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Listening Beyond Auscultating: A Quality Initiative to Improve Communication Scores in the Hospital Consumer Assessment of Health Care Practitioners and Systems Survey

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ABSTRACT

Introduction: Physician communication is critical to patient care. However, integration of sound communication practice with clinical workflows has proven difficult. In this quality improvement initiative, medical students used the rapid improvement model to test interventions that could enhance patients' perception of listening by physicians as measured by the Hospital Consumer Assessment of Healthcare Providers and Systems survey.

Methods: Literature review and process analysis yielded 42 potential interventions, of which 24 were feasible for implementation. Small-scale testing established the 4 most promising interventions; pilot testing was subsequently undertaken on the entire Medicine service. Patient and physician feedback guided further refinement. The final intervention used a structured reminder embedded in the electronic health record to direct physicians to begin interviews by eliciting patient concerns.

Results: Patient concerns elicited after implementation included pain symptoms (28%), disease or treatment course (16%), and discharge planning (10%). In the Hospital Consumer Assessment of Healthcare Providers and Systems survey, physician listening scores rose from a 2014 average of 73.6% to 77% in 2015.

Discussion: Among 24 tested interventions, an open-ended question was most feasible and had the greatest perceived impact by hospitalists and patients. A structured reminder embedded in required electronic medical record documentation facilitated the behavioral change without being overly burdensome to physicians and established a mechanism to enact change in practice.

Conclusion: Medical students used established improvement methods to promote patient-centered care and align patient and physician agendas, providing a strategy to improve hospitalized patients' perceptions of physician listening.

INTRODUCTION

Physician communication is foundational to patient care and has been shown to impact patient satisfaction, adherence to treatment plans, and health outcomes.[1] The Kalamazoo consensus statement, put forth by leaders of major medical organizations and academic institutions on core criteria for effective physician patient communication, emphasized building the physician-patient relationship, active listening, and shared decision making as essential elements of physician communication.[2] The significance of physician communication, and in particular these elements, is emphasized in the Hospital Consumer Assessment of Healthcare Providers and Systems (HCAHPS) survey, the national standard for public reporting of patients' hospital care experiences. In the HCAHPS survey, patients provide feedback on care received from physicians in the hospital; care comprises how often physicians treated the patient "with courtesy and respect," "listened carefully" to the patient, and "explained things in a way [the patient] could understand."[3]

In 2013-2014, the Oakland Medical Center in CA scored in the 76th percentile for physician communication overall[4] and in the 50th percentile for the physician listening subset, falling short of the hospital's goal to place in the 90th percentile for both measures. To address this gap, 8 third-year medical students in the Kaiser Permanente-University of California, San Francisco Longitudinal Integrated Clerkship (KLIC) developed and implemented an improvement project from July 2014 to May 2015. Prior attempts to increase communication scores at Kaiser Foundation Hospitals-Oakland included communication skills training in the 4 habits model[5] and peer-to-peer feedback; the absence of notable improvement is corroborated by the experience of other institutions.[6] In contrast, this project aimed to apply quality improvement methods including the Plan-Do-Study-Act approach[7] to create and test small-scale interventions that could improve HCAHPS listening subset scores.

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METHODS

The Oakland Medical Center is a 349-bed hospital and tertiary referral center. The hospital medicine service consisted of 64 physicians attending on 4 teaching and 4 nonteaching teams. In 2014, 10 of these hospitalists formed a "Project Bedside" task force to drive patient-centered care initiatives; this group served in an advisory capacity for the project reported here. Conducted as a quality improvement activity, the project was considered exempt from review by the institutional review board.

Figure 1 provides an overview of the project design. A literature review on successful physician-patient communication strategies was completed. Given the limited number of studies demonstrating an impact on HCAHPS physician communication scores, the review was expanded to include studies reporting any patient satisfaction measures. Service industry assessments of consumer satisfaction were also included.

