Published in final edited form as:

Patient Educ Couns. 2017 July ; 100(7): 1345–1352. doi:10.1016/j.pec.2017.02.022.

Relationship between Teach-back and Patient-Centered Communication in Primary Care Pediatric Encounters

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Abstract

Objective—We proposed and tested a theoretical framework for how use of Teach-back could influence communication during the pediatric clinical encounter.

Methods—Audio-taped pediatric primary care encounters with 44 children with asthma were coded using the Roter Interaction Analysis System to measure patient-centered communication and affective engagement of the parent. A newly created Teach-back Loop Score measured the extent to which Teach-back occurred during the clinical encounter; parental health literacy was measured by Newest Vital Sign. Logistic regression was used to test the relationship between Teach-back and features of communication. Focus groups held separately with clinicians and parents elicited perceptions of Teach-back usefulness.

Results—Teach-back was used in 39% of encounters. Visits with Teach-back had more patient centered communication ($p=0.01$). Adjusting for parent health literacy, parent age, and child age, Teach-back increased the odds of both patient centered communication [proportional AOR (95% CI)=4.97 (4.47–5.53)] and negative affect [AOR (95% CI)= 5.39 (1.68–17.31)]. Focus group

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Conflicts of Interest: NONE

This manuscript was presented in part at the 2012 Pediatric Academic Societies Meeting in Boston, MA.

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themes common to clinicians and parents included: Teach-back is effective, could cause discomfort, should be used with children, and nurses should use it.

Conclusions—Teach-back was associated with more patient-centered communication and increased affective engagement of parents.

Practice Implications—Standardizing Teach-back use may strengthen patient-centered communication.

Keywords

Teach-back; patient-centered; communication; global affect

INTRODUCTION

Teach-back is an iterative communication technique in which a clinician asks the patient to say in their own words the information that they have just been given. Teach-back is promoted by the American Academy of Pediatrics, American Medical Association Foundation, and Joint Commission as a critical communication strategy for improving adherence to treatment plans and protecting patient safety.^{1–3} However, a survey of pediatricians indicated the technique is used only 23% of the time. The most frequently cited barrier is limited time.⁴ While planning to implement Teach-back, we heard additional concerns from pediatricians that they worried that parents would perceive the technique as condescending. No previous studies have evaluated how Teach-back influences the communication dynamics during a primary care office visit.

We proposed and tested a theoretical framework for how use of Teach-back could influence communication during the pediatric encounter. Nested in the Chronic Care Model,⁵ we proposed that the Teach-back technique is a skill of the prepared, proactive practice team, while health literacy, the capacity to obtain, understand, and use health care information,⁶ is a skill of the informed, activated patient/parent. The combined result of these skills would be “productive interactions.” (Figure 1) In the context of the primary care visit, we tested the hypothesis that visit interactions would be more “productive” when parents had higher health literacy and/or with more use of Teach-back. Conceptually, we defined “productive interactions” as occurring when a greater proportion of the visit dialogue was patient-centered,^{7,8} and we hypothesized that it would also be associated with greater affective engagement of the parent—both “positive” and “negative” because patient-centered communication would be associated with more dialogue focused on the patient/parent’s concerns.

From the clinician’s point of view, the ultimate outcome of a productive clinical encounter would be patient understanding and adherence to the given instructions. We posit that patient-centered communication is a key step toward those outcomes, particularly because it is not enough for the patient/caretaker to understand the instructions; they must also agree to carry them out. Patient-centered communication engages the patient/caretaker in dialogue that enables informed decisions about whether/how to act on information given. Hence, the

relationship between implementation of Teach-back and patient-centered communication is key.

Finally, to inform future implementation of Teach-back, we conducted focus groups with clinicians and parents to generate new hypotheses about how the technique moderates the pediatric encounter.

METHODS

We recruited participants from an academic pediatric primary care practice serving a low income, minority population in Wilmington, Delaware. All four attending pediatricians in the practice (all practicing at the site for >10 years) participated in audio-taped encounters with children with asthma recruited between September 2009– September 2010.

