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Parent-Centered Perspectives on a Validated Asthma Questionnaire in the Emergency Department

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ABSTRACT

Objective: Although national asthma guidelines recommend use of validated questionnaires to improve asthma care, little is known about the extent to which these questionnaires are patient-centered. This qualitative study evaluated parent perceptions of a validated asthma questionnaire.

Methods: We administered the Pediatric Asthma Control and Communication Instrument for the Emergency Department (PACCI-ED) to parents of children 2-17 years old presenting to a large urban pediatric ED for asthma care, and assessed their perceptions of the tool's utility and acceptability via a structured interview. Responses were recorded, transcribed, and analyzed using a phenomenological approach..

Results: Eighty-three parents participated. Qualitative analysis revealed 2 major themes (with 5 subthemes). The first major theme (and 3 subthemes) was that the PACCI-ED facilitated communication with the healthcare team and caregivers: improving communication a) with ED providers; b) in other settings such as schools; and c) in the primary care setting where the relationship with primary care providers was felt to be variable. The second major theme (and 2 subthemes) was that the PACCI-ED increased parents' capacity to manage their child's asthma: by helping parents understand a) what symptoms were related to asthma; and b) how those symptoms might change over time.

Conclusion: Parents perceive that the PACCI-ED is acceptable and useful for facilitating communication in the ED and other healthcare settings, and for building parent capacity to track and manage their child's asthma. A validated structured asthma questionnaire in the ED may facilitate patient-centered asthma care.

What's New: This is the first study to use a qualitative patient-centered approach to evaluate the potential value and role of a validated asthma questionnaire. Parents perceived use of the tool could facilitate asthma management across healthcare, home, and school settings.

INTRODUCTION

Validated asthma assessment questionnaires to accurately identify and classify patients with uncontrolled asthma are recommended in NIH asthma guidelines.¹ While they were largely developed as a tool to aid clinicians in diseases assessment and management, understanding patient perspectives is a necessary element to delivering patient-centered care. However, there are no studies that assess patient or parental perspectives on the use of validated asthma questionnaires. Given the promotion of such tools in national and international asthma guidelines, it would be particularly helpful to understand whether validated questionnaires are acceptable to patients and are perceived to add value to their care.

Patient-centered perspectives on tools designed to improve care and outcomes may be particularly important for populations that routinely receive poor quality asthma care and suffer greater asthma burden. For example, ethnic minority children and those from low-income households are nearly twice as likely to present for emergency department (ED) asthma care,² despite the fact that more than 90% report having a primary care provider (PCP).³ Although recommended, studies suggest that validated asthma questionnaires are often not used.^{4,5} One barrier to their widespread use is that their value and usefulness from a patient perspective is unknown. This may be particularly important in busy settings such as the ED, where clinicians face conflicting priorities and time pressures which might be perceived as barriers to use.⁶ If such questionnaires are found to be highly valued by patients, and if their use is noted to improve care in parent and patient-centered outcomes, both during the ED visit and beyond, these questionnaires might become more accepted by ED providers and more standard within the ED setting.

As part of an intervention study to increase ED provider prescribing rates of inhaled

corticosteroids, we sought to identify parent perspectives on the acceptability and feasibility of a validated asthma questionnaire, the Pediatric Asthma Control and Communication Instrument-ED version (PACCI-ED). While interviews were set in the ED, we assessed parents' general perspectives regarding use of the PACCI-ED in multiple potential care settings. The *PACCI-ED* is a validated, 12-item parent-completed questionnaire designed to determine a child's asthma control. It is written at a 5th grade reading level and validated in English and Spanish. It takes about 2 minutes to complete and 1 minute to score. The PACCI-ED measures 5 domains of asthma: current control, trajectory, risk, medication adherence, and burden.^{7,8} The assessments are based on parental report of the child's asthma both within the past two weeks and the prior 12 months. It determines both sub-acute control (previous 2 weeks) and chronic level of asthma control (previous 12 months).⁹ Sub-acute asthma control is scored into 4 categories: controlled/intermittent, partly controlled/mild persistent, uncontrolled/moderate persistent, poorly controlled/severe persistent.¹⁰ Chronic asthma control is scored into 5 categories: controlled, partly controlled, mildly uncontrolled, moderately uncontrolled, and severely uncontrolled.¹⁰ The scoring is color-coded to allow for rapid scoring and visualization. Since little is known about parent perspectives, we used qualitative methods to identify key themes and issues.