The group then turned its attention to detailed observations of patient-physician interactions. The goal was to identify possible elements of the hospital system and physician communication practices that contribute to patients perceiving that their physician was not listening carefully. Observations of communication behaviors and barriers during clinical rounds on inpatient internal medicine teaching and nonteaching teams over a 3-week period were made using time-motion study techniques. Each patient-physician encounter was blocked into 15-second intervals. After each encounter, patients were asked to comment on communication with the physician. Behaviors and patient and physician statements were recorded. Observations were pooled and factors with a negative impact on patients' perception of listening were extracted. These factors were mapped onto a fishbone diagram[8] using 6 predetermined domains of man, materials, methods, machine, measurement, and milieu (Figure 2).

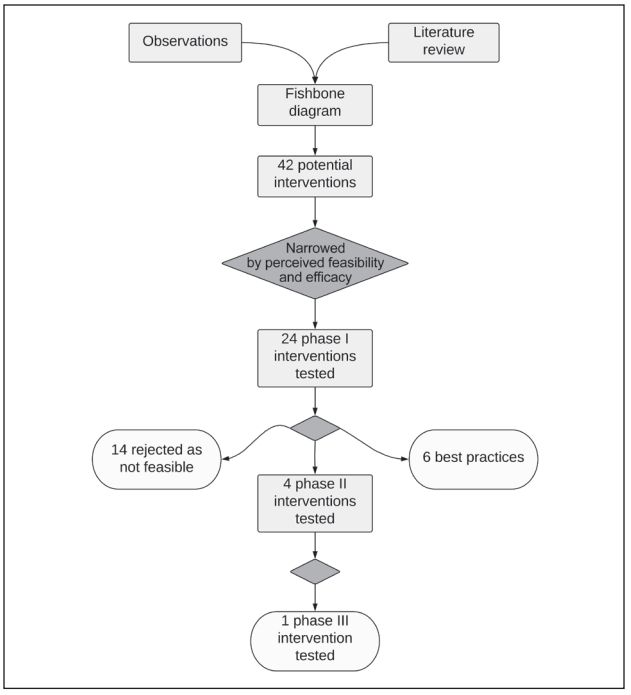

Figure 1. Overview of project design.

Using the fishbone diagram and communication strategies gleaned from the literature review, 42 interventions that could improve perceptions of physician listening were developed (see Sidebar: Potential Interventions to Enhance Patient Perceptions of Physician Listening). The 8 medical students met with a hospital physician liaison and a systems improvement mentor to make binary assessments for each potential intervention of