Eligible participants included: child aged 6–13 years with uncontrolled asthma (measured by the Asthma Control Test¹⁰); visit scheduled with usual provider as identified in the medical record and had seen that provider during the preceding six months; accompanied by the primary caretaker (which we defined as the person who accompanies the child to at least 75% of visits and is responsible at least 75% of the time for administering medications to the child); did not have a sibling already enrolled in the study; were not acutely ill (e.g., having difficulty breathing, febrile, vomiting, etc.); caretaker spoke English (<1 % of the practice population spoke another language); caregiver planned to attend the practice for at least three months more (to reduce loss to follow-up for focus group recruitment).

Procedures

A digital audio recorder was placed in the examination room and started by a trained research assistant, who then left the room. After the visit ended and the provider left the room for the last time, the research assistant retrieved the recorder. The research assistant administered baseline measures to the parent/child dyad before and after the clinician-patient encounter as feasible in the context of the visit. Visit recordings were stripped of patient identifiers and tagged with a unique identifier for coding with the Roter interaction analysis system (RIAS).¹¹ At the end of the study, parents who had participated in the audio-taped encounters were invited to participate in focus groups to discuss their experience of doctor-patient communication. An expert in qualitative methods used a structured guide to facilitate two 60-minute focus groups with parents and one focus group with the four participating clinicians.

To enable analysis of encounters with and without Teach-back, we waited until midpoint through study recruitment to engage clinicians in a three-week series of one-hour interactive trainings in health literacy and use of Teach-back. During the first session, the principal investigator (IS) presented information about health literacy and methods used to improve communication, including principles of “living-room language”, “chunk and check,” and Teach-back. The video, “In Plain Language”⁹ was shown. Community-specific demographic data and known associations with health literacy were discussed. For reinforcement, participants were given a copy of “Help Patients Understand: A Manual for Clinicians.”² The second session focused on Teach-back. To demonstrate the technique and increase

clinician's skill without the bias of excessive content knowledge, interactive role plays were conducted where clinicians tried to teach each other a new instruction (e.g. "How to kill hair follicle fungus with sea salt). For reinforcement, a Teach-back prompt was added to the electronic medical record template in the "Plan" section for all patient visits, and a poster reminding clinicians to use Teach-back was placed in front of the provider desk in each exam room. During the third session, the group discussed their experience with using Teach-back over the preceding week, and discussed strategies they used to incorporate the technique in practice. For reinforcement, providers were reminded to review Teach-back with trainees and to include Teach-back as a measure during structured observations of resident visits.

After all audio-taped visits were completed (September 2010), focus groups were conducted with parents and clinicians regarding their perceptions of Teach-back. The study was reviewed and approved by the Institutional Review Board of Nemours; informed consent was obtained from clinicians and parents, and assent was obtained from children seven years and older. We report on a cross-sectional analysis of all audio-taped encounters completed over the course of the study. Then, we report on the qualitative analysis of the focus group data.

Measures

To measure patient-centered communication and affective tone of visit communications, audio-recordings were coded using RIAS, a system for characterizing medical dialogue with well-established reliability and predictive validity.¹¹ The unit of analysis is a complete thought, whether a single word, simple sentence, or a clause in a complex sentence. Statements are coded directly from recordings without transcription and assigned to one of 37 mutually exclusive code categories. Specification of the speaker (clinician/parent/child) and target (clinician/parent/child) is embedded in each code to distinguish between the six possible directions of communication. RIAS code categories address *bio-medically focused speech* (i.e., information giving, question asking, and counseling about medical symptoms/history, treatment/ medication, tests/procedures, and appointments), *psychosocial/lifestyle exchange* (i.e., living situation, familial relations, and functions related to daily living or emotional states like stress, depression/anxiety, lifestyle/habits), *partnering/activation categories* (i.e., active cues of interest, asking for patient opinion, paraphrase and interpretation, and checking understanding), *socio-emotional categories* (i.e., rapport building, social exchanges, statements indicating emotional responsiveness [i.e., empathy, reassurance, concerns]), and *procedural categories* (i.e., instructions, directions/orientations, agenda setting).