METHODS

Participants

Participants were parents of children presenting to the ED at a large urban tertiary children's hospital ED for respiratory complaints from August 2017 to January 2018 who were recruited as part of a larger study focused on inhaled corticosteroid prescription in the ED

setting. Parents or legal guardians were eligible for participation if they spoke English or Spanish, were 18 years or older, if their child was between the ages of 2 -17 years old, and if the child screened positive using a validated asthma case-detection survey.¹¹ We excluded parents who were Non-English or Non-Spanish speaking and patients currently using oxygen at home, utilizing a mechanical ventilator, those who had a tracheostomy, history of cystic fibrosis, lung cancer, bronchopulmonary dysplasia, cardiac complications, or neurological disorders. These exclusions were developed a priori in order to focus on the population of children who had straightforward childhood asthma.

Recruitment Procedure

To identify potential study participants, bilingual research assistants (RAs) reviewed an electronic triage board for respiratory-related chief complaints such as breathing difficulty, coughing, wheezing, and respiratory distress. Potential parent participants were then briefed on the study goals and procedure in a private ED room setting. Written consent was obtained from parents and oral assent for children 7 years of age and older.

Survey Administration

As part of the study procedures, parents completed the PACCI-ED, a survey to collect sociodemographic and clinical information, and a health literacy assessment (Table 1). Health literacy was determined using the SAHL-S&E, an 18-item instrument for Spanish and English speakers.¹² Participants had the option to complete these either as an interview with the RA or on their own as a paper survey based on their preference. Both options were available in English and Spanish. The PACCI-ED was administered at baseline prior to starting the inhaled

corticosteroid intervention.

Parental Perceptions of Validated Survey

Following survey completion, parents were invited to participate in a brief interview regarding their perceptions of the *PACCI-ED*. This process took approximately 10 to 15 minutes. Using a structured interview guide, the interview explored perceived acceptability and utility of the *PACCI-ED* in multiple care settings, including both traditional health care found in the ED and non-healthcare settings like school. Interviews with parents who agreed to be audio-recorded were recorded and transcribed and written notes were taken by the interviewer for parents who preferred not to be audio-recorded. All study procedures were reviewed and approved by the UCLA and CHLA Institutional Review Boards.

ANALYSIS

Transcripts and interview notes were reviewed by the study team. The team discussed initial themes and used consensus to develop the codebook. Two independent members of the study team then coded several transcripts and notes. Spanish interviews and notes were coded and analyzed in Spanish. Coders met to reach consensus and finalize the codebook, which guided the final coding process. Kappa scores were calculated for each individual code to measure inter-rater reliability between coders. Iterative rounds of coding and team discussions to resolve disagreement continued until a kappa greater than 0.8 was achieved for all major codes. Since the study had dual purposes and hence enrolled a larger sample than was needed for this qualitative component, we continued to interview parents even beyond thematic saturation. All analyses were conducted by Dedoose, a qualitative software program.¹³

RESULTS

Sociodemographic and Clinical Characteristics

Eighty-three parents completed interviews, representing 92% of those invited to participate. Those who declined to participate were demographically similar to participants with the exception of being less likely to identify as Latinx (29% vs. 74%). Most participants were women, Latinx, born in the United States, whose primary language was English, and had a high school education or less (Table 1). Approximately, 61% completed the PACCI-ED via interview. The mean age of child participants was 7 years (range, 2 – 17), the majority of whom were publically insured, did not report being on a controller medication, and had required an oral corticosteroid or another ED visit for asthma in the prior 12 months. Nearly 90% of children had uncontrolled asthma (based on PACCI-ED control score), while almost two-thirds of children had moderate or severe persistent asthma. 39 parents agreed to be audio-recorded, while 44 parents preferred notes be taken during interview.