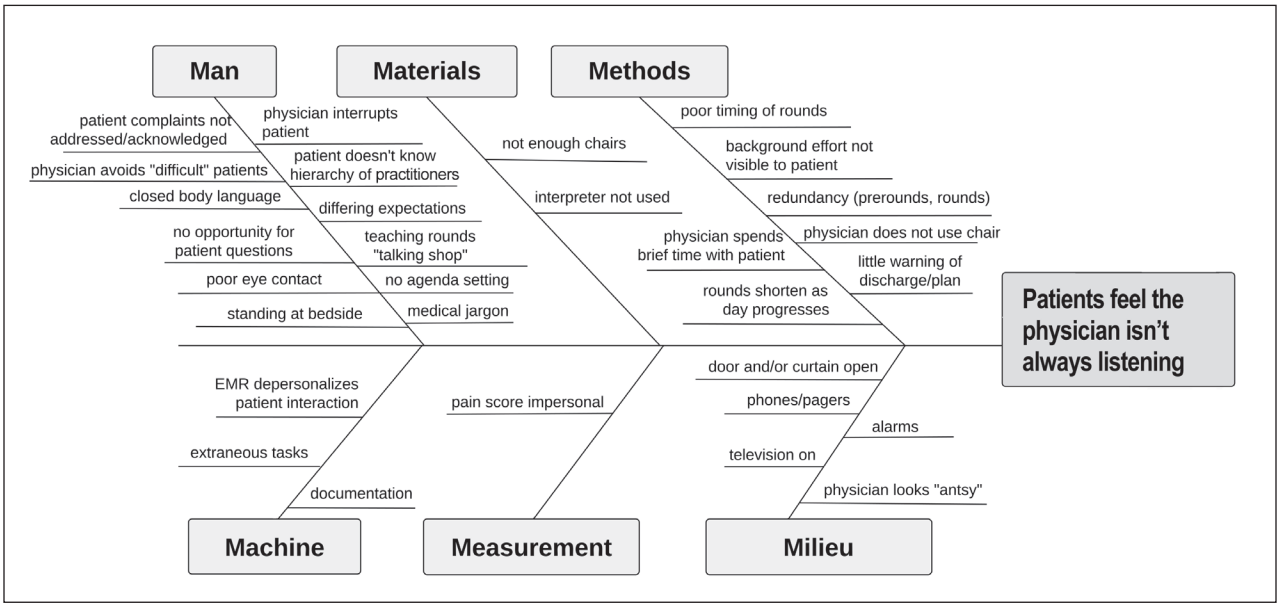

Figure 2. Fishbone diagram of factors with negative impact on patient perception of physician listening.
EMR = electronic medical record.

feasibility (yes/no), potential impact on desired outcome (high/low), and balancing measures (high/low likelihood of having adverse unintended consequences). Group consensus on each parameter was recorded. The 24 interventions deemed to have high feasibility and high impact with low likelihood of having adverse unintended consequences were selected for small-scale testing in phase I.

The testing phases were informed by the Plan-Do-Study-Act framework. During phase I testing sessions, a student attended one day of bedside rounding with one of three "Project Bedside" hospitalists while attending on a nonteaching service, informing the hospitalist in advance of the specific intervention to be attempted. The hospitalist performed each intervention during three or more patient encounters. After rounds, the student and the hospitalist discussed feasibility, effectiveness, and possible modifications for retesting.

Students used this information to organize the interventions on the basis of feasibility and impact. Fourteen interventions were subsequently rejected on the basis of high effort or low impact. Six interventions, closely related to the domain of etiquette-based medicine,[9] were designated as standard practice and not tested further. These were as follows: Closing the door and/or drawing the curtain closed in a room when entering it; introducing oneself and providing a business card; scheduling a return when the patient is in pain, eating, or toileting; using the patient's preferred name and form of address; turning off the television while talking with the patient; and sitting on a chair during conversations with the patient. The remaining four interventions, described in Table 1,[5,10-13] were advanced to phase II. These were as follows: Beginning the patient interview with an open-ended question; giving the patient a hand-held "STOP" sign to signal the need for clarification; managing physicians' disruptive electronic devices; and involving patients' families by calling them during rounds.

During phase II, interventions were individually tested by the 4 hospitalists on nonteaching services for 3 days each during 4 consecutive weeks, representing roughly 120 physician-patient encounters for each intervention. Hospitalists were informed of the intervention during physician staff meetings and by e-mail

Potential Interventions to Enhance Patient Perceptions of Physician Listening

Process changes (methods)
- Sit down on chair when talking with patient[a] *(standard practice)*
- Patient-centered rounding: Schedule time to return if patient is in pain, eating, or toileting[a] *(standard practice)*
- Introduce self and give business card to patient[a] *(standard practice)*
- Document patient's preferred name on white board in room or in medical record[a] *(standard practice)*
- Introduce everyone present in the room for rounds and explain roles[a]
- Family-centered rounds: Timing rounds when family is present or phone a family member or friend when arriving to the room[b]
- See the most interpersonally challenging patient first during rounds
- Round again at the end of the day on all patients and review plan for evening and next day
- Teach patient to use health resources on television in room
- Ask patient to make lists of questions for physician ahead of time
- Post pictures of care team in room with defined roles
- Walk directly to patient's bedside when family members are in the room rather than to where family member is sitting

