

Through patient eyes: Can third-year medical students deliver the care patients expect?

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Abstract

Introduction: Patient-centered approaches have a positive impact on adherence to treatment, self-management of chronic disease, and patient satisfaction. We seek to graduate physicians who provide effective Patient-Centered Care (PCC). The aims of this research were to (a) include the patients' perspectives in describing behaviors essential to effective PCC, (b) create an authentic, credible tool to assess these behaviors in third-year medical students, and (c) validate the assessment tool through the eyes of our patients.

Methods: To develop and validate PCC behaviors we (a) developed PCC descriptors that included patient perspectives, (b) developed scenarios for students to demonstrate PCC, (c) administered the PCC-Objective Structured Clinical Exam, and (d) used the patient perspective to validate results.

Results: Faculty and students found the PCC-OSCE to be an authentic experience. Students received abundant individualized feedback and demonstrated strong performance in communicating effectively, avoiding medical jargon, listening actively, demonstrating empathy, and leading critical conversations. Patient critiques of exemplary performances confirmed that the PCC-OSCE assesses elements the patients viewed as essential to PCC.

Conclusion: Incorporating the patients' perspective aids in better understanding professional competencies and legitimizes the assessment.

Introduction

Rosita, a 15-year-old first-generation Mexican American, was admitted to the hospital with mild diabetic ketoacidosis and a new diagnosis of type 1 diabetes mellitus. Each day Rosita encountered a long line of health professionals and she did not know what questions to ask of whom. Mom, Carolina, found it difficult to re-arrange her work schedule to be present when decisions about Rosita's care were made, and was relieved when the team provided diabetes education materials in English and in Spanish. After discharge, Rosita had difficulty in managing her diabetes. She was afraid to return to the regular basketball practices she loved. Buying and preparing the "right food" was expensive and took time away from school and basketball. Both Rosita and Carolina were frustrated, and all the changes were overwhelming. From their perspectives, the health-care providers meant well, but did not seem to understand what was really important to Rosita's daily life.

To provide Rosita safe, effective, timely, efficient, equitable, and patient-centered care requires medical professionals able to work in interprofessional teams and apply their knowledge within complex environments (Institute of Medicine (U.S.) Committee on Quality of Health Care in America 2001; Greiner & Knebel 2003; Interprofessional Education Collaborative Expert Panel 2011). Rosita's health-care team needs to (a) respect her individual perspective, beliefs, values,

Practice points

- Legitimizing and incorporating the patients' perspective is essential to better understand complex professional competencies such as patient centered care (PCC).
- Students need descriptions of the specific behaviors patients see as important in the delivery of PCC if they are to enhance their skill in PCC.
- The PCC-OSCE offers faculty the opportunity to observe student interaction in a highly structured and challenging situation and to provide abundant, individualized, actionable feedback to enhance the PCC abilities of their future colleagues.
- Faculty feedback on student performance on the PCC-OSCE can be used to continuously enhance curriculum.
- The PCC-OSCE provides information on medical student performance on skills patients see as important to their care.

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and culture; (b) share timely, complete, accurate, and understandable information to inform health choices; (c) engage Rosita as she prefers, understanding that care choices belong to that individual; and (d) partner in decision making to deliver care (The University of Missouri-Columbia School of Medicine Mission Statement 2014). There is growing evidence that patient-centered approaches to care have a positive impact on adherence to treatment, self-management of chronic disease, and patient satisfaction (Mead 2000; Stewart et al. 2000; Mead & Bower 2002; Arora 2003; Brédart et al. 2005; Epstein et al. 2005; Epstein & Street 2007). Legitimizing and incorporating the patients' voice is essential to developing better understanding of competence, and appropriate assessment criteria for professional competence (Norcini et al. 2011). This study began by gathering the patients' perspectives of patient-centered care (PCC) and concluded by confirming exemplary student performance in PCC through the eyes of our patients.

In 2003, our medical school clarified the education mission, established foundation values, and identified key characteristics expected of graduates (Headrick et al. 2010). Foremost among the key characteristics is "able to deliver effective patient-centered care." A PCC focus is integrated into the educational experiences of medical students beginning the first week of medical school and this focus is sustained across the curriculum. Beginning with the graduating class of 2012, successful performance on a Patient-Centered Care Objective Structured Clinical Examination (PCC-OSCE) is a graduation requirement. Students must interact with standardized patients (actors playing the role of a patient), solicit information from the patient, and create a management and care plan: the

PCC-OSCE moves beyond assessing diagnostic acumen to focus specifically on behaviors our patients, faculty, and students recognize as essential to routine delivery of effective PCC.

