

**Division of Health Care Statistics (DHCS)**  
**2012 National Ambulatory Medical Care Survey**  
**Asthma Management Supplement Study:**  
Results of cognitive interviews conducted August – September, 2011

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## **1. Introduction**

This report documents findings from an evaluation of the National Ambulatory Medical Care Survey (NAMCS) 2012 Asthma Supplement. The purpose of the Asthma Management Supplement is to collect information about physician clinical decision making about asthma management for patients in ambulatory care settings. The Asthma Management Survey is sponsored by a collection of federal agencies collaborating on implementing the National Asthma Education and Prevention Program Guidelines for the Diagnosis and Management of Asthma. The goals of the Asthma Management Supplement are to 1) evaluate physician agreement with core elements of the Guidelines, 2) assess self-reported competency in providing Guideline-compliant care, 3) determine which elements doctors report providing, and 4) assess perceived barriers to providing the core elements of asthma management to patient populations. These data will be used to develop interventions to better educate and equip physicians to fully implement the Guidelines.

This is a study of how respondents (physicians) complete the form, how they understand the questions, and what problems if any they encounter in the process. It is hoped that information from this study can inform changes to question design and provide to analysts documentation of the underlying constructs measured by each item.

The next section briefly describes the qualitative methodology of cognitive interviewing, including the procedure for sampling interview respondents, the data collection method, and analysis plan. The third section of the report presents a summary of general findings, followed by a more detailed item-by-item review.

## 2. Methodology

### Sampling and Respondent Characteristics

Testing took place in August and September of 2011. We conducted a total of 17 interviews.

Respondents were selected using a purposive sample. The goal of a purposive sample is *not* to obtain a statistically representative sample. The goal, instead, is to arrive at a complete understanding of the patterns of interpretation that are elicited by each item in the survey. This is achieved first by aiming for diversity in the sample (in terms of both demographic and medical practice diversity) and then by targeting respondents who help us explore relevant issues that emerge in the course of data collection. Additionally, respondents were chosen on the basis of those who had recently participated in the NAMCS Supplement and who are located within the DC metropolitan area. Recruitment began with a list and contact information for previous NAMCS survey respondents. A letter of invitation was sent to their workplace to request their participation in the study. Prior to participation, respondents were screened over the telephone in order to confirm that they met these criteria for inclusion.

Table 1 lists a few respondent characteristics. A majority of respondents were age 40 or over and about half were male and half female. But by far the most significant feature of the sample is the type of practice, or specialty, of the respondent. Approximately three quarters (13) were pediatricians. Two were allergy specialists and two were general practitioners. Analysis showed that type of specialization had an impact on question interpretation; therefore, this is a limitation of the study. More respondent variation in type of practice may have revealed different interpretations that were not captured here. Nevertheless, the 24% that were NOT pediatricians served as a point of comparison and highlighted the fact that interpretation can vary by specialty.

Table 1: Respondent Characteristics (N = 17)

	<u>Total</u>	<u>Percent</u>
<u>Respondent Age</u>		
Under 40	6	35%
40 and Over	10	59%
Missing	1	06%
<u>Gender</u>		
Male	8	47%
Female	9	53%
<u>Type of Practice</u>		
Pediatrics	13	76%
Allergy	2	12%
Family or Internal Med.	2	12%

All interviews were conducted off-site (and not at the NCHS lab). Most took place at the respondent's workplace, but two interviews were conducted in the respondent's home. Prior to beginning the interview, respondents filled out paperwork agreeing to be audio-taped. The interviewer then explained the purpose of NCHS, described the study, and told respondents the manner in which the interview would be conducted. Interviews were designed to last 60 minutes and a \$100 token of appreciation was given to respondents at the conclusion of the interview. Because it was necessary to speak specifically and exclusively with physicians responsible for completing the questionnaire, remuneration was higher than the standard rate of \$40.

### Data Collection

Cognitive interviewing, as a qualitative methodology, offers the ability to understand the interpretive process respondents go through in order to complete the NAMCS Asthma Supplement. It is a method that allows the researcher to uncover respondents' interpretations of items on the form and note where response error may have occurred. Each interview began with the respondent completing the questionnaire by hand, as they would do if it were the actual survey. The interviewer then asked follow-up questions (i.e., probes) designed to reveal respondents' interpretation of each item and any problems they had in arriving at an understanding and/or an answer. Interviewers also noted any difficulties – either observed by the interviewer or reported by the respondent – with questionnaire layout and format. In a one-hour interview, there was not time to explore all questions on the form. As a result, interviewers probed the general question (for example, question 8) and discussed sub-items (for example, question 8e) only as they arose in conversation.