Informed by the published literature,^{12–17} we operationalized patient-centered communication as a ratio reflecting the psychosocial, patient activation and rapport building aspects of the visit dialogue relative to the total dialogue. As in other RIAS studies, the numerator consists of patient and companion (parent) psychosocial/lifestyle statements, all patient/parent questions and emotional statements, and clinician psychosocial/ lifestyle information/questions and activation/partnership statements. The denominator of the ratio

includes the sum of all statements made by all participants (clinician, child, parent) during the visit. (Table 1)

To measure affective tone, each speaker was rated on eight affective domains using a five-point intensity scale ranging from low to high. The domains reflect positive (e.g., engagement and warmth) or negative (e.g., anger or anxiety) tonal qualities that are largely independent of literal verbal content of the dialogue. A random sample of five visit recordings were double coded for reliability; Pearson correlation coefficients averaged greater than .98 (range .92–1.0) over 34 clinician communication codes and .98 (range .87–1.0) over 21 parent codes. Consistency in global affect ratings was determined as agreement within one scale point and these averaged 99% (range 80–100). Affective tone was coded in four directions: provider to parent, provider to child, parent to provider, and parent to child. Factor analysis using all coded variables resulted in 2 emergent factors: a positive global affect scale (15 variables, scale range 15–75; $\alpha=0.93$; scale mean=57 [SD=6]) and a negative global affect scale (four variables, scale range 4–20; $\alpha=0.88$; scale mean=5 [SD=2]). [Table 1] These two factors explained 47% of the variability in the global affect ratings. Variables that did not contribute to the two factors primarily had very low frequency (parent to child communication) or very little variability (for example, providers were never judged by the coders to demonstrate anxiety or anger). We created a summary “positive affect” score and a “negative affect” score ranging from 1–5, by dividing each scale by its number of variables (15 and four, respectively).

Main Independent Variables: Teach-back Loop Score and Health Literacy

Because there are no validated measures of the occurrence of Teach-back, we created a Teach-back Loop Score (Figure 2) to measure the extent to which Teach-back occurred during the clinical encounter. The Loop Score codes the amount of effort that the clinician takes to ensure that the patient understands a particular medication instruction, or “close the loop.” For each item of instruction (dosing, route, frequency, indication), the loop score is coded as 0 (provider does not elicit Teach-back, or caretaker’s response to Teach-back prompt indicates lack of understanding, but physician makes no attempt to correct this lack of understanding), 1 (caretaker’s response to Teach-back prompt indicates lack of understanding, and the physician tries to correct the misunderstanding of the instruction, but does not elicit Teach-back again), and 2 (physician corrects the misunderstanding about the instruction, elicits Teach-back—however many rounds it takes—and the final elicited Teach-back is correct. loop is closed.). The Loop Score ranges from 0 (no attempts to obtain a correct Teach-back for any part of the instructions) to 8 (loop is closed for each of the four items of instruction). Two independent raters coded the audiotapes for Teach-back based on the instructions given on how to use the prescribed controller medication; inter-rater reliability (kappa) for the Loop Score was moderate at $\alpha=0.65$.

We used the Newest Vital Sign (NVS) to measure parental health literacy. Parents were shown the test prompt (a nutrition label) and asked six verbally administered questions that test reading comprehension and numeracy; all questions were scored equally and summed for a total score (0–6). The NVS has high internal consistency (Cronbach’s $\alpha=0.76$) and good criterion validity ($r=0.59$, $p<0.001$) with the Test of Functional Health Literacy.¹⁸

Measured Covariates

The research assistant used a structured guide to interview parents about: child age, gender, race/ethnicity, and insurance and caretaker age, gender, and number of years of school completed.

Qualitative Data

Focus groups with caretakers—Using purposive sampling, we selected 10 participants from the post-training phase who we knew had experienced at least “some Teach-back” (based on the audiotapes), and 10 participants from the pre-training phase who we believed (based on their study interactions) would participate well in a group discussion. We invited parents from each phase to participate in 2 separate focus groups about doctor-patient communication. The goal of each focus group was to be open to emerging themes regarding doctor-patient communication, but to also obtain specific feedback on the Teach-back technique. The following prompts were used with both groups: “In general, what would you like from your doctor/clinic when you visit? What can a doctor do to make you feel good at your appointment?” For the post-training group, we additionally asked: “How did you feel about the teach-back technique? Do you ever feel insulted when a doctor uses the teach-back technique with you” For the pre-training group, we explained the Teach-back technique, and then asked “what do you think about the Teach-back method”?