Aim

The aims of this research were to (a) include the patients' perspectives in describing behaviors essential to effective PCC, (b) create an authentic, credible tool to assess these behaviors in third-year medical students, and (c) validate the assessment tool through the eyes of our patients.

Methods

Ethical approval for this study was obtained on 18 March 2008.

Phase 1: Developing the PCC descriptions

Descriptions of specific behaviors form the backbone of the PCC learning experiences and assessments. We recognized we needed a clear definition to develop trustworthy assessments of PCC. Figure 1 illustrates phases in developing and validating PCC behaviors. To identify specific PCC behaviors, we searched the Academic Premier, Medline, and Cinahl databases, reviewed 613 abstracts, and selected 126 articles for in-depth analysis. From these, we abstracted language describing PCC, collaboration, and communication behaviors. We reviewed these candidate behaviors and combined or omitted similar statements. To ensure we retained behaviors that our patients and faculty see as essential to routine PCC, we recruited the focus group participants from three groups:

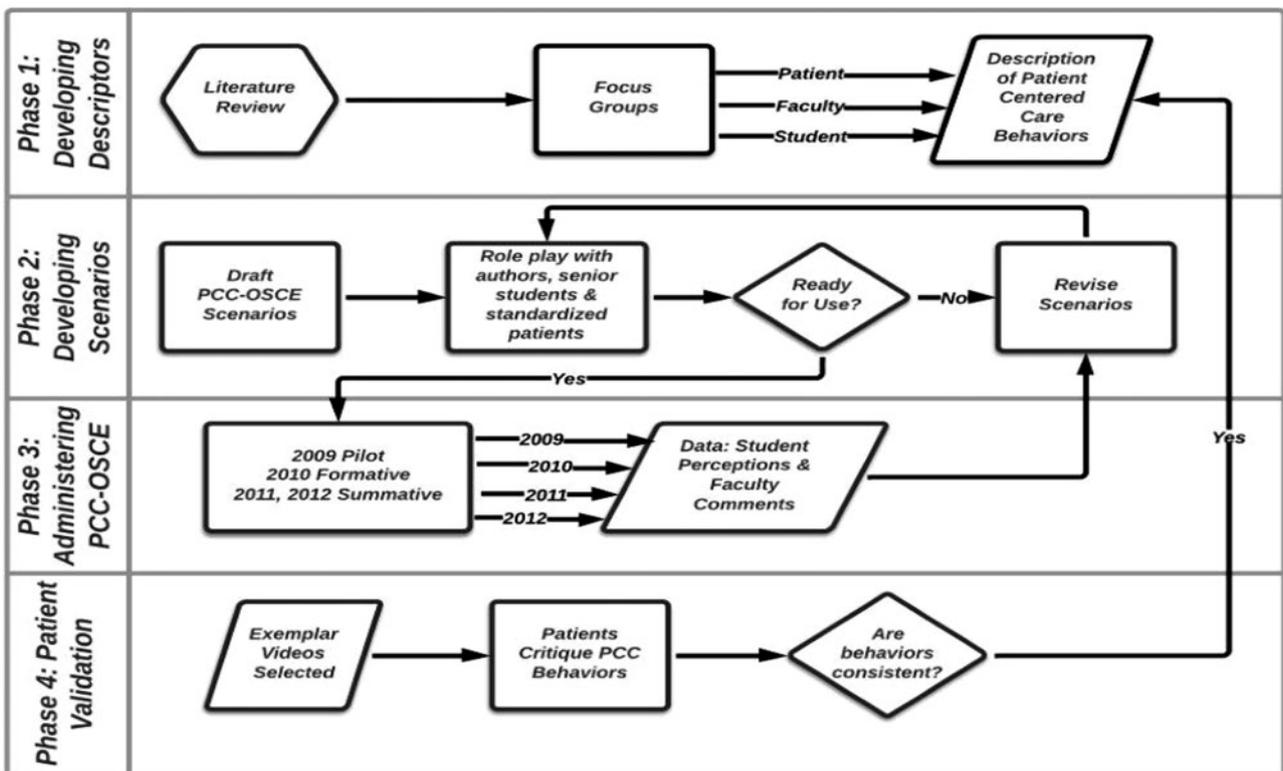


Figure 1. Overview of phases to create and validate PCC-behaviors through the eyes of our patients.

