It is important to highlight the concept behind composite score as any individual question alone may not capture the quality of communication so adding and averaging the score provide a more realiable measure and less measurement error. Results were between 80.4% and 93.1%. When we conducted subgroup analyses for Neuroscience and Urology services, there were

no statistically significant difference (p > 0.05). Overall, patients reported that doctors communicated well with them during their stay, they explained things clearly, listened carefully to the patient and treated the patient with courtesy and respect (see Table 6 and 7). However, when scores were compared to the national percentile data, more than half of the clinics in the nation have higher scores than us (see Table 6 and 7), which suggest there is room for improvement.

Press Ganey Survey: Press Ganey Survey scores are scaled to 100 with higher scores indicating greater satisfaction ranging from 82.2 to 98.1 (see appendix 1 and 2). The Press Ganey survey has a specific question about courtesy and professionalism of interns and residents and both pre- and post-group had a mean of 90.8 and above (See appendix 1 and 2). Data showed that YNHH collected 107 inpatient surveys from the Neuroscience service (neurology and urology services) from January to February 2014 and 87 inpatient surveys from the urology service.

Chapter IV: Findings and Discussion

Summary of Findings

This pilot study established the feasibility of a brief intervention to teach residents communication skills. We found that the intervention was well received by residents and they were motivated to lead these discussions. The communication skills training program improved residents' comfort level with these discussions. However, the intervention did not lead to a significant improvement in outpatient and inpatient satisfaction at a major teaching hospital between the pre and post periods. Hence, residency programs should actively develop curriculum for residents in training to reemphasze communication skills – value, listen, care and treat patients as an individual.

Study Limitations

A limitation of this study was an apparent ceiling effect. The raw scores suggest that residents are doing well in regards to communication with patients. Since the scores were high, it may have been harder to detect a difference between groups. However, when our CG-CAHPS and HCAHPS scores were compared against national percentile, it was clear that our institution has room for improvement. The second limitation of the study was due to difficulty to detect a difference between groups within our sample size as a result of the high raw scores. Any difference in the top box survey question ratings between groups would have to be small by default, smaller than the 20% difference between groups we used in the hypothesized power calculation.

Another limitation was the lack of control group of residents who did not attend the training sessions. Nevertheless, we used commitment to change scores to assess variations in changes in the CG-CAHPS scores for different residents. Lastly, other potential limitations include response bias, recall bias and bias related to types of people likely to respond to a survey.

Chapter V: Conclusions

Our pilot study demonstrates the feasibility and potential value of an educational intervention that emphasizes role-playing and experiential learning to teach residents about opening medical interviews with patients. However, our findings demonstrate the difficulty of designing an intervention to improve patient experiences that are already very positive. A systematic review of communication skills interventions revealed that these interventions were effective but no studies have shown an effect on patient-reported outcomes (Curtis et

al., 2013). These findings raise questions about communication skills training program with regards to improving actual patient-centered care, including the adequacy of a one-time intervention. It is possible that patient contact with multiple providers diluted the effect of a trained resident in their responses, particularly with regards to inpatient experience scores. Patients and family members may require prompting to provide direct and accurate assessment of residents' skills. Our findings does not negate the value of using role-playing and experiential learning for communication skills training but suggests that we may need to identify up front which residents may need remediation and focus on them instead of in-serving all residents all the time.

Chapter VI: Recommendation for Future Research

One reason this intervention was not successful in improving patient experience is because residents tend to experience a steady increase in self-reflection and awareness of behaviors over time. Therefore, a one-time intervention just targeting residents is likely to be ineffective. We recommend that academic medical centers develop a holistic strategy for teaching communication skills over a sufficient duration that integrates several evidence based techniques: skills practice, combined didactic and skill practice, role play, lectures, small group discussion, one-on-one coaches, and simulated patient encounters. Effective multidisciplinary feedback is guaranteed to produce an observed improvement in patient experience over a long period of time. Teaching patient-centered care requires a multifaceted approach. Another core approach is the use of standardized patients in scenarios and direct patient-doctor observers who can provide credible feedback during the training. Residents should undergo many more hours of training than what was done in this study. Individualized feedback is another approach and a powerful tool which would allow

residents to track their communication skills progress.

Academic medical centers should actively incorporate communication skills training in their curricula and aggressively train all doctors and nurses. While communication skills training programs are increasingly being taught in medical school, residency remains an appropriate period not only for learning these skills but also opportunity for applicability as residents' daily practice becomes more varied and challenging (Levinson et al., 2010). Patient-centered hospitals could experience reduced lengths of stay, adverse events, and may simultaneously reduce health care costs and retention rates (Ratanawongsa t al., 2012). Further research should emphasize residents' commitment to change, self-reflection, and goal setting and provide regular feedback identifying areas for improvement. Patient-centered care is important, should be evidence based and teach-able in order to observe an improvement in patient experience over time.