### Method of Analysis

Data analysis proceeded according to the grounded theory approach which does *not* aim to test existing hypotheses, but instead generates explanations of how respondents complete the survey form and understand the questions. The goal is to produce explanations that are closely tied to the empirical data.

The process of analysis is a constant comparison of data in several steps. The first step occurs within the interview as the interviewer attempts to understand how one respondent has come to understand and answer each item on the questionnaire. Response error is identified in this stage of analysis. This level of analysis is illustrated through the use of respondent examples and quotes in the results section. The examples are designed to give readers a sample of how individual respondents understood and answered a question. The second step in analysis occurs once the interview is over, and is a systematic comparison *across* all interviews. This level of comparative analysis reveals patterns in the way respondents complete the survey and understand the questions. It also identifies common difficulties with question interpretation and explanations for response error. This level of analysis is demonstrated not so much with specific examples, but with a discussion of general patterns of interpretation that occur across multiple respondents. The third level of analysis explores whether various patterns of interpretation (and response error) are more likely among certain groups of respondents, such as specialists vs. generalists.

The next section discusses results of the study in two parts. The first part begins with a discussion of overall themes. These themes are not explanations of how one question in particular functions, but rather, the themes identify patterns of interpretation that are prevalent throughout the instrument and among multiple questions. The second part is a detailed question-by-question account of how respondents interpreted specific items. Not every item is associated with a larger theme; however, items that relate to themes discussed in the first part of the results section are identified as such. In addition, the question-by-question analysis discusses the construct(s) measured by each question.

### **3. Results**

#### General Findings and Emergent Themes

##### *Survey Instructions – “Practice Patients” vs. Personal Patients*

The instructions to the survey ask the following: “For all the following questions, please answer only for patients you personally see. Do not include patients seen by or clinical decisions made by other practitioners at your site.”

In some ways, this instruction carries a false assumption. Four respondents noted that they do not have “personal” patients. Instead they characterized patients as “practice patients” because all patients are seen by all doctors. For some this was standard procedure for the practice and for others it was simply the way things work out. Regardless, decisions about a patient’s care are shared and are not under the sole domain of one doctor. In these cases the respondent was not thinking about his or her individual decisions as much as all decisions about care related to particular patients. The “unit of analysis”, if you will, is the patient more than the doctor.

This may not have much effect on survey estimates, but it is worth knowing that interpretations of the instructions can vary according to this phenomenon.

##### *Nature of the Medical Practice Influences Interpretations, Burden, and Response Error*

Three quarters of the sample represented doctors specializing in pediatrics. However, the one quarter that was generalists provided an important contrast. A systematic analysis showed that interpretations, respondent burden, and response error could be influenced by the respondent’s type of practice. The following examples highlight these patterns.

First, interpretation sometimes varied, not randomly, but by physician specialization. For example, question 9 (For what percent of asthma visits do you use each of the following strategies to help patients control and manage their asthma?) was not straightforward for one respondent who specialized in pediatrics. He actually sees patients in their 20’s, whom he considers adults, but he left some of the questions blank. When asked why, he said “the questionnaire steers you in the direction of a dichotomy between children and adults”. He decided, therefore, to skip the questions geared toward adults even though he thought they literally applied to him. This points to a possible difficulty in whether respondents should

interpret the questions in the context of a specialty in general or more literally in terms of what happens in day-to-day practice.

Second, respondent burden can vary by physician specialization. This was evident in question 4 (“During your last normal week of practice, approximately how many visits did you have with patients who have asthma?”). For example, one general practitioner said, “This was a hard one. I just picked a number.” When asked why, she said she sees all kinds of conditions. If a patient comes in for something besides asthma, she may not realize they have asthma as an underlying condition because she doesn’t always check the EMR. She said it would be much easier to answer the question if it asked how many patients came in for asthma problems in a normal week. Several of the pediatric doctors also said that it was difficult to answer the question, mostly because they deal with so many different conditions. Conversely, the allergy specialists found the question very easy because they both knew how many of their patients have asthma (interestingly, both said at least 50%). When asked why one said, “You know how many you see per day. And at least half my patients have asthma.”