(a) patients who routinely received care in our health-care system ($N=22$: 63%, female), (b) faculty ($N=9$: 22%, female), and (c) medical students ($N=14$: 53%, female).

Patients

The age of patients ranged from 16 to 76 years across the four patient focus groups: (a) community dwelling seniors, (b) adults, (c) adolescents, and (d) parents of adolescents. In the 1.5–2 h sessions, participants responded to open-ended questions and described their own, or a family member's, experience that they considered to be patient-centered. The behaviors identified by patients were extracted through thematic analysis of the focus group transcripts and ranked according to how frequently they were mentioned during the focus groups.

Medical students and faculty

We completed separate focus groups for medical students and faculty. Medical students responded to an open invitation sent to each of the four classes. Faculty were selected to represent a range of medical specialties and practice settings and responded to e-mails soliciting their participation. We used the candidate behavior statements identified in the literature to develop surveys administered to students and faculty. Prior to discussion, participants used a Likert scale to individually rate each behavioral statement along three dimensions: (a) *Importance*, (b) *Goodness of Fit within a category*, and (c) *Confidence*, the behavior could be observed. Mean scores of each dimension were calculated for each statement. Completed surveys were brought to focus groups for further

elaboration (Krueger & Casey 2000). We completed a thematic analysis of the group's discussion of their individual ratings and used a three-part algorithm to retain candidate behavior statements: (a) an average rating of ≥ 4.0 on a 5-point scale of *Importance*, (b) an average rating of ≥ 4.0 on a 5-point scale on *Fit*, and (c) a natural break in the average value for *Confidence*.

Themes ranked by patient focus groups were plotted against faculty and student mean scores for *Importance and Confidence*. We triangulated qualitative and quantitative data to establish patterns of consistency and utility. Figure 2 shows faculty and student ratings of *Importance* for the ten behavioral statements most discussed by patients. All except one item was ranked highly important by all three groups. Agreement between groups ensured that the most important behaviors were retained.

Phase 1 resulted in descriptions of specific behaviors that support PCC. Rosita's story illuminates the need for sensitivity to patient concerns and preferences to thoroughly and accurately explain and treat a patient's illness. This need and others were evident in the behavioral statements retained in Phase 1. With the desired behaviors identified, PCC-OSCE scenarios could be developed that would enable our students to demonstrate these PCC behaviors.

Phase 2: Developing the PCC-OSCE scenarios

We engaged education leaders in organizing PCC behaviors into clusters and modified our school's standardized patient template to (a) emphasize social and cultural elements, (b) include standardized roles for patients, family, and