Parent Perceptions of the PACCI-ED

Overall, parents found the PACCI-ED to be feasible, acceptable, and useful. Qualitative analysis of interview transcripts and notes revealed two major themes related to parent perceptions of the utility of the PACCI-ED: 1) facilitating communication across settings and caregivers; 2) building parent capacity to manage asthma. There were also five subthemes related to communication, relationships, education and chronicity, and two minor themes related to asthma labeling discomfort and asthma triggers emerged. These findings are described in further detail below and in Table 2.

Theme 1: Facilitated Communication across Settings and Providers

Parents perceived the PACCI-ED to be effective and thorough in facilitating communication with ED providers at time of the visit and across other settings after the ED visit, including schools/childcare settings and with primary care providers.

Subtheme: Facilitated Communication in ED

All parents reported that the PACCI-ED facilitated communication with ED providers by providing a complete picture of their child's asthma, without relying on busy ED providers to remember to ask detailed questions that elicit similar information. A parent commented, "*Por preguntas que tiene la encuesta que están -- que, a veces, otras veces, no se los hacen en el hospital*" which translates to "For the questions that the survey has - that, sometimes, other times, they are not asked in the hospital." Parents felt this provided history and context to their ED visit, allowing ED providers to better understand what goes on at home. They thought this information would be important to ED providers' decision-making and management. One parent noted that providers "can exactly ask me for symptoms throughout the week," allowing the parent to expand on the importance of child's symptoms at home that lead up to ED visit rather than only "focus[ing] on right now." Parents also reported that the PACCI-ED prompted parents to ask questions about their child's asthma to the ED provider that they would not have asked otherwise or did not know were important to their child's care.

Subtheme: Communication with School and Daycare

Most parents' perceived benefit in use of the PACCI-ED by school nurses, school teachers, and childcare providers to understand their child's asthma severity, make more accurate assessments of their child's health, and be better prepared to manage acute asthma exacerbations.

Parents expressed how the use of the PACCI-ED in these settings could also reveal important differences in symptoms across settings, potentially revealing, for example, an environmental trigger. A parent shared her perceived utility of the PACCI-ED in reference to school being when, “[my son] had four episodes...there’s a lot of exercise or there might be gym, or there might be the weather that could make him kick in the asthma attacks.” Although most parents expressed that the school or daycare could benefit from enhanced awareness of common asthma triggers or what to do in emergency situations, several parents noted that this may be logistically challenging and unrealistic given the competing demands of school nurses and staff.

Subtheme: PCP Relationship

Parent perceptions regarding the utility of the PACCI-ED to facilitate communication with primary care providers (PCPs) differed by parents’ level of satisfaction with their child’s current PCP. Several parents noted that the PACCI-ED may be useful in updating their PCP regarding their child’s health status or in the event that they change pediatricians. For example, one parent stated, “using the PACCI would help my child’s primary care [doctor] better understand the problems my child is having.” In contrast, some parents felt they already had excellent communication with their child’s pediatrician or were satisfied with existing communication strategies, and their PCP was already well aware of the child’s asthma. Another parent expressed, “...he’s our regular pediatrician, so he pretty much knows that she’ll go through these different spells at different times.”

Theme 2: Building Parent Capacity in Managing Child’s Asthma

The second major theme that emerged was that the PACCI-ED increased parents’ perceived capacity to manage their child’s asthma by helping them understand what symptoms

were related to the condition, how they might change over time, and whether any asthma-care related changes might be indicated. This perceived benefit was related to the PACCI-ED being seen as a tool for parent education and as a strategy to track changes in asthma symptoms and management over time for this chronic condition.