Decreasing distractions (milieu)
- Turn off or mute television if on[a] *(standard practice)*
- Shut the door or close the curtain after walking in the room[a] *(standard practice)*
- Barrier practice: Leave phone and pager in drop box outside of patient room[a]
- Silence physician devices and acknowledge the interruption verbally each time a pager or hospital wireless phone rings while with patients[b]
- If patient's phone rings, ask them to wait to answer it
- Physician sets a timer before entering room; do not look at clock until timer goes off
- Limit rounds to three care team members
- Acknowledge alarms, sounds in hallway, or overhead announcements when they happen and then continue conversation

Using physical tools or resources (materials)
- When no chair is available, ask to sit on patient's bed[a]
- Prompt patient to interrupt for jargon. Use "please explain" sign[b]

Physician behaviors (man)
- Apologize for grievances[a]
- Inquire about complaints, apologize, and describe plan to fix at least one[a]
- Explain progress in care since last meeting with patient[a]
- Paraphrase patient's concerns[a]
- If standing, crouch down to patient's eye level before leaving[a]
- Scripted closing before leaving the room: Say goodbye, explain when you will be back, and if not, who will be assuming care[a]
- Scripted introduction: "My colleague told me all about you. Now I want to spend a few minutes just listening to you."[a]
- Open-ended question: "What questions do you have?"[a]
- Open-ended question: "What can I do to improve your stay?"[a]
- Open-ended question: "Is there something else I can do for you?"[a]
- Open-ended question: "What do you understand about your hospital course so far?"[a]
- Open-ended question: "What is your main question or concern for today?"[b]
- Do not interrupt patient for two minutes at beginning of each encounter
- Touch patient on the shoulder or arm to show empathy while listening
- Ask patient: "What do you prefer that I call you?"
- Avoid "closed" body language including crossing arms
- Maintain eye contact
- Reiterate goals before closing a patient encounter
- Before examining the patient, ask for permission and tell them what you are looking for
- Ask patient about comfort/pain level

[a] indicates intervention tested in phase I
[b] indicates intervention tested in phase I and II

and reminded through text pages and office flyers. They were asked to exclude patients who did not speak English, were unable to communicate verbally, or had dementia or delirium.

At the end of each three-day intervention period, an online questionnaire was sent to hospitalists soliciting input on adherence, impact, sustainability, and balancing measures. Questionnaires contained multiple-choice questions with five-point