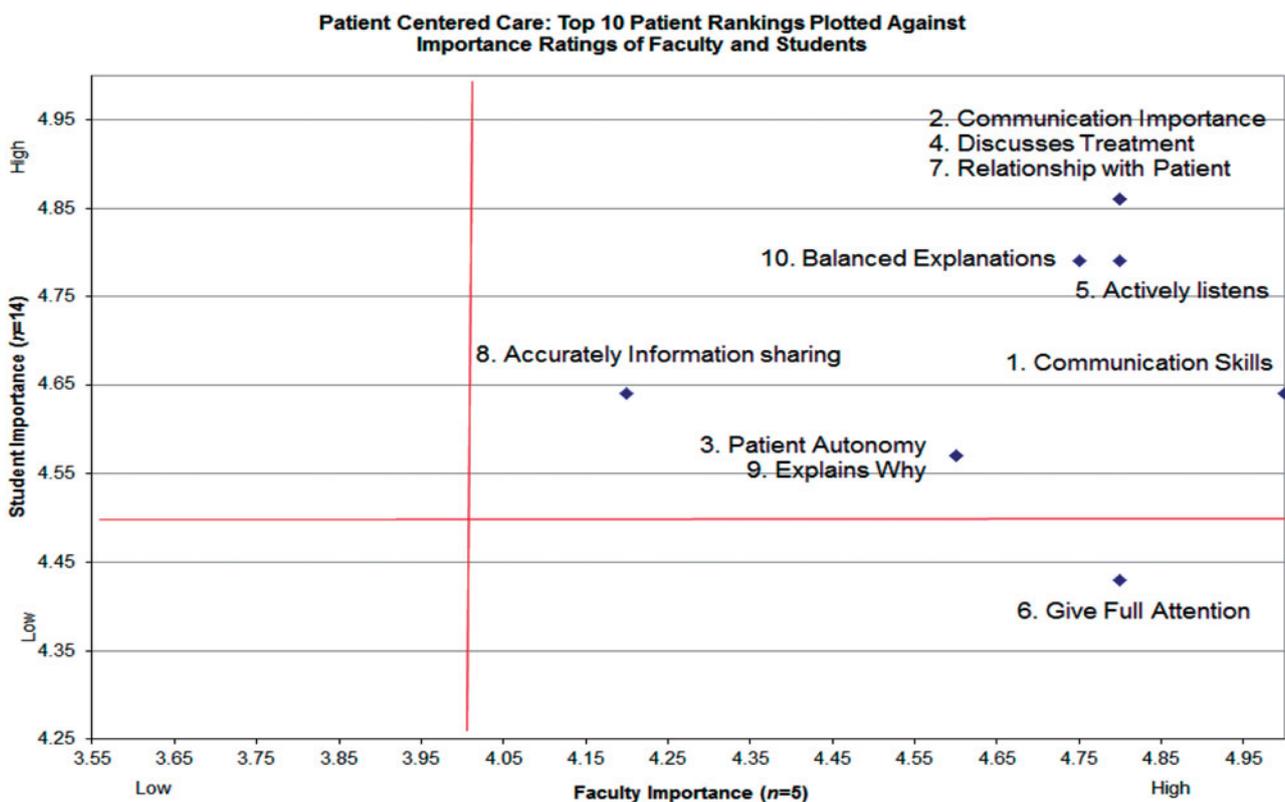


Figure 2. Agreement among patients, faculty, and medical students on PCC behaviors.

health-care team members, and (c) incorporate return encounters with the same patient.

Faculty formed authoring teams and used improvement cycles to create the PCC-OSCE cases. Each case was tested through role plays by (a) case authors, then by (b) upper-level medical students and case authors, and then by (c) trained community actors. After each cycle, authors refined both the case and the forms used to assess student performance. We recruited health-care providers to participate in the encounters as standardized health-care providers. Depending on the scenario, students could interact with a cast of standardized patient, standardized family member(s), and a standardized health-care provider. We selected cases that, in total, would allow students to demonstrate the essential PCC behaviors and created a PCC-OSCE examination. The PCC-OSCE examination complements other third year formative and summative OSCE assessments.

Phase 3: Administering the PCC-OSCE

In April 2009, 13 third-year medical students voluntarily completed the PCC-OSCE, followed by a structured debriefing. Data from the debriefing were used to further refine the process and content of the PCC-OSCE. In April 2010, 89 third-year students participated in the PCC-OSCE and received formative feedback. Student perceptions and analysis of faculty graders' evaluative comments to students were used to further enhance the PCC-OSCE. We analyzed the forms faculty used to evaluate student performance to determine if all sections were used. Review of digital recordings of the student encounters identified student-generated questions that did not have a pre-formulated response in the standardized patient or standardized health-care provider training materials. Authoring groups used these data to enhance the cases and training materials.

Eighty nine students in 2011 and 97 students in 2012 completed the PCC-OSCE for required summative evaluation at the end of their third year of medical school. After each cycle, we analyzed faculty comments of student performance, and coded each for (a) content themes and (b) the intent of the comment. For example, did the comment reinforce appropriate behavior, or seek to re-direct and improve student PCC behavior? Themes from the faculty feedback to students were provided to the PCC-OSCE authoring groups and educational leaders to (a) enhance curriculum experiences in PCC, (b) select the content for new scenarios, and (c) improve both process and content of the PCC-OSCE. We also analyzed (a) the quantity of feedback each student received, (b) the number of students whose PCC behaviors were rated as exemplary by faculty, and (c) the number of students who were required to complete performance improvement plans to enhance their PCC behaviors. We collected student perceptions of their experience after each cycle and used these data to improve both the process and the content of the PCC-OSCE.