Focus group with clinicians—One focus group was conducted with the four clinicians at the end of study to elicit feedback on Teach-back. Prompts included: “What are some thoughts on use of the Teach-back technique?”, “what are some aspects that you did not like?”, “what suggestions do you have to improve the method?”

Analyses

We used descriptive statistics to characterize the study population. The NVS score was dichotomized at adequate (4–6) vs. inadequate literacy (<4) as defined by its authors.¹⁸ Teach-back Loop scores from two independent raters were averaged for all analyses; we dichotomized the average score to “Some Teach-back” (2 or higher) vs. “No/minimal Teach-back” (0–1). We grouped the Patient-Centered Communication score into four quarters (1=lowest patient-centeredness, 4=highest). Because the scores were highly skewed, we dichotomized the summary positive affect score at “high positive affect” (score 4–5) vs. low positive affect (1–3); similarly, we dichotomized the summary negative affect score at “no negative affect” (score=1) vs. “any negative affect (>1).

We used chi-square to test the change in performance of Teach-back pre-post clinician training. We used chi-square analyses to compare the categorized patient centered communication score and categorized affect scores by Some vs. No/minimal Teach-back, and by parental health literacy (adequate/inadequate). Then, we performed ordinal logistic regression to predict patient centered communication (after checking the assumption of proportional odds) and logistic regression to predict negative global affect by the “Some Teach-back” variable, adjusted for parent health literacy, child age, parent age, and clustering by provider. We report the adjusted odds ratios (AOR) with 95% confidence intervals (CI), and overall pseudo R^2 for the regression models. Focus group data were

professionally transcribed and coded using NVIVO Software 8.0 for emerging themes by two independent coders (AB and IS). Emergent themes were compared, discussed, and recoded and categorized until consensus was reached regarding the conceptual categories captured in the data. A final review grouped similar and divergent concepts for caretakers and clinicians.

RESULTS

We analyzed encounters with 44 children (mean age 9; range 6–13 years); 29 (66%) were male; 98% were African-American and 93% were Medicaid insured. The accompanying caregiver was female 100% of the time with mean age 36 (range 26–74 years). Of 37 parents who provided information, 10 (27%) had less than high school education, 12 (32%) had a high school diploma/GED only, and 15 (41%) had some post-secondary education. Of 35 parents who completed the NVS, 11 (31%) had adequate health literacy. The Teach-back Loop score ranged from 0 to 8, and 17/44 (39%) encounters had “Some Teach-back.” [Table 2] Training did not significantly increase “Some Teach-back” (pre: 7/22 vs. post: 10/22; $p=0.35$).

Clinician talk occupied most of the visit dialogue (61%, $SD=7$); followed by parent talk (31%, $SD=10$) and child talk (8%, $SD=7$). The mean patient-centered communication score was 0.20 ($SD=0.10$), meaning that about 20% of the visit dialogue was patient-centered. The highest quartile for patient-centered communication had a mean score of 0.33 ($SD=0.06$). Ratings for global positive affect were very high, with 39 (89%) of visits scored as having a high positive affect; 14 (32%) of visits were coded with any negative global affect.

In bivariate analyses, Teach-back was not associated with global affect, but was associated with higher patient centered communication ($p=0.01$). (Figure 3) Parental health literacy was not associated with patient-centered communication or affect. When adjusted for NVS, parent age, and child age, “Some Teach-back” significantly increased the adjusted odds of the next higher category of patient centered communication [proportional AOR (95% CI)=4.97 (4.47–5.53); pseudo $R^2=7\%$]. Some Teach-back also increased the odds of negative global affect [AOR (95% CI)=5.39 (1.68–17.31); pseudo $R^2=15\%$].

Focus group data from a total of 12 parents (7 pre-training; 5 post-training) and four clinicians are displayed in Table 3. Themes common to both clinicians and parents were that Teach-back was effective, should be done in a way that avoids discomfort, should be used with children, and should also be done by nurses. Themes specific to clinicians included concerns that Teach-back was time consuming and was not hard-wired. Themes specific to parents included that Teach-back demonstrates caring by the provider and that parents should ask for Teach-back.