Subtheme: Education Tool

Parents reported that the PACCI-ED increased their awareness of their child's health and asthma status and that this would be useful following the ED encounter. Some parents narrated that prior to completing the PACCI-ED they had not learned which symptoms were related to their child's asthma or might be signs that their child's asthma was poorly controlled. For instance, one parent recalled, "I wish I would have had this in the very beginning, I would have really understood." Parents felt the PACCI-ED served as a reflective tool that helped them understand both their child's current symptoms and what to look for in the future to assess whether their child was improving or might need to seek additional care. A parent expressed, "*Pues yo pienso que es bueno que le expliquen a uno más detenidamente, cuando llega el médico, sobre cómo es el asma, qué es el asma, cómo ayudarlos a poder respirar cuando les da un ataque y -- porque uno se asusta cuando uno no está acostumbrado a mirar que les falta el aire, uno dice, ¡uy! es el corazón, es esto y son los pulmones.*" which translates to "Well I think it's good to explain to one more carefully, when the doctor arrives, about how is asthma, what is asthma, how to help them breathe when they have an attack and - because one gets scared when we are not used to seeing that they lack air, one says, oh! it's the heart, it's this and it's the lungs."

Subtheme: Chronicity

Parents described how the process of completing the PACCI-ED increased their awareness of the consistency of their child's symptoms and perceived that it helped them recall

symptoms over time, which they felt would be helpful when communicating with healthcare providers. A parent indicated that the PACCI-ED, “made me actually think a little of how often this happens and it’s really amazing to see it on paper, you’re like oh my gosh, wow, you have to think back.” Many parents reported that it was helpful to be prompted to think of their child’s asthma over a specific time frame because it forced them to think beyond the day-to-day, urgent issues that otherwise consumed their attention. Some parents remarked that the PACCI-ED inspired them to keep track of the frequency and range of their child’s asthma symptoms moving forward.

Minor Theme: Asthma Labeling Discomfort

While most parents were comfortable answering the asthma questionnaire, a few participants resisted labeling their child as an asthma patient. In effect, these parents perceived the PACCI-ED was not appropriate for them and their child, and hence had limited utility for them, because they did not believe that their child had asthma.

Minor Theme: Asthma Triggers

A few parents questioned why specific asthma triggers were not addressed in the PACCI-ED. When asked how to improve the PACCI-ED, parents suggested asking about common asthma triggers such as home environment, weather conditions, changing seasons, physical activities, or allergens. For instance, a parent recounted an event that depicted the child’s allergies as a possible trigger to their asthma, “Well, because my son started off with an allergy symptom last week and the allergy symptoms kind of subsided, but the breathing or the asthma kind of took over.”

DISCUSSION

Parents perceived that the use of a validated asthma assessment tool increased their capacity to manage their child's asthma by helping them address gaps in their general asthma knowledge and identify changes in the frequency and range of asthma symptoms. In addition, parents perceived that the PACCI-ED facilitated communication with healthcare providers during ED visits and might further improve communication regarding a child's asthma with PCPs, schools, or daycares. Parents endorsed the use of the PACCI in a variety of settings and perceived value in collecting asthma specific information about their child's well-being in traditional medical settings and in outside settings.

This is the first study we are aware of to use a qualitative patient-centered approach to evaluate the potential value and role of a validated asthma questionnaire. Many validated asthma assessment questionnaires assess asthma control to aid clinicians' medical decision-making.¹⁴⁻¹⁶ However, there is limited research regarding parents' perceptions of questionnaire feasibility in clinical encounters. The PACCI-ED is designed to promote chronic asthma care and facilitate communication by improving the evaluation of asthma control, trajectory, parent-identified burden, and asthma medication adherence.⁷ This study addresses a gap in the literature by qualitatively assessing how parents experience the questionnaire. While this study focused specifically on the PACCI during an ED encounter, our findings reflect its perceived utility in the clinical context of an acute asthma exacerbation present in other settings.