Table 1. Pre-training Questionnaire for Residents (n=43)*

Introduced to the 5-step patient-centered interview (n=43)	
Yes	44.2%
Of those who were introduced to the 5-step patient-centered interview (n=19)	
Introduced to the 5-step at which point of medical education	
Medical School	31.6%
PGY1	52.6%
Other	15.8%
Value to the patient-centered interview approach	
Some value	55.2%
Great value	28.9%
Unsure	10.5%
No value	5.3%
Most challenge step	
Step 1	15.8%
Step 3	16.0%
Step 4	36.8%
N/R	31.4%
Taught a unique technique for interviewing a patient (n=22)	
Yes	68.2%

* n = 43, one pre-questionnaire was not returned

Table 2. Post-training Questionnaire for Residents (n=44)

Roles played during the workshop	
Patient	93.2%
Physician	97.7%
Observer	86.4%
All three roles	84.1%
Most valuable role as a learning experience	
Patient	31.8%
Physician	38.6%
Observer/Evaluator	29.6%
Most comfortable step	
Step 1	15.9%
Step 2	27.2%
Step 3	13.6%
Step 4	20.5%
NA	6.8%
Perception of the 5-step patient-centered interview	
Increased	70.5%
Decreased	6.8%
Remained unchanged	22.7%

Table 3. Characteristics of Outpatient Survey Respondents (Neurology, Neurosurgery and Urology

	Pre-Intervention n = 63	Post-Intervention n = 77	P-value*
Gender			
Male	26 (41.3%)	25 (32.5%)	0.17
Female	31 (49.2%)	49 (63.6%)	
No Response	6 (9.5%)	3 (3.9%)	
Age			
18-24	4 (6.3%)	6 (7.8%)	
25-34	7 (11.1%)	9 (11.7%)	
35-44	14 (22.2%)	17 (22.1%)	0.99
45-64	24 (38.2%)	33 (42.9%)	
65+	8 (12.7%)	9 (11.7%)	
No Response	6 (9.5%)	3 (3.8%)	
Education			
Less than HS graduate	8 (12.7%)	12 (15.5%)	
HS Graduate	17 (27.0%)	17 (22.1%)	
Some College	24 (38.1%)	27 (35.1%)	0.49
College Graduate	2 (3.2%)	8 (10.4%)	
More than college graduate	6 (9.5%)	10 (13.0%)	
No Response	6 (9.5%)	3 (3.9%)	
Race			
White	32 (50.8%)	40 (51.9%)	
Black or African American	17 (27.0%)	11 (14.3%)	
Asian	1 (1.6%)	5 (6.5%)	0.13
Native Hawaiian or Other Pacific Islander	-	2 (2.6%)	
Other	5 (7.9%)	10 (13.0%)	
No Response	8 (12.7%)	9 (11.7%)	

* Based on Chi-square test of responses

Table 4. Outpatient CAHPS Item Results and National Percentile Data, Top-Box Scoring

Survey Item (Outcome Top Category Response) Doctor's Communication	Pre-test n =63	2013 CAHPS National Percentile n=428,154*	Post-test n = 77	2013 CAHPS National Percentile n=428,154*	P-value
Provider explained things in a way that was easy to understand (Yes)	93.7%	60	92.1%	50	0.15
Provider listened carefully (Yes)	93.7%	50	90.9%	25	0.34
Spoke to provider about health questions or concerns (Yes)	90.5%	25	92.2%	50	0.95
Provider gave easy to understand information about health questions or concerns (Yes)	93.3%	75	85.9%	<25	0.73
Provider showed respect for what I had to say (Yes)	92.1%	<25	96.0%	60	0.74
Provider spent enough time (Yes)	93.7%	60	90.7%	25	0.50
Recommend provider's office to family and friends (Definitely Yes)	90.5%	>90	92.1%	>90	0.79
Share thoughts on experience in resident clinics (Positive experience)	79% (n=33)	N/A	76% (n=51)	N/A	0.39

* 2013 Comparative Data of the CAHPS Clinician & Group Surveys Database from 1,234 practice sites (428,154 surveys). Data obtained from Healthcare Research and Quality.