Table 1. Phase II interventions and results

Intervention	Literature analysis	Process of intervention	Fishbone domain	Patient-reported physician adherence	Patient responses: Key themes	Physician responses: Key themes
Beginning the patient interview with an open-ended question	Eliciting patient agendas empowers patients to voice concerns and helps them feel heard[5] and prevents late-arising concerns that prolong encounters.[10]	Hospitalists opened each patient encounter with their choice of two scripted phrases: "What is your main question or concern for us today?" OR "What do you understand about your care so far?"	Man	14/28 surveyed patients.	**High impact.** Patients reported improved communication with physicians: "From the beginning, I felt he wanted to help me … it was refreshing to have someone genuine who isn't just doing their job."	**High feasibility.** Encouraged physicians to be "more mindful to ask these questions early on." Hesitation in using this intervention when meeting patients for the first time. Main barriers included forgetting or physicians' agenda superseding other inquiries.
Stop sign for clarifying jargon	Doctors frequently use medical jargon that interferes with patient understanding.[11]	Hospitalists carried copies of a 5" x 5" stop sign printed on red paper, with the words "STOP, Please Explain" printed on the face, to give patients when entering room. Hospitalists were asked to use a scripted set of instructions: "I want to make sure we're on the same page. Please hold up this sign to interrupt me every time I'm not being clear."	Material	4/45 surveyed patients given a stop sign; only one patient actively used it with physician.	**Insufficient data to assess impact.** Patients expressed that the sign helped or would help their physician explain things in more understandable terms. Several patients asked why their physician would not be clear from the outset and others stated s/he did not require a sign to interrupt the physician to clarify jargon.	**Low feasibility.** Hospitalists reported being more "conscious of avoiding jargon," even when patient was not using the sign. 4/8 hospitalists thought the stop sign was feasible but reported implementation barriers of forgetting, feeling uncomfortable, and not believing it would improve patient interactions. One suggested increased acceptability on teaching services, as patients might find a physical tool to express confusion when multiple physicians were present more useful and less awkward.
Managing physicians' disruptive electronic devices	Interruptions at bedside decrease patient satisfaction.[12]	Hospitalists silenced their devices and acknowledge the interruption verbally each time a pager or hospital wireless phone rang in a patient room. Methods of acknowledgment included apologizing for the interruption, stating the call would be returned later, or stating the current conversation with the patient was more important.	Milieu	10/24 surveyed patients recalled hearing their physician's phone or pager ring, and 9 recalled the physician apologizing or acknowledging an interruption.	**Low impact.** Patients often felt that hearing their physician's phone or pager did not affect communication. Patients' comments included not noticing the call or page because of high background hospital noise and assuming the calls or pages were for urgent issues.	**High feasibility.** Hospitalists reported a greater sense of humanity: "I feel like this helps remind me that I'm not a robotic shift-worker." Others reported increased awareness of interruptions and noise. Implementation barriers included difficulty retrieving missed phone numbers and a paradoxical increase in number of calls after silencing because callers immediately called back. There was interest in educating nursing staff to page for nonurgent matters.
Family-centered rounding phone calls	Parents included in family-centered rounds report higher satisfaction, respect, and careful listening from physicians.[13]	Hospitalists asked each eligible patient, "Is there someone else you would like to be part of this conversation by phone?" If the patient answered yes, the hospitalist would attempt to reach the designated family member(s) or friend(s) using a spectralink phone.	Method	7/30 surveyed patients recalled their physician offering to call a family member or friend on the phone. No patients reported a call being made.	**Low impact.** Patient comments reflected a desire to preserve privacy and autonomy or expressed feeling unprepared for the conversation.	**Low feasibility.** Implementation barriers included insufficient time and technical concerns with the speakerphone. One physician reflected that patients preferred "agency in their care and privacy over updating everyone in their family." Physicians felt this intervention would have been more effective for vulnerable patients (nonverbal, non-English-speaking), who were excluded at baseline.

Likert scales and space for general comments. Students also approached a convenience sample of patients on the last two days of each testing period to obtain comments about communication with their physicians and entered data on computer tablets. This process adhered to the HCAHPS Quality Assurance Guidelines[14]; responses were voluntary and anonymous and no patient identifiers were recorded.

After phase II was completed, students led a focus group with participating hospitalists and members of the Project Bedside task force and obtained further qualitative feedback. Of the four interventions tested, the use of the open-ended question was most feasible and had the greatest perceived impact by hospitalists and patients. The specific question was standardized and made more direct: "What is your greatest concern today?" Concerns about sustainability prompted a proposal to modify the standardized hospitalist daily progress note template in the electronic medical record (EMR) from traditional SOAP (Subjective, Objective, Assessment, Plan) format to "ScOAP," with the "c" designating a header to document patient concerns. Use of a progress note template was already standard practice by hospitalists for documentation; the EMR contained a forcing function such that the "concerns" field had to be addressed or deleted before progress notes could be signed.

During phase III testing, the modified ScOAP template was put in place for three consecutive days on all teaching and nonteaching teams; all hospitalists and residents were informed of the change through e-mail communication and requested to ask the open-ended question during patient encounters. A medical chart review was performed of every progress note written during the three-day period. Charts that documented a diagnosis of dementia or delirium or nonverbal patient were excluded. Text in the "concerns" field was collected and analyzed for presence or absence of a comment and themes in recorded text. Finally, face-to-face interviews with hospitalists were conducted about their experience with the phase III intervention.

RESULTS

Results from phase II are summarized in Table 1. Patient-reported physician adherence served as a tangible process measure, whereas qualitative comments identified themes and likely reasons for relative success or failure of each intervention. Qualitative assessment included comments from patients and physicians. For example, one patient noted his reaction when his practitioner began the interview with an open-ended question: "From the beginning, I felt he wanted to help me to figure out different ways to get down to what's going on." One physician comment about the device-silencing pilot reported a greater sense of humanity: "I feel like this helps remind me that I'm not a robotic shift-worker."