Finally, response error can occur in different proportions according to different specializations. For example, there were seven cases of response error in question 1, and six were for those who specialized in pediatrics. It was as though the category had to match exactly in order for these respondents to choose it. For example, a few did not check the “25-64 years” box even though they see patients in their mid-twenties. Similarly, a few respondents did not check the “18-24 years” box when probing revealed they did, indeed, see patients in this age range. When asked why, one said that she does not see patients aged 20-24, and that’s why she did not mark that box. With a similar explanation, another respondent cited that pediatrician guidelines go up through the 19<sup>th</sup> birthday AND that he does see older patients (i.e., those in their twenties). When asked to explain why, then, he did not mark the “18-24” category, he said, “I interpreted the question as a rule or routinely.” It was as though he was answering based on the mode of his patient distribution rather than including all patients or even the pediatric guidelines as he understands them. Clearly these response categories are open to interpretation. Moreover, variations in interpretation may be subject to physician specialty which may bias survey estimates. A rethinking of the categories to reduce confusion while still meeting analytic purposes is worthwhile.

#### *Answers Based on Theory vs. Practice*

When answering some questions on the survey, respondents couched their responses in one of two ways. They thought of the practice of asthma management either according to official medical guidelines or according to how the practice of medicine actually occurs. In other words, the questions could be interpreted as questions of how medical practice *should* occur vs. how medical practice *does* occur. The most commonly cited reason for the difference between the two (theory vs. practice) was patient compliance. Many respondents noted that a technique is only as good as its ease of implementation, particularly when implementation is patient-dependent. Questions 5, 8, 9, and 12 highlight this phenomenon.

In question 5, one respondent said that asthma action plans make sense in theory, but for high-risk urban families the plans aren’t adhered to. Many patients lose them. In this regard the plans

are not practical. He concluded by saying that an effective tool is one that actually works. He answered 'disagree' to the question, basing his answer on practice. If he thought of what was theoretically optimal, he would have chosen 'agree'. Conversely, another person interpreted the question as more of a theoretical one. She answered 'strongly agree' to many items, citing that these practices relate to how she was trained, are "standard in the field", and "represent the best case scenarios for diagnosis."

In question 8 (For what percent of asthma visits do you ask about the following items or perform the following tests to assess current asthma control?) this issue comes up again. One respondent answered "sometimes" for peak flow and "almost always" for all the other items. When asked why, he said that "peak flow is one of those asthma management aspects that is effective and a good idea theoretically, but patients don't do it for any sustained length of time at home. So in practice it's not very effective." Several respondents noted this about peak flow in particular, but at least one respondent gave her answers on the basis on what doctors should be doing in general. She commented, "What doctor would say they're not doing these?" She said that these items are "all elements that you should do by the book." The former respondent clearly answered on the basis of practice while the latter answered more on theory.

This pattern comes up again in question 9 (For what percent of asthma visits do you use each of the following strategies to help patients control and manage their asthma?). Thinking about actual practice, one respondent answered "sometimes" for actions plans, saying that "Action plans are great only in theory. Most patients don't use them."

Finally, one respondent verbalizes this pattern well in question 12 (Below are strategies that could be used to help patients control their asthma. Please specify whether you use each strategy and next, specify the one more important barrier (if any) that you face to using each strategy). He said that "The question implies that the doctor thinks it's useful. There needs to be a column for 'not clinically relevant/don't believe in it.' The yes/no 'do you use this strategy' could depend on the patient." This respondent was thinking of the distinction between theory and practice and was mildly frustrated that the question was making assumptions that masked this difference.

Theory and practice are two different constructs and analysts should decide, question-by-question, whether they prefer to measure only one of those constructs or don't mind capturing both.

*Answer depends on nature of visit (Initial vs. Follow-up)*

Across different questions, respondents were sometimes incorporating the nature of the visit into their interpretations. The distinction that came up most frequently was the difference between an initial visit and follow-up visits. Answers can be very different depending on which type of visit respondents think about. For example, in question 7 (For what percent of asthma visits do you document overall asthma control?) one respondent said that she does not document control for patients that she sees frequently because she's already done it. Hence, she said, her answer would be different if she thought of initial visits. Another respondent expressed this as well. She said she "almost always" documents asthma control for new patients, but if she were to think

of asthma patients she's already seen, the answer would be "sometimes". Another respondent commented on this specifically, suggesting the survey should specify the type of visit. He explained that, because he is an allergy specialist, he documents control for every visit. But he acknowledged that this might not be the case for doctors who are generalists.

Another example is question 9 (For what percent of asthma visits do you use each of the following strategies to help patients control and manage their asthma?). One respondent wondered if the question was asking "Do I EVER do it, or do I do it on every visit?" His answer varied by strategy. For treatment plan (a) he answered "often" because he was thinking of initial visits. However, for other items he was thinking of follow-up visits and marked "sometimes". In these cases he noted that his responses look low because "every visit is different – you don't do the same thing, for example, on follow-up visits that you do on first visits." Another respondent asked whether "asthma visit" meant a new visit or a follow-up. She said she doesn't ask patients about triggers at every visit because this information has already been asked about and recorded. A third respondent said, "If I've tested once, I don't need to do it again." Similarly, if he received test results from another physician he would not test again.