Table 5. Characteristics of Inpatient Survey Respondents (Neuroscience and Urology)

	Jan/Feb 2014 n = 107	June/July 2014 n = 87	P-value*
Rate your overall health			
Excellent	23 (21.5%)	14 (16.1%)	
Very good	38 (35.5%)	30 (34.5%)	
Good	28 (26.2%)	26 (29.9%)	0.82
Fair	12 (11.2%)	12 (13.8%)	
Poor	4 (3.7%)	2 (2.3%)	
No Response	2 (1.9%)	3 (3.4%)	
Rate your overall mental health			
Excellent	45 (42.1%)	32 (36.9%)	
Very good	28 (26.2%)	22 (25.3%)	
Good	21 (19.6%)	22 (25.3%)	0.61
Fair	7 (6.5%)	9 (10.3%)	
Poor	3 (2.8%)	2 (2.3%)	
No Response	3 (2.8%)	0	
Gender			
Male	57 (53.3%)	44 (50.6%)	0.65
Female	50 (46.7%)	43 (49.4%)	
Age			
18-34	14 (13.1%)	7 (8.0%)	
35-49	19 (17.8%)	17 (19.6%)	0.20
50-64	33 (30.8%)	38 (43.7%)	
65+	41 (38.3%)	25 (28.7%)	
Education			
8th grade or less	3 (2.8%)	0	
Some high school	5 (4.7%)	1 (1.1%)	
High School graduate	24 (22.4%)	16 (18.4%)	
Some college	28 (26.2%)	19 (21.8%)	0.15
4 year college graduate	18 (16.8%)	22 (25.3%)	
More than college graduate	24 (22.4%)	27 (31.1%)	
No Response	5 (4.7%)	2 (2.3%)	
Race			
White	96 (89.8%)	79 (90.9%)	
Black or African American	4 (3.7%)	2 (2.3%)	
Asian	2 (1.9%)	1 (1.1%)	0.73
American Indian Alaska Native	1 (0.9%)	0	
No Response	4 (3.7%)	5 (5.7%)	
Language			
English	97 (90.7%)	79 (90.9%)	
Spanish	1 (0.9%)	1 (1.1%)	
Other	1 (0.9%)	1 (1.1%)	0.98
No Response	8 (7.5%)	6 (6.9%)	

* Based on Chi-square test of responses

Table 6. Hospital-Level Neuroscience HCAHPS Item Results and PG National percentile, Top Box Scoring

Outcome (Top Category Response)	Item	Jan-Feb 2014 (Always) n = 66	Jan-Feb 2014 PG National percentile N = 1823*	June-July 2014 (Always) n = 60	June-July 2014 PG National percentile N = 1823*	P-value
Care from Doctor Composite		82.2%	59	77.8%	24	0.68
	Doctors treat me with courtesy and respect	90.9%	79	91.6%	17	0.27
Doctor communication (always)	Doctors listened carefully	81.5%	63	78.3%	40	0.71
	Doctors explained things in a way to understand	74.2%	35	71.7%	20	0.94
(Definitely yes)	Recommend this hospital to friends and family	75.8%	63	78.3%	75	0.80
(9 or 10 best hospital)	Rate this hospital	85.6%	44	86.9%	30	0.45

* Number of facilities in the Press Ganey (PG) National database

Table 7. Hospital-Level Urology HCAHPS Item Results and PG National percentile, Top-Box Scoring

Outcome (Top Category Response)	Item	Jan-Feb 2014 (Always) n = 41	June-July 2014 (Always) n = 27	P-value
Care from Doctor Composite		91.0%	88.9%	0.55
	Doctors treat me with courtesy and respect	90.2%	96.3%	0.68
Doctor communication (always)	Doctors listened carefully	90.2%	88.9%	0.62
	Doctors explained things in a way to understand	90.2%	81.5%	0.57
(Definitely yes)	Recommend this hospital to friends and family	90.2%	88.9%	0.81
(9 or 10 best hospital)	Rate this hospital	87.8%	85.2%	0.32

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Appendix 1. Overall Press Ganey Neuroscience Patient Satisfaction Scores