DISCUSSION AND CONCLUSIONS

DISCUSSION

In accordance with our hypotheses, we found that greater performance of Teach-back was associated with more patient-centered communication. In adjusted analysis, Teach-back was

also associated with an increase in the display of negative affect by parents toward providers. Focus group data confirmed that while both parents and clinicians reported the technique was effective, clinician discomfort and time pressures limited implementation. Similar to a recent study, clinicians in our study reported that they would selectively use Teach-back with patients whom they felt would benefit the most.¹⁹

We found no previous studies of the relationship between Teach-back and the quality of physician-patient communication; hence the new findings have important implications for both research and practice. While Teach-back also increased parental display of “negative affect”, it is not clear that this is a bad thing. One might expect that when there is iterative communication back and forth as occurs in any patient-centered communication, that there will be increased emotion and hence display of “negative affect.” On the other hand, as suggested by the clinician focus groups, the relationship between Teach-back and negative affect in this study may reflect poor provider technique. Research to elucidate the mechanisms of the relationship between Teach-back and display of negative affect could inform integration of Teach-back more routinely in primary care practice. Training interventions to teach the technique to practitioners should include explicit strategies to anticipate and manage negative affect that could occur.

Limitations of this study include the single site and small sample. Although clinicians received training delivered as a three-week series of interactive, reflective sessions reinforced by the AMA foundation’s instructional materials,² performance of Teach-back did not increase significantly. We suggest that future training interventions also test not only clinician knowledge and attitudes toward Teach-back, but also performance as measured by the Loop Score. Second, the patient population was uniformly of lower socioeconomic status (89% Medicaid recipients), and not ethnically diverse (95% African-American); Teach-back may perform differently in populations with different socio-demographics. The sample size may have limited the ability to detect differences in communication by health literacy. The measurement of patient-centered communication in this study may have limitations as well. The recent Patient-centered Outcomes Research Institute priorities suggest that measurement of patient-centered care should include more about communication of treatment risks and choices.²⁰ Because we were concerned about collinearity with measurement of Teach-back, “giving medical information” statements were not included in our patient-centered communication measure; hence, we theoretically could have missed some parts of communication that included giving treatment choices. However, such discussions did not occur in these very-focused encounters where providers spent the “information giving” primarily on teaching patients to use their medicines and assessing their understanding. Finally, we acknowledge that the patient-centeredness ratio differed in the composition of the denominator from previous RIAS studies in exclusion of medical information exchange; however, the adaptation was acceptable to the study team, who are experts in health literacy, pediatric primary care, and communication measurement. While the measure used in this study does have content and construct validity, there is no single operationalization of “patient-centeredness” described in the literature. Future research will be needed to measure the relationship between this patient-centeredness score and possible correlates (for example, shared-decision making and treatment satisfaction).

Since clinicians and patients in this study knew they were being audio-recorded, there was a possibility this knowledge may have affected communication in some way. The issue of performance bias in response to recordings has been addressed in several studies^{21–23} and all have concluded that the impact is minimal. In one study of physicians who were and were not informed that recordings were being made, no significant differences were found in length of visit, or in the number or nature of problems discussed.²¹ Even if the recorded visits captured “best behavior,” the substantial variation in practice observed suggests that systematic bias is unlikely.

As the first study that has attempted to formally measure performance of Teach-back, this study makes an important contribution to the field. We have created a tool that can be used and validated in other settings/populations. The Teach-back Loop Score was developed using a modified Delphi approach over a series of discussions amongst national experts in health literacy and communication. The Loop Score was refined by the group after initial field-testing, and consensus was reached that the score has high construct validity. Moderate inter-rater reliability for the Loop Score ($\alpha=0.65$) was found when applied to our study sample; however the relatively low prevalence of Teach-back in our study sample may have influenced that value. We suspect that higher inter-rater reliability may be achieved when Teach-back is more prevalent. The relationship between the Teach-back Loop Score and the patient-centeredness score in this study provides preliminary data regarding concurrent validity. The health literacy field would benefit from future validation of the Teach-back Loop Score across a diverse sample of clinical encounters. We suggest that future studies test concurrent and predictive validity with measures such as patient/caretaker understanding of medication instructions, self-efficacy, and adherence. The focus group data suggest that perhaps a measure of “Teach-back skill” could also be useful—measuring the tone/manner in which Teach-back is implemented.