Phase 4: Patients' perspective of performance

In 2012, A. R. completed a study to validate the PCC behavioral statements and PCC-OSCE through the eyes of our patients.

A. R. was not part of Phases 1–3 of this study. Patients who were not a part of Phase 1 focus groups (72% female; mean age = 63, $N=25$) reviewed exemplary encounters from the PCC-OSCE. Five student PCC-OSCE performances rated by faculty as exemplary were selected. Patient participants were solicited via the request of six physicians (four generalists; two specialists) and through a program matching adult seniors with medical students. Patients participated in one of six groups of 2–5 participants. Participants wrote an individual description of PCC before reviewing two exemplary student performances, followed by open discussion after each video review. Patients described elements of the video they believed were essential to PCC. Transcripts were analyzed and thematic analysis performed to describe essential features of PCC. These themes were then compared to the behaviors described in Phase 1 to determine if the patients participating in this phase valued the same PCC behaviors as Phase 1.

Results

Phase 1: Developing the PCC descriptions

Two qualitative researchers extracting themes from the patient focus group data achieved an inter-rater agreement of 0.90. Triangulation of responses from patients, students and faculty demonstrated good agreement and yielded 25 essential PCC behaviors. Figure 3 demonstrates the progressive refinement of PCC behaviors. Faculty and student survey data demonstrated good agreement on *Importance* and *Fit* with the greatest variance found in ratings of *Confidence* that the behavior could be observed.

Phase 2: Developing the PCC-OSCE scenarios

PCC-OSCE exams were created by selecting 4–5 unique cases that allowed students to interact with patients, family, and health-care providers in ambulatory or inpatient settings. When appropriate, students encountered the same patient more than once. OSCE scenarios included patients from adolescents to geriatrics, and interactions with multiple standardized health-care providers. Cases continue to be used for student assessment, therefore, details of the cases have been withheld; however, Roista's story is representative of a PCC-OSCE scenario.

Phase 3: Administering the PCC-OSCE

Student perceptions

Response rates for student perception surveys were 2009, 77% ($N=10$); 2010, 100% ($N=89$); 2011, 96% ($N=85$); and 2012, 100% ($N=97$). Students provided case-specific and general comments. In 2010, 79% reported the PCC-OSCE was authentic and a good assessment of PCC, 96% had sufficient time to complete written documentation, and 58% felt rushed during the patient encounter. Analysis of student comments prompted: (a) clarification of the students' understanding of their "role" in the encounter (intern, resident, and physician), (b) clarification of required documentation, (c) reorganization of presenting information, and (d) more time to read the case

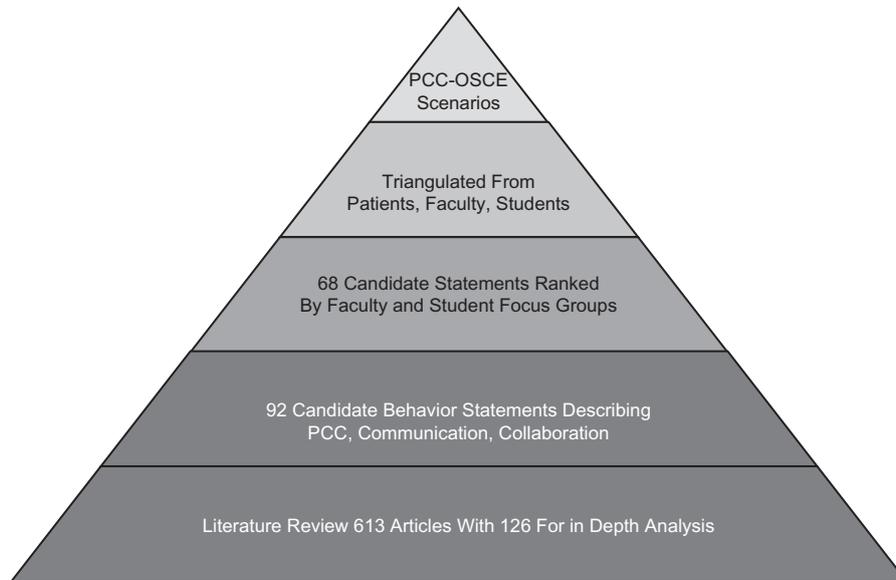


Figure 3. Progressive refinement of PCC behaviors.

information prior to the encounter. Reorganizing the information focused the student on the PCC aspects of the case, as management was more clearly delineated. Despite adjustments to the students' schedule, the comments on time constraint persisted in the 2011 and 2012 administrations.