Patient-centered care and outcomes have emerged as important components of efforts to improve health care quality while reducing health care costs.¹⁷⁻¹⁹ The patient-centered care model requires support, buy-in and agreement from both patients and providers. We propose that if asthma questionnaires are being developed to improve patient care and outcomes, there be

a patient-centered evaluation of such tools. This approach is consistent with NIH asthma guidelines' section on Education for a Partnership in Asthma Care, where health care providers are encouraged to develop an active partnership with the patient and family, and "identifying and addressing patient and family concerns about asthma and asthma treatment".¹ PACCI-ED use might help families achieve this goal.

Assessing parents' perceptions regarding a validated asthma questionnaire revealed an unanticipated finding: the PACCI-ED was perceived to improve parents' understanding of how to assess asthma morbidity and how to manage their child's asthma over time. Although the PACCI was designed as an asthma morbidity assessment tool for clinicians, parents perceived it as means to encourage communication between medical provider, family, and patient by prompting parents to provide information that could facilitate decision-making and management in the ED and non-ED settings. We anticipated that the PACCI-ED could facilitate communication with healthcare providers due to the nature of the questions; we did not expect that parents would perceive that the PACCI might improve their individual ability to provide asthma care for their children. Several parents did not label their child as having asthma or had not engaged in further communication to understand what an asthma diagnosis meant for their child's health. Future studies might explore whether parents, after using the PACCI-ED, are better able to keep track of their child's symptoms and identify additional care needs after an ED asthma encounter.

There were some limitations to the study. The transferability of this qualitative study is limited to the experiences of those interviewed, particularly since the sample was restricted to a single large urban pediatric ED with a high percentage of Latinx patient. However, our sample size was relatively large for a qualitative study, and includes participants from many of the sub-

groups seen for ED asthma care. Since the interview was conducted in the ED, this may have impacted the perceived acceptability and utility of the PACCI-ED. The RA administered the PACCI-ED and interviewed the parent, which may have led to social desirability bias. Parents' perspectives on acceptability and utility of one specific asthma tool were assessed; however, measured improvements, providers' perspectives, and perspectives of other asthma tools remain unknown. It is unknown whether the routine use of the PACCI in the ED setting or potential sharing with PCP, school, or childcare would have an effect on asthma care outcomes. Although parents perceived uses for the PACCI-ED outside of the ED setting, they did not experience its use in these locations. We did not formally test the readability and understandability of the PACCI-ED; however, most did not report finding the PACCI-ED confusing and few suggested changing the PACCI-ED when asked in during the structured interview. The majority of parents choose to self-administer the tool and were able to do so without difficulty. Lastly, although it is possible that some patients in the study did not have asthma, we expect a very low false positive rate in the asthma case-detection survey due to patients presenting to the ED with respiratory complaints and screening positive with a validated screening tool. We hypothesize that some parents resisted asthma labeling due to: 1) reluctance by primary care providers to assign an asthma diagnosis; 2) use of alternative terms for asthma that were misunderstood by parents/patients—e.g. reactive airway disease, bronchitis, wheezing associated respiratory illness and even bronchiolitis; or 3) genuine refusal by parents to accept this diagnosis.

Conclusion

Parents broadly endorse use of a validated asthma questionnaire in ED and non-ED settings as a means of providing patient-centered care and describe benefits for long-term asthma

care. This may be particularly important in settings caring for populations that routinely experience poor asthma care and outcomes. The implementation of the asthma morbidity questionnaire could help parents provide better care for their children.

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Table 1. Sociodemographic and clinical characteristics, N=83

Parent		n (%)
Female		77 (95)
Latinx		58 (74)
Black or African American		10 (13)
Education		
Less than high school		12 (15)
High school graduate		30 (38)
2-year college or technical school		24 (30)
4-year college graduate		9 (11)
Any post-graduate study		4 (5)
Income		
Less than \$20,000 per year		25 (36)
\$20,000 to \$34,999 per year		27 (39)
\$35,000 to \$69,999 per year		15 (21)
\$70,000 or more per year		3 (4)
Low Health Literacy		7(10)
Primary Language Spanish		19 (23)
Was not born in the US		33 (41)
Child		
Age (years), mean (sd)		7 (4)
Medicaid Insurance		69 (85)
On controller medication		41 (49)
Admitted to hospital		14 (17)
Metrics from the PACCI-ED		
Over the past 12 months		
1+ visits to Urgent Care		33 (40)
1+ visits to ED		70 (84)
1+ hospitalizations		24 (29)
1+ oral steroid use		62 (77)
Child's asthma over past 12 months		
Getting better		26 (31)
Staying the same		40 (48)
Getting worse		17 (21)
Parent bothered by child's asthma over past 12 months		
Not bothered		14 (17)
Somewhat bothered		42 (51)
Very bothered		27 (33)
Asthma severity		