The distinction between initial visits and follow-up visits seemed important to some respondents because their medical approach varies according to the nature of the visit. This impacted the way they interpreted and answered the questions. Analysts should take this into account and decide how they want this phenomenon to be captured by the survey items because, currently, there is variation in the construct being measured in some items.

#### *General vs. Specific Interpretation of Terms*

Two terms in particular, "control assessment tool" and "asthma action plan", caused some confusion and variation in interpretation. We found that respondents could interpret these terms as referring to either general tools or specific tools. When present in a question, some respondents actually asked if the term was referring to something specific or not. Questions using these terms capture different constructs, depending on the nature of the interpretation. In other words, a question asking about a specific tool may be quite different from one asking about a tool in general. The following discusses specific questions that use these terms and provides examples of how respondents interpreted them.

Three questions reference control assessment tools, questions 3, 8, and 12. We observed inconsistent interpretations of what this meant to physicians. For example, question 3 asks "How frequently do you use an asthma-specific structured encounter form (i.e., and asthma template or an asthma visit checklist) when asthma is the primary reason for the visit?" Upon reading this question, one person immediately asked, "What is that? That's not a standard term." He wasn't sure if the question was referring to some specific form that existed or if it was asking whether they consistently used a form in general. Another person expresses the same idea and said, "There could be some checklists out there, but there isn't a universal template" that she was aware of. So she wasn't sure if it was asking about a specific form. Other respondents didn't have this confusion. They assumed the question was referring to whether or not they use ANY standard form vs. not using a form at all.

Question 8 (For what percent of asthma visits do you ask about the following items or perform the following tests to assess current asthma control?) also asks about a “control assessment tool (e.g., Asthma Control Test)”. One respondent answered “never” because “This is not the assessment tool I use.” She interpreted the question as asking about a specific tool. Three other respondents had the same confusion and asked if this item was about a particular tool. One said she is not familiar with it if it IS something specific. But if the question is about using a general tool, then, yes, she always uses one. Another said, “We have our own tool” and answered “never.” One person pondered this out loud, saying, “I’ve never heard of the Asthma Control Test...maybe this is the same as our template?” She answered “never” deciding that the question was about a particular test and not a general one.

Similar questions came up for question 12 (Below are strategies that could be used to help patients control their asthma. Please specify whether you use each strategy and next, specify the one more important barrier (if any) that you face to using each strategy). For sub-item b (A control assessment tool (e.g., ACT), one person asked “Any old assessment tool?” Two other respondents answered “no” and left the barrier row blank. Both said they did not know what the ACT control assessment tool was.

Finally, question 9 (“For what percent of asthma visits do you use each of the following strategies to help patients control and manage their asthma?”) uses the term “asthma action plan”. Specific vs. general interpretation issues arose here as well, but to a lesser extent than for the previous example. Still, one respondent commented she wasn’t sure how to answer because “I will write down ‘avoid smoke’” and give them a list of medicines and triggers, but she wasn’t sure if that’s what the question meant by “asthma action plan”. Another physician does the same thing (writes down an action plan for the patient), but said that she doesn’t “use a template”. And finally, another respondent said he interpreted “asthma action plan” as “my treatment plan”, not just any plan.

Across these questions and respondents, there were at least 13 instances where this type of confusion was demonstrated. Even if question designers want to capture both kinds of interpretations (specific and general), it seems advisable to clarify the intent of the measure in order to reduce respondent confusion.

### *Format Issues*

Format issues in the questionnaire were minimal, but were observed for two questions, 9 and 11. The last column in question 9 (column 5) created errors for some respondents. The column is meant to allow respondents to indicate that an item is not applicable, but some respondents missed this, and ended up marking column 5 when they intended to mark column 4, “almost always”. Moreover, the “not applicable” column was not consistently used, even when an item truly was not applicable. In some cases respondents left a not applicable item blank rather than marking the “N/A” column. These mistakes likely occurred because the questionnaire does not make clear to the respondent how they should proceed when an item in this question is not applicable. This could be improved upon.



In question 11 (How do you use the following medications) the instruction to “mark all that apply” was missed by some respondents. Because one answer is chosen for other questions, they seemed to assume the same was true for this one. During probing one person said, “I wanted to mark more than one.” Another person said, “I marked only one because I was tired and didn’t even see the ‘mark all that apply’.” Adding the instruction to the end of the question may minimize these mistakes.