Faculty feedback to students

Faculty comments on student performance for 2011 and 2012 were independently coded by two qualitative researchers and demonstrated: (a) 92% agreement for content and (b) 98% agreement about whether comments reinforced or sought to improve student PCC behaviors. On average, students received 283 words of written feedback for the 2011 exam administration and 239 words for the 2012 exam. Figure 4 provides illustrative examples of faculty feedback by case. Students demonstrated strong performance on effective communication, avoiding medical jargon, active listening, demonstrating empathy, and leading critical conversations. Faculty feedback identified opportunities to improve student performance on (a) examining barriers to patient compliance with treatment plans, (b) recommending needed lifestyle changes, (c) examining the patient's psycho-social adjustment to diagnosis, and (d) routinely involving members of the health-care team in the patient's care. In 2011 and 2012, 14% of students were rated as exemplary whereas 3% (2011) and 8% (2012) required performance improvement plans on one or more encounters. Students needing improvement reviewed and self-critiqued their encounters, then met with a senior faculty member to review their self-assessment and develop a performance improvement plan. Improvement plans were individualized and included additional clinical work with senior faculty, literature reviews to enhance knowledge deficits, and completion of additional SP encounters to address specific issues. Figure 5 illustrates faculty time required to grade the PCC-OSCE. It also identifies the number of graders that elected to grade in both the 2011 and 2012 administrations.

Phase 4: Patients' perspective of performance

Researchers attained 100% coding agreement on themes extracted from transcripts of patient review of exemplary PCC-OSCE student performance. Patients reviewing videos of student performance described: (a) communication, (b) recognizing and responding to non-verbal cues, (c) limiting medical jargon, and (d) including a team approach to care as essential to PCC. The PCC behaviors described in Phase 4 were congruent with behaviors identified in Phase 1. Additionally, patients' review of student videos highlighted (a) the importance of using visual aids in conjunction with verbal communication, (b) importance of patient/doctor confidentiality, and (c) the negative constraints a 15-min encounter has on physician-patient interactions.

Discussion

The PCC-OSCE provided information on medical student performance that was not previously available in an area that is critical to our mission, vision, and values. We believe that engaging our patients to describe PCC behaviors and seeking their confirmation of exemplary performance was critical to our efforts to foster PCC in our graduates. Moving from a broad concept of PCC (Phase 1) to the specific behaviors our medical students need to acquire, we created scenarios that would enable students to demonstrate these behaviors (Phases 2 and 3). In Phase 4, we engaged patients to confirm our work was on target and that our students were able to provide PCC in the manner that our patients expect.

Engaging Rosita in a patient-centered way is a sophisticated skill requiring verbal and non-verbal behaviors (Levinson et al. 2010). It requires exemplary communication skills but also requires students to go beyond verbal communication to actively engage patients and families as partners, tailor their work to fit a particular context, actively incorporate the

Case	Reinforcing Appropriate PCC Behaviors		Comments to Improve Student PCC Behaviors		Neutral		Total comments
	n	%	n	%	n	%	
Case 1	330	54.8%	263	43.7%	9	1.5%	602
	"good use of open-ended questions to both mom and patient, and nice use of phrase 'what do you think is going on?' and used patient/parent viewpoint(s) to guide visit."		"Not terribly comfortable in interview. Did well with medical issues, but missed underlying problems...Did not ask about home stressors."				
Case 2	554	59.7%	322	34.7%	52	5.6%	928
	"Positive, reassuring comments to patient and daughter throughout the visit. Did well asking about their concerns. Does a nice job appropriately engaging the daughter while keeping the patient the focus of the visit."		"I think she could improve her efficiency during the visit and be more focused on the issues at hand. She spent a lot of time on other things like health prevention (which is important), but limited her time to assess and address the two main issues of memory loss and medication management."				
Case 3	242	53.3%	210	46.3%	2	0.4%	454
	"Very nice, relaxed demeanor with the patient. Using lots of quiet pausing to offer patient to express himself-good. Simple response to the emotionalism of the patient."		"Seemed detached. Body language was closed. She is clearly more comfortable talking about CT scans than talking about death."				
Case 4	328	66.1%	155	31.3%	13	2.6%	496
	"Thorough but had the patience and poise to allow patient to do most of the talking."		"Also, talk with family members more about their concerns. I didn't see that happen much."				
Total	1454	58.6%	950	38.3%	76	3.1%	2480