Composite, Items and Overall Rating	Pre-intervention Mean (95% CI) n = 41	Post-intervention Mean (95% CI) n = 27	P-value
Physician Composite	91.8 (87.5, 96.1)	94.9 (91.5, 98.3)	> 0.05
Time Physician spent with you	87.2 (81.6, 92.9)	91.0 (86.2, 95.8)	> 0.05
Physician concern questions/worries	92.5 (88.1, 96.9)	96.0 (92.3, 99.7)	> 0.05
Physician kept you informed	91.7 (86.2, 97.2)	94.0 (88.9, 99.1)	> 0.05
Friendliness/courtesy	91.9 (87.1, 96.7)	98.1 (95.5, 100.7)	> 0.05
Skill of Physician	96.2 (92.8, 99.6)	95.2 (91.3, 99.1)	> 0.05
Courtesy/profess interns/residents	**95.3 (91.1, 99.5)**	**93.0 (87.7, 98.3)**	> 0.05
Personal Issues Composite	91.9 (87.5, 96.3)	94.7 (90.8, 98.6)	> 0.05
Staff concerned for your privacy	93.9 (90.2, 97.6)	95.4 (91.7, 99.1)	> 0.05
How well your pain was controlled	89.6 (83.2, 96.0)	94.0 (88.9, 99.1)	> 0.05
Staff addressed emotional needs	91.9 (86.5, 97.3)	93.0 (87.7, 98.3)	> 0.05
Response concerns/complaints	92.1 (85.9, 98.3)	97.7 (94.6, 100.8)	> 0.05
Staff include decisions re: treatment	93.1 (88.1, 98.1)	93.8 (87.0, 100.6)	> 0.05
Family able to participate decision	93.2 (89.6, 96.8)	93.5 (87.9, 99.0)	> 0.05
Staff explained roles in care	91.0 (85.2, 96.8)	94.0 (88.9, 99.1)	> 0.05
Staff supported family throughout	93.2 (89.1, 97.3)	95.5 (91.4, 99.6)	> 0.05
Staff respected having family with	96.5 (93.0, 99.9)	94.8 (89.7, 99.9)	> 0.05
Staff respected cultural/spiritual	93.6 (89.3, 97.1)	97.4 (93.9, 100.9)	> 0.05
Overall Assessment Composite	95.3 (92.0, 98.6)	98.5 (96.5, 100.5)	> 0.05
Staff worked together care for you	94.5 (90.1, 98.9)	98.2 (95.7, 100.7)	> 0.05
Likelihood recommending hospital	96.3 (93.5, 99.1)	99.1 (97.3, 100.9)	> 0.05
Overall rating of care given	95.6 (92.1, 99.1)	98.2 (95.7, 100.7)	> 0.05

Appendix 2. Overall Press Ganey Urology Patient Satisfaction Scores

Composite, Items and Overall Rating	Pre-intervention Mean (95% CI) n = 66	Post-intervention Mean (95% CI) n = 60	P-value
Physician Composite	89.1 (84.5, 93.7)	89.2 (84.9, 93.4)	> 0.05
Time Physician spent with you	85.1 (79.7, 90.6)	82.3 (75.5, 89.1)	> 0.05
Physician concern questions/worries	88.6 (83.1, 94.1)	86.6 (80.4, 92.8)	> 0.05
Physician kept you informed	88.8 (83.5, 94.1)	87.9 (82.3, 93.5)	> 0.05
Friendliness/courtesy	93.8 (89.8, 97.7)	92.8 (88.1, 97.6)	> 0.05
Skill of Physician	92.9 (88.5, 97.3)	96.6 (94.4, 98.8)	> 0.05
Courtesy/profess interns/residents	**92.2 (87.8, 96.6)**	**90.8 (86.6, 95.0)**	> 0.05
Personal Issues Composite	88.0 (84.1, 91.9)	88.1 (84.8, 91.4)	> 0.05
Staff concerned for your privacy	87.7 (82.7, 92.6)	89.8 (86.1, 93.5)	> 0.05
How well your pain was controlled	88.3 (83.7, 92.9)	87.5 (83.2, 91.8)	> 0.05
Staff addressed emotional needs	87.3 (82.8, 91.8)	87.9 (83.8, 92.0)	> 0.05
Response concerns/complaints	86.4 (81.0, 91.8)	87.5 (82.8, 92.2)	> 0.05
Staff include decisions re: treatment	90.6 (86.8, 94.4)	87.5 (83.4, 91.6)	> 0.05
Family able to participate decision	90.8 (86.9, 94.6)	90.3 (85.8, 94.7)	> 0.05
Staff explained roles in care	88.3 (83.8, 92.8)	87.9 (83.3, 92.5)	> 0.05
Staff supported family throughout	88.5 (83.4, 93.6)	88.4 (84.0, 92.8)	> 0.05
Staff respected having family with	91.5 (87.3, 95.7)	92.0 (88.3, 95.6)	> 0.05
Staff respected cultural/spiritual	90.6 (85.9, 95.2)	89.9 (85.3, 94.5)	> 0.05
Overall Assessment Composite	92.2 (87.8, 96.6)	91.3 (87.8, 94.7)	> 0.05
Staff worked together care for you	92.4 (87.9, 96.9)	91.7 (88.3, 95.1)	> 0.05
Likelihood recommending hospital	91.7 (87.2, 96.2)	90.0 (85.6, 94.4)	> 0.05
Overall rating of care given	92.4 (87.7, 97.1)	92.1 (88.5, 95.7)	> 0.05