There were several limitations in the data collection process, including time limitations to survey all patients eligible to receive a given intervention and a low response rate among hospitalists to online surveys. Additionally, because HCAHPS quality assurance guidelines prohibit hospitals from asking patients questions with similar phrasing to the HCAHPS survey to avoid response bias, patients could not be directly questioned about physician listening behaviors. These limitations were managed by gathering a convenience sample of patients, allowing for open-ended responses from patients, and gathering additional information from hospitalists through a focus group after phase II and face-to-face interviews after phase III.

Feedback from hospitalists after phase III testing indicated that using the specific open-ended question helped gather relevant information and that the EMR prompt served as a useful reminder. Hospitalists on teaching services noted that residents brought up patient concerns more frequently on rounds during the intervention period. Hospitalists endorsed feeling empowered to address issues meaningful to the patient, and reflected that these concerns may not have been expeditiously addressed otherwise.

Medical chart review of patient concerns documented during phase III revealed the following: Of 150 eligible patient charts, 100 (67%) included physician documentation of patient concerns in the "concerns" field of the ScOAP note. The most common patient concerns included pain symptoms (28%), disease or treatment course (16%), and discharge planning (10%).

In mid-May 2015, two months after the initial three-day pilot, the hospitalist group formally adopted the ScOAP note template following a review of the interventions and implementation experience; its use is ongoing on the medicine hospitalist service.

The Oakland Medical Center's inpatient medicine service HCAHPS topbox scores, or the percentage of survey respondents indicating that physicians "always" listened carefully, are shown in Figure 3. To calculate a baseline, we used an average score from 2014 of 73.6%. By comparison, the 2015 average was 77%. In calculating an annual average, monthly averages were weighted on the basis number of surveys returned for that month. The trendline confirms a general improvement in scores with time. Notable data points include an improvement during February 2015, corresponding to phase II testing, as well as in June and July 2015, corresponding to the 2 months following full adoption of the ScOAP template. Data are reported in raw HCAHPS scores; in January, the score of 68.2% is below the 25th percentile among hospitals nationally; in June, 74% corresponds to the 50th percentile; in July 82.5% is just below the 90th percentile.

DISCUSSION

This article describes the process of testing and implementing best practices in physician-patient communication in an inpatient setting. Application of the Plan-Do-Study-Act method allowed for pilot testing of 24 unique interventions to improve patients' perceptions of physician listening and refinement of one intervention that was universally implemented by a large hospitalist service in an integrated health care system. Soliciting a specific patient concern during daily rounds had the greatest feasibility and impact among the tested interventions. This practice is grounded in literature that has demonstrated increased patient satisfaction with patient-centered approaches[15] and no compromise in efficiency with shared

agenda setting.[10] Furthermore, addressing a specific concern allows the opportunity for a physician to express empathy and can help shift an encounter from being task-oriented to care-oriented[16] with explicit interest in the patient's experience. Postintervention chart review revealed additional targets for patient satisfaction, including pain control and discharge planning.

The results in Figure 3 demonstrate an upward trend in HCAHPS scores over time; because publicly reported HCAHPS score reports did not include standard deviations, statistical analysis using a *t*-test was not possible. The attention given to listening behaviors during phase II in February 2015 may have contributed to the upward trend in HCAHPS scores during that period followed by a return to baseline scores close to the 50th percentile. This may be explained by the Hawthorne effect, manifested as a change in listening behaviors among physicians knowing that patients were providing input about physician communication during that time period. However, the adoption of the ScOAP note across the Hospitalist Department was associated with another upward trend in scores from June 2015 to July 2015 that did not correspond to observation of behavior and cannot be explained by the Hawthorne effect. We hypothesize that the downtrend starting in September 2015 is likely because physicians less consistently initiated a patient encounter by asking for a specific concern despite the EMR reminder; to sustain an increase in listening scores, other identified system barriers would need to be addressed.