The combination of objective observational data with qualitative data from clinicians and patients strengthens our understanding of how Teach-back influences the clinical encounter, and suggests both new areas for research as well as important implications for clinical practice, patient-centered communication, and medical education. We used focus groups rather than individual in-depth interviews because we believed that the group discussion would be valuable for understanding the range of reactions to a very specific question—perceptions of the Teach-back technique. We believed that in this small sample of patients, individuals may have had varying experiences of the technique (one clinician may have used it more effectively than another, for example), so we wanted to capture a conversation where the group could share their experiences. Such a discussion would not have been possible with individual interviews. On the other hand, we acknowledge that group dynamics may have biased the results toward “social desirability” if respondents felt a need to fit in with what others were saying. Unanimously, parents reported that use of Teach-back by clinicians was not insulting and demonstrated provider caring. We speculate that the engaging parents in clinician training may help promote the technique. The qualitative data recommending that clinicians direct Teach-back to the child is intriguing. While it seems natural for the pediatrician to address the child patient, children in our sample participated in only 8% of the total visit dialogue. Future research may evaluate the impact of targeting Teach-back to

the child patient, and its impact on clinician- parent-child communication, as well as impact on child health outcomes.

Quantitative and qualitative data from this study point to a positive relationship between Teach-back and patient-centered communication, suggesting the technique has high potential to strengthen the patient-centered medical home. While the data suggest the technique also increases negative affect, we assert that such tension is likely necessary to advance true conversation, interactivity, and shared understanding between clinicians and patients/caretakers.

CONCLUSION

Teach-back was associated with more patient-centered communication, and an increase in the display of negative affect by parents toward providers. Teach-back was viewed by parents and clinicians as a useful and important strategy; clinician training to enhance skill and reduce discomfort in using Teach-back will be important in expanding its use.

Acknowledgments

This research was funded by NIH R21 HL091821 and also received support from an Institutional Development Award (IDeA) from the National Institute of General Medical Sciences of the National Institutes of Health under grant number U54-GM104941 (PI: Binder-Macleod). We are grateful to the patients, staff, and clinicians of Nemours duPont Pediatrics at Jessup Street.

This research received support from NIH R21 HL091821 as well as an Institutional Development Award (IDeA) from the National Institute of General Medical Sciences of the National Institutes of Health under grant number U54-GM104941 (PI: Binder-Macleod)

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PRACTICE IMPLICATIONS

Implementation of Teach-back as a standard process, used not only by clinicians but by nurses, may increase patient-centered communication. The Health Literacy Universal Precautions²⁴ and Always Use Teach-back!²⁵ tool-kits may be particularly helpful for multidisciplinary training to practices, including discussion of smooth practice flow. Teach-back training should focus on students, residents, and faculty, and should include strategies managing the possibility of negative affect.

HIGHLIGHTS

- We have created a new tool to measure Teach-back
- Teach-back was associated with more patient-centered communication
- Teach-back was associated with increased display of negative affect by parents
- Implications for clinical practice and medical education are discussed

Figure 1.

Theoretical model for the contribution of health literacy and teach-back to the pediatric clinical encounter. Nested in the Chronic Care Model, we propose that the Teach-back technique is a skill of the prepared, proactive practice team, while health literacy is a skill of the informed, activated patient/parent. The combined result of these skills would be “productive interactions.”

TEACH-BACK LOOP SCORE				Score
Dosing	0	1	2	
Route	0	1	2	
Frequency	0	1	2	
Indication	0	1	2	
<i>*Scoring for Effort to Close the Loop</i>				
(0) Does not elicit Teach-back, or Caretaker's response to the Teach-back prompt indicates lack of understanding, but physician makes no attempt to correct it.				
(1) Caretaker's response to the Teach-back prompt indicates lack of understanding, and the physician tries to correct the misunderstanding of the instruction, but does not elicit Teach-back again.				
(2) Physician corrects the misunderstanding about the instruction, elicits Teach-back (however many rounds it takes), and the final elicited Teach-back is correct (Loop is Closed).				
Total Score (ranges from 0-8)				

Figure 2. Teach-back Loop Score

The Teach-back Loop Score measures the extent to which Teach-back occurred during the clinical encounter. The Loop Score codes the amount of effort that the clinician takes to ensure that the patient understands a particular medication instruction, or “close the loop.” For each item of instruction (dosing, route, frequency, indication), the loop score is coded as 0 (provider does not elicit Teach-back, or caretaker's response to Teach-back prompt indicates lack of understanding, but physician makes no attempt to correct this lack of understanding), 1 (caretaker's response to Teach-back prompt indicates lack of understanding, and the physician tries to correct the misunderstanding of the instruction, but does not elicit Teach-back again), and 2 (physician corrects the misunderstanding about the instruction, elicits Teach-back— however many rounds it takes – and the final elicited Teach-back is correct. loop is closed.). The Loop Score ranges from 0 (no attempts to obtain a correct Teach-back for any part of the instructions) to 8 (loop is closed for each of the four items of instruction).