Intermittent	5 (6)
Mild	27 (33)
Moderate	30 (36)
Severe	21 (25)
Asthma control score*, mean (95% CI)	7.6 (6.7,8.4)
Score > 3	71 (86.6)

* Sum score > 3 reflects uncontrolled asthma¹⁰

Table 2. Example quotes of transcripts and respective coded themes

Theme/Subtheme	Selected Illustrative Quotes
Theme #1: Facilitated Communication Across Healthcare Team Members and Caregivers	
Facilitated Communication	"It's useful...there's questions that we didn't even make to the doctor about our kid's asthma, and it would help us as a reminder, to ask questions that we forgot to ask."
	"You ask me questions that I was kind of sometimes scared to ask...And I've always had so many questions but sometimes I'm kind of afraid and I don't want to see him here, I just want to go home to my other child too."
	"Because the doctors would have a better understanding of what goes on at home. It can exactly ask me for symptoms throughout the week, but usually when parents get here they focus on right now. The doctor would have a better feel of how the patient is at home with their symptoms."
Communication with School and Childcare	"...he had the teachers tell him, "Oh, you'll be okay. Don't worry." So she kind of played it off. But that's not the case with him, he gets a flare and his lungs could close on him. And then once they send him to the nurse's office, if I can't answer her or anything, at least they could look at that..."
	"It would be helpful in a sense of giving them (school nurse) insight of the patient, the history, present illnesses or whatever's going on. It seems like it would make everything a little less complicated."
	"For me, personally, my daughter has an inhaler at school, so I need her to be aware that she can have an attack at any time and what to look for when she has the attack."
PCP Relationship	"I think a lot of this info we've actually already discussed with our specific physician. I don't know, maybe it may help for other people where their physicians are not as thorough, just as experienced with this type of issue."
	"I think it depends because at least for him he's been going to the same doctor since he was born, so it's like I don't think it's as much, but let's say I was changing him from doctors and I think I would find that helpful."
	"The questions that are on there will let him know. Sometimes they don't ask you much, they're just trying to rush you out."
Theme #2: Building Parent Capacity to Manage Child's Asthma	
Education Tool	"...it's allowing the parent to get familiar with things that might be going on with the child's problems. And also, again, I think it overall unites the doctor, the child, the parent by knowing as a whole."
	"...because prior to me coming in here, I didn't have the PACCI to help me to say, oh, this is what his asthma should look like."

Chronicity	“Well, because I think it comforts the parents as far as really knowing educating them more about what their child’s going through...even just knowing his symptoms we can look ahead to see if maybe we can be the ones to prevent him from being inside the Emergency Room.”
	“...because I don’t come from a family that has asthma, so for me it’s new, so I wish I would have had this in the very beginning, I would have really understood.”
	“...because sometimes you get really busy and...what’s happening, like today, you forget. But you asking those kind of questions and trying to look back and trying to remember everything, what we did, what we give him, what was he doing for the past three weeks and stuff like that.”
	“I think every day is just fast, fast, fast, and when you backtrack, you’re like oh my gosh, like when you’re writing and you’re in the yellow, and it’s more like wow, it’s not just here and there, it’s actually pretty frequent.” “Yeah, because for example, right now I’m so tired and it’s hard going back a year from now just to see how many times he (child) went to the ER. I don’t remember, but having it written down beforehand it would make it so much easier too for the doctor.”