Figure 4. Examples of faculty comments on students' performance.

	2011	2012	Faculty Grading in 2011 & 2012	Percent Returning
Number of Students Tested	89	97		
Faculty HRS Contributions to Grading	115	194		
Departments				
Number Contributing	9	13		
Departments >3 Graders	5	6		
Number of Graders				
Child Health	10	20	7	70%
Deans Office	6	7	6	100%
Family medicine	14	9	8	43%
Internal Medicine	9	2	2	22%
Psychiatry	2	5	1	50%
Surgery	4	4	2	50%

Figure 5. Faculty contributions to grading the PCC-OSCE.

patients preferences, and integrate their work with members of the health-care team, all while dealing with unexpected challenges. This combination requires high levels of expertise (Kneebone 2009). Direct observation of learner-patient interactions occurs less frequently than desirable (Holmboe 2004; Fromme et al. 2009; Norcini et al. 2011) and learning sophisticated PCC skills requires deliberate practice including

timely constructive feedback (Levinson et al. 2010). Through this initiative, faculties were able to provide abundant, individualized, actionable feedback on students' PCC skills.

As we began this journey, we had three questions: (a) Do the PCC behaviors identified by patients differ from those identified by faculty? (b) Do our students have sufficient patient experiences to develop PCC skill? and (c) How could

we enhance PCC educational programs and keep faculty engagement high?

Patient vs. faculty perspective of PCC

We found excellent congruence between the behaviors described by our patients and our faculty. Further, patients' video review of student performance confirmed the PCC-OSCE assessed elements our patients viewed as essential to effective PCC. This work addresses the 2010 Ottawa Conference's call to legitimize and incorporate the perspectives of patients in assessment criteria, particularly regarding the doctor-patient relationship (Norcini et al. 2011).

Challenges to developing PCC skills

Extant literature describes the significant challenges to develop educational models that foster longitudinal student-patient relationships, promote a better understanding of the patient's experiences, support professional formation, and balance educational needs with the commercial nature of health care (Irby et al. 2010; Holmboe et al. 2011; Hirsh et al. 2012). Prior reports describe third-year medical students' focus on medical record documentation rather than exploring patients' concerns, little evidence of shared decision making, inability to correctly understand patients' beliefs about their own health, and challenges to professional norms that patient-centered care create (Haidet & Stein 2006; Diamond & Markham 2009; Bombeke et al. 2010; Haidet, 2010).

Our medical school follows a problem-based learning curriculum in the first two years and a traditional third-year structure with 8-week rotations in Internal Medicine, Family Medicine, Surgery, Ob-Gyn, Child Health, six weeks in Psychiatry, and two in Neurology. We have developed a longitudinal thread of PCC educational experiences (Figure 6). The behaviors our patients described as essential to PCC

guided creation of these PCC educational experiences. We seek to provide a more "comprehensive perspective on patients' experiences of illness and care" (Irby et al. 2010, p. 225) and to provide students with many opportunities to practice and receive feedback on their PCC skills. Despite the challenges multiple transitions pose to creating longitudinal student-patient relationships, our students were able to demonstrate PCC in a simulated setting in the way our patients expect.