Figure 3. Patient Centered Communication with Some Teach-back vs. No/Minimal Teach-back use

Chi-square test used to compare the categorized patient-centered communication score for visits with “some teach-back” vs. “no/minimal teach-back”. Y-axis represents the % of encounters.

Table 1

RIAS Coding

Numerator of Patient Centeredness Score ¹	
Lifestyle/Psychosocial Conversation	
Data Gathering/Question asking	Clinician asking parent/child Child/parent asking clinician
Information-giving	Clinician educating/counseling the parent/child Parent/child giving information to clinician
Patient activation/engagement	
Asking for opinion Asking for permission	Clinician asks parent/child
Asking for reassurance	Clinician asks parent/child Child/parent asks clinician
Asking for service	Child/parent asks clinician
Rapport building/emotional	
Express empathy Legitimization Concern/worry Reassures/shows optimism	Clinician to child/parent Parent/child to clinician
Partnership Self disclosure	Clinician to child/parent
Components of Overall Global Affect Scales	
Overall Positive Affect ² Interest/Attentiveness* Friendliness/warmth* Responsiveness/engagement* Sympathetic/empathetic* Interactivity [¥] Respectfulness [£]	Overall Negative Affect ³ Anger/irritation Anxiety/nervousness (doctor to patient) Emotional distress/upset Depression/sadness

¹The denominator of the Patient Centeredness Score was the sum of all statements made by all participants (clinician, child, parent);

²Results of factor analysis of 32 global affect ratings resulted in selection of **15** variables to create the Overall Positive Affect Scale (reliability coefficient=0.95). **Variables included in the scale were for affective tone for: *(clinician to parent, clinician to child, parent to clinician); ¥(clinician to parent); £(clinician to parent, clinician to child);**

³The four variables comprising the Overall Negative Affect scale (reliability coefficient=0.88) were all for “parent to provider” utterances.

Table 2

Visit Characteristics of Pediatric Primary Care Encounters (n=44)

Teach-back Loop Score, n (%)	
0	21 (48%)
1	6 (14%)
2	2 (4.5%)
3	3 (7%)
4	4 (9%)
5	0 (0%)
6	4 (9%)
7	2 (4.5%)
8	2 (4.5%)
Some Teach-back, score 2–8 (%)	17 (39%)
No/minimal Teach-back, score 0–1 (%)	27 (61%)
Patient Centered Communication Score, mean (SD)	
Q1	0.08 (0.03)
Q2	0.17 (0.03)
Q3	0.22 (0.02)
Q4	0.33 (0.06)
Global positive affect, n (%)	
1–2	0%
3	5 (11%)
4	36 (82%)
5	3 (7%)
<i>High positive affect</i>	39 (89%)
<i>Low positive affect</i>	5 (11%)
Global negative affect, n (%)	
1 (<i>No negative affect</i>)	30 (68%)
1.1–2	13 (30%)
3	0 (0%)
4	1 (2%)
5	0 (0%)
<i>Any negative affect</i>	14 (32%)

Table 3**Focus Group Results: Clinician and Parent Perceptions of Teach-back Implementation During Asthma-related Primary Care Encounters**