A structured reminder embedded in required EMR documentation may improve patients' perception of physician listening without being overly burdensome to physicians and establish a concrete mechanism for change in practice. This is consistent with the principle from "lean methodology" of implementing standardized work to establish a new standard practice.[17] The EMR has been shown to be indispensable in various applications including population health management and medication safety[18]; however, because it "organizes encounters around data gathering demands rather than patients' narratives," the EMR has had mixed effects in the physician-patient communication domain.[19] This hospitalist group's experience with the ScOAP note template demonstrates that patient input can shape EMR improvement and that an intervention using the EMR has the potential to enhance patient-centered communication.

Generalizability of these interventions to other medical centers is limited because the use of a departmentally mandated standard progress note template may not be translatable to the workflow of other hospital settings. Students participating in this intervention identified a need to create and test workflows to apply this intervention to non-English-speaking patients or with family members of patients unable to respond to the question. Finally, the assessment of feasibility, acceptability, sustainability, and anticipated impact of potential interventions before phases I and II did not use validated numeric criteria; the same process could lead to a different intervention in another health system. To strengthen this process locally, the selection of interventions was informed by conversations with stakeholders and direct knowledge of the care delivery system.

CONCLUSION

This report describes a trainee-led quality improvement initiative. As medical students and residents become increasingly involved in quality improvement imperatives as a requirement of their training, our experience demonstrates that trainees hold the potential to initiate change in an institution and positively impact patient care practices.❖

Disclosure Statement

The author(s) have no conflicts of interest to disclose.

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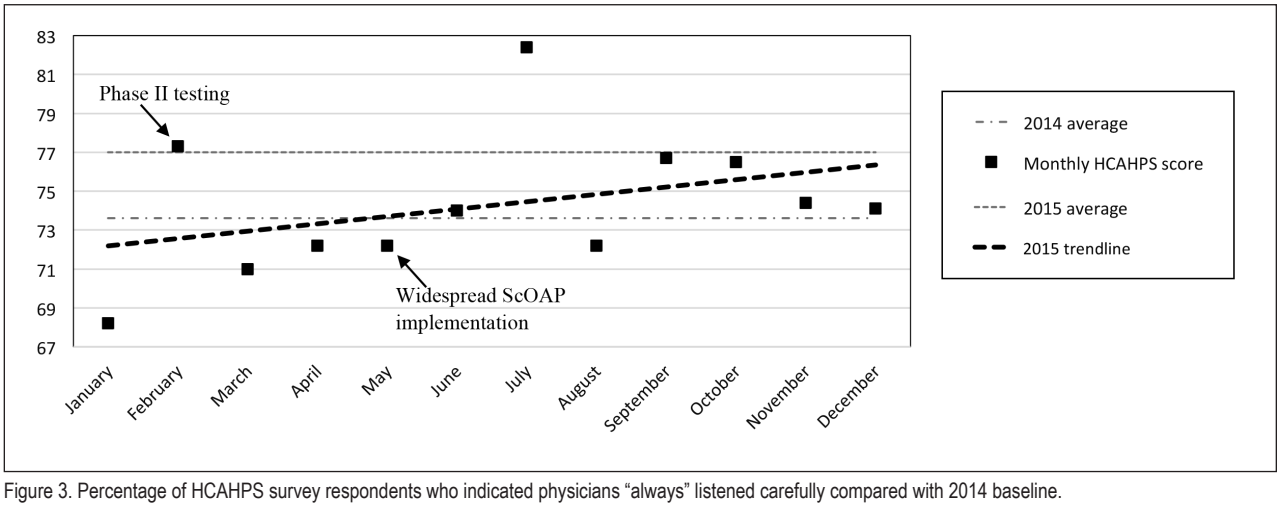

Figure 3. Percentage of HCAHPS survey respondents who indicated physicians "always" listened carefully compared with 2014 baseline.
HCAHPS = Hospital Consumer Assessment of Healthcare Providers and Systems; ScOAP = Subjective, patient concerns, Objective, Assessment, Plan.

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