REFERENCES

1. National Asthma E, Prevention P. Expert Panel Report 3 (EPR-3): Guidelines for the Diagnosis and Management of Asthma-Summary Report 2007. *J Allergy Clin Immunol* 2007;120:S94-138.
2. Miller JE. The effects of race/ethnicity and income on early childhood asthma prevalence and health care use. *Am J Public Health* 2000;90:428-30.
3. Boudreaux ED, Emond SD, Clark S, Camargo CA, Jr., Multicenter Airway Research Collaboration I. Race/ethnicity and asthma among children presenting to the emergency department: differences in disease severity and management. *Pediatrics* 2003;111:e615-21.
4. Yawn BP, Rank MA, Cabana MD, Wollan PC, Juhn YJ. Adherence to Asthma Guidelines in Children, Tweens, and Adults in Primary Care Settings: A Practice-Based Network Assessment. *Mayo Clin Proc* 2016;91:411-21.
5. Agnihotri NT, Pade KH, Vangala S, Thompson LR, Wang VJ, Okelo SO. Predictors of prior asthma specialist care among pediatric patients seen in the emergency department for asthma. *J Asthma* 2019;56:816-22.
6. Nugus P, Holdgate A, Fry M, Forero R, McCarthy S, Braithwaite J. Work pressure and patient flow management in the emergency department: findings from an ethnographic study. *Acad Emerg Med* 2011;18:1045-52.
7. Goldberg EM, Laskowski-Kos U, Wu D, et al. The Pediatric Asthma Control and Communication Instrument for the Emergency Department (PACCI-ED) improves physician assessment of asthma morbidity in pediatric emergency department patients. *J Asthma* 2014;51:200-8.
8. Wu DJ, Hipolito E, Bilderback A, Okelo SO, Garro A. Predicting future emergency department visits and hospitalizations for asthma using the Pediatric Asthma Control and Communication Instrument - Emergency Department version (PACCI-ED). *J Asthma* 2016;53:387-91.
9. Zorc JJ, Scarfone RJ, Li Y, et al. Scheduled follow-up after a pediatric emergency department visit for asthma: a randomized trial. *Pediatrics* 2003;111:495-502.
10. Okelo SO, Eakin MN, Patino CM, et al. The Pediatric Asthma Control and Communication Instrument asthma questionnaire: for use in diverse children of all ages. *J Allergy Clin Immunol* 2013;132:55-62.
11. Kachru R, Morpew T, Kehl S, et al. Validation of a single survey that can be used for case identification and assessment of asthma control: the Breathmobile Program. *Ann Allergy Asthma Immunol* 2006;97:775-83.
12. Lee SY, Stucky BD, Lee JY, Rozier RG, Bender DE. Short Assessment of Health Literacy-Spanish and English: a comparable test of health literacy for Spanish and English speakers. *Health Serv Res* 2010;45:1105-20.
13. Dedoose Version 8.0.35, web application for managing, analyzing, and presenting qualitative and mixed method research data. SocioCultural Research Consultants, LLC 2018.
14. Wolfenden LL, Diette GB, Krishnan JA, Skinner EA, Steinwachs DM, Wu AW. Lower physician estimate of underlying asthma severity leads to undertreatment. *Arch Intern Med* 2003;163:231-6.
15. Zorc JJ, Pawlowski NA, Allen JL, et al. Development and validation of an instrument to measure asthma symptom control in children. *J Asthma* 2006;43:753-8.

16. Schatz M, Sorkness CA, Li JT, et al. Asthma Control Test: reliability, validity, and responsiveness in patients not previously followed by asthma specialists. *J Allergy Clin Immunol* 2006;117:549-56.
17. AfHRA Q. Six Domains of Health Care Quality. 2018.
18. J. R. Patient-Centered Care: What It Means And How To Get There. *Health Affairs Blog* 2012.
19. Stewart M, Brown JB, Donner A, et al. The impact of patient-centered care on outcomes. *J Fam Pract* 2000;49:796-804.