Personal attitude, social influences, and self-efficacy are important in developing patient-centeredness (Bombeke et al. 2010). To better understand the degree to which the learning environment supports student acquisition of PCC behaviors, we annually administer the Communication, Curriculum and Culture (C3) Survey (Haidet et al. 2006). Data indicate our learning environment supports acquisition of PCC behaviors, and students routinely report that faculty model PCC in the clinical setting. Our major teaching health system shares our definition of, and commitment to, PCC. Faculty and residents are supported in their own development of exemplary PCC through a variety of initiatives. In 2011, 1319 physicians, health professionals, and new residents completed PCC simulations and received individualized feedback from trained facilitators. Health system and School of Medicine leaders integrate patients and families into redesigns for improvement of care and education. Both the health system and the school of medicine use recruitment and interview tools to identify and select faculty, staff, and students who are likely pre-disposed to deliver PCC. Annually we share results of the C3 survey with health system leaders. First and second year students are routinely evaluated on their ability to provide PCC in simulated patient encounter, and third year students are routinely evaluated on their PCC skills in the clinical environment. Medical students routinely reflect on their progress in developing PCC skills through their portfolio.

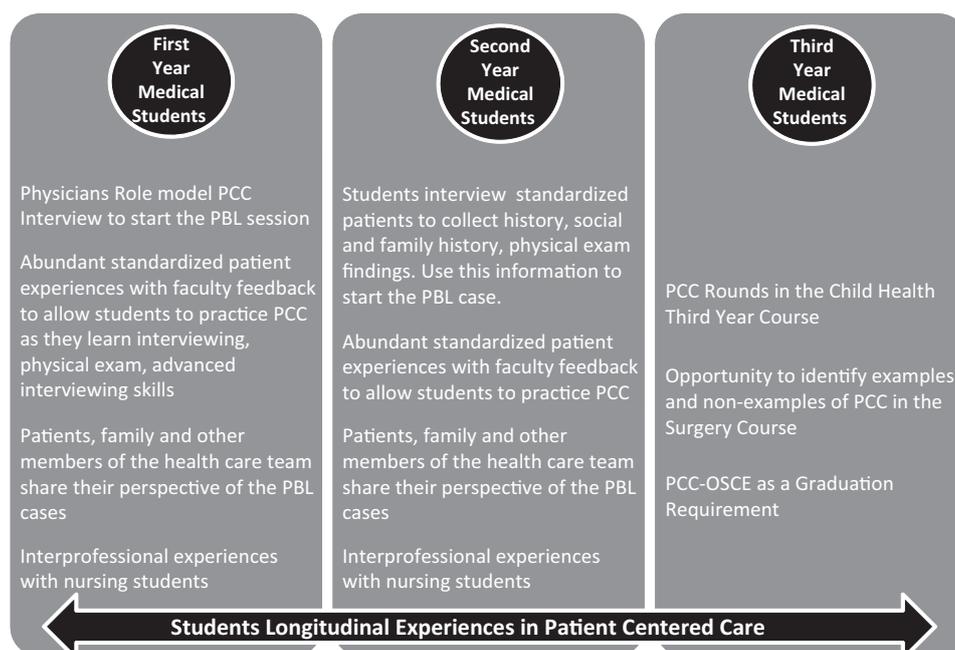


Figure 6. Students longitudinal experiences in patient-centered care.

Each administration of the PCC-OSCE provides information on student performance that was not previously available in a mission-critical area. The PCC-OSCE provides our faculty the opportunity to observe student interactions in highly structured, controlled, but challenging situations and prompts continuous curricular improvement. Examples of curricular changes include enhancing student skills in sharing information with the guardian of an adolescent, and improving student skills in routinely incorporating the health-care team in conversations with the patient.

We have been pleasantly surprised by the number of faculties who volunteer to author and grade the PCC-OSCE every year. As faculty members grade, they are more likely to invest in the following year's exam. We hypothesize that high faculty engagement was related to (a) the alignment of PCC-OSCE with our mission and vision, (b) faculty graders valuing effective PCC and wanting to support PCC skill development in their future colleagues, and (c) the unique opportunity to give students feedback that more directly links to improved patient care. Faculty also report that grading the PCC-OSCE prompts reflection on their own practice and how they may continuously improve their own PCC behaviors.

Conclusions

This study contributes to the literature by (a) illustrating how patients can be engaged to better understand their perspectives of complex professional competencies, (b) describing how an authentic, credible assessment for PCC was developed, and (c) describing a novel approach to generating and vetting specific behaviors that underpin sophisticated professional competencies. Engaging our patients to describe PCC behaviors and seeking confirmation of exemplary performance was critical to our efforts to foster PCC in our graduates.

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