Clinicians	Parents
IT IS EFFECTIVE	
<p>It's very effective ...opportunity to ask other questions if they weren't clear as to what we said</p> <p>I like it you know I think it's a great idea...</p> <p>...but after I did it a few times there were some patients who didn't really give information back to me correctly...but there were quite a few who did...But I was surprised that you think you're explaining things one way and they may not perceive the same way.</p>	<p>before we left the office he made sure that I knew what time to give it to him...made sure I knew every single thing...</p> <p>I like the help if I'm not doing it right so then I understand</p> <p>In the professional world we call it reinforced learning. Because you are reinforcing the statement instead of repeating it. She makes sure before you leave the room you know what you doing with whatever medication she give you for your child to take.</p>
IT NEEDS TO BE DONE RIGHT TO AVOID DISCOMFORT	
<p>It felt like I was questioning their intelligence--so I felt uncomfortable doing it.</p> <p>I know sometimes I can talk a little fast, and sometimes you know what I think is understandable isn't as understandable, so if you don't mind giving it back to make sure I said it correctly...I always put it back on me...</p> <p>I think there are some ways to kind of educate them like how it would benefit them also. Teach it to residents.</p> <p>You can teach it, but if they don't see it in use by those that they mentor, it's not going to be done...</p> <p>I think it's easier to do the teach back with those who you know and if you know the families well.</p>	<p>If they (doctors) can ask them or say "this is what we are required to do."</p> <p>(say)We just need you to understand this is something we have to do so if I can just go over it with you and if you don't mind if you could please just repeat it make sure we have a thorough understanding. And this is the reason why so many people have walked out of here not knowing and they made a mistake, gotten the wrong doses...</p> <p>I think it's important that you explain to them the importance in the past...so many people ...had situations because they did not have a thorough understanding...go over it just like a pharmacist.</p> <p>Only if they do it right because you know some doctors...the way they say it, you just taking it as them being ignorant to you.</p> <p>It's not just teach back you know, it's how...</p>
SHOULD BE DIRECTED TO CHILDREN	
<p>...the parents will be the first one to say "he does it, you know ask him"...But they are given that accountability at a very early age so I mean I'm not going to change moms way so do I gear it more toward the 7 year old or to the mom...</p>	<p>It's a good thing to do to talk to the child too, to see if they understand what they talking about.</p> <p>Sometimes you forget and little kids sure won't. They won't forget at all. They have a voice.</p> <p>because one time I didn't get something right, but my son heard it, so he had repeated what the doctor had said...he was like "no mom because this is this..."</p>
NURSES SHOULD DO IT	
<p>Possibly nurses trained or people who do it if we are behind and we don't have the time to put in, if we have nurses who can use their education and do it as well.</p> <p>And sometimes a nurse might be a little less threatening to a parent...so, if they say "I want to make sure the physician explained everything well, can you let me know what he said... they might be more willing to say "you know I didn't quite get it, he was talking a little fast today."</p>	<p>The nurses and the doctors here, they mesh well together. So if the doctor is not available to do it the nurses are, so and they have it so together here that it's not like you're going to miss your doctor.</p> <p>The nurse will be coming back in to go over everything if there's anything...</p> <p>The nurse should also give me the information, so that's a double check.</p>
TIME CONSUMING	SHOWS CARING
<p>I don't know how to incorporate it and still feel like I can move on to the next person and give them the time they need.</p>	<p>Even if they ask you more than once "do you understand what I am saying" at least they care...you know for you to know exactly what you need to do when you walk out this office.</p>

Clinicians	Parents
IT IS EFFECTIVE	
<p>...and if they say it wrong, can I just correct them and move on because...</p> <p>If you can have the resources to do that (nurses to do teach-back) ...because they (nurses) are trying to move people back...</p>	<p>I feel wonderful that my doctor wants to know that I know everything that I'm supposed to do when I walk up out of here, because if I don't something may happen to my child.</p>
NOT HARDWIRED	PARENTS SHOULD ASK FOR IT
<p>I've been practicing for 20 years, it's not what I've done, so it's not hard-wired...</p> <p>I don't use it too often and when I do it has to be a real just very forced, because it's got to be something that you do...sort of like saying "how you doing" to everybody you see; at first it feels forced, but eventually it just becomes part of your...so for me it feels forced because I'm just not utilizing it enough.</p> <p>...most of us have been practicing for several years so we have our way of doing asthma, so to make this...change, again it's going to special people.</p> <p>Probably I've focused on more people who have been having trouble and I think moving on compliance so probably selecting it more when I've used it.</p>	<p>Some parents...they may feel intimidated by the doctor...sometimes you think that they are so highly intelligent in terms of what their position... but it's up to you to say "I need to know this" so I can understand this. I need you to walk me through this and they need to take time and walk me through it...</p>