### Specific Research Questions

- a. How long did it take to complete the form?  
Respondents were asked to complete the form at the beginning of the interview, as they would for the actual survey. The shortest time observed was seven minutes, the longest time was 15 minutes, and the mean was ten minutes.
- b. How well did the response categories work with both vague quantifiers and percentages?  
Many of the questions added percentages to vague quantifiers in the response options. No one had any difficulties with the words and the percentages being grouped together, and a few respondents said the percentages helped to define what was meant by terms such as “often”. However, others reported using only the words and essentially ignoring the percentages. In general, the percentages may help some respondents, but the response options still operate as vague quantifiers. In other words, analysts should not take the percentages literally as mathematical intervals.

### Item-by-Item Analysis of the Survey Form

#### **Question 1:**

Which of the following patient age groups do you see?

*Mark (X) all that apply.*

- 1  0–11 years
- 2  12–17 years
- 3  18–24 years
- 4  25–64 years
- 5  65 years and above

Findings: As noted in the first part of the results section, response error was observed in this question, and occurred with different frequency depending on physician specialization. There were seven cases of response error in this question, and six were for those who specialized in pediatrics. It was as though the category had to match exactly in order for these respondents to choose it. For example, a few did not check the “25-64 years” box even though they see patients in their mid-twenties. Similarly, a few respondents did not check the “18-24 years” box when probing revealed they did, indeed, see patients in this age range. When asked why, one said that she does not see patients aged 20-24, and that’s why she did not mark that box. With a similar explanation, another respondent cited that pediatrician guidelines go up through the 19<sup>th</sup> birthday AND that he does see older patients (i.e., those in their twenties). When asked to explain why, then, he did not mark the “18-24” category, he said, “I interpreted the question as a rule or routinely.” It was as though he was answering based on the mode of his patient distribution rather than including all patients or even the pediatric guidelines as he understands them.

Clearly these response categories are open to interpretation. Moreover, variations in interpretation may be subject to physician specialty, which could bias survey estimates. A rethinking of the categories to reduce confusion while still meeting analytic purposes is worthwhile.

### Question 2:

Which type of system, if any, do you use to track and manage your patients with asthma (e.g., schedule regular follow-up visits)?

- |   |   |
|---|---|
| 1 <input type="checkbox"/> Electronic medical record-based system             | 4 <input type="checkbox"/> Other type of system |
| 2 <input type="checkbox"/> An electronic system separate from medical records | 5 <input type="checkbox"/> No system            |
| 3 <input type="checkbox"/> Paper reminder/recall system                       | 6 <input type="checkbox"/> Don't know           |

Findings: Many respondents (11) did not interpret this as an asthma tracking question. Instead, respondents thought the question was asking about either how they schedule appointments (all patients, not just asthma patients) or what kind of medical records they use (paper or electronic). The source of confusion seems to be that there are different concepts written into the question – tracking patients, managing patients, scheduling appointments and type of medical record system. The following examples illustrate these topics as the construct being measured in certain instances. The examples also show that there is little consistency in measuring a single construct.

One person said he didn't know what "manage" meant in this question because he thinks of it as managing care and not scheduling appointments. The parenthetical example clearly confused him. Another respondent gave a similar explanation for his confusion. He thought track and manage are two distinct things and noted that "manage" is a "loaded word that means clinical management." For this question he focused on the example of scheduling visits to answer the question. A third respondent thought of tools like "Dashboard" (or some other kind of registry of patients) when he read "track and manage" in the question. He explained that this is where doctors can pull up their pool of asthma patients to see what's going on. He said scheduling appointments would not really apply because this is "an administrative thing that's not done by doctors." Yet he saw the question as asking about scheduling appointments (because of the example in the question) and answered "other".

Because of the nature of the response options, a couple other respondents thought the question was asking what kind of medical records they have. One respondent answered EMR (option 1) on the form, but during probing asked, "But are you talking of asthma population management?" She said track and manage are two different things. "Track is something like a registry – a defined way of identifying all asthmatics." She said they do not do this yet because they have a new EMR system and are getting used to how to use it and what its capacity and feature are. Whereas the previous respondent used the example to define the question, this respondent did not. Another respondent had a similar interpretation and said she thought the question was asking "What kind of system do you use in general, not just for tracking asthma patients." One respondent gave two answers (electronic and paper) because he also thought the question was asking what kind of medical records his practice uses.

Finally, the question did not apply for one respondent who works in an emergency room setting, but she answered it anyway. In an ER setting, patients do not return for follow-up visits. The respondent said, “I see them for asthma attacks, not for follow-up visits. We have our ‘frequently flyers’” – but that is not by design. Those are poor patients who do not have a general practitioner. When asked how she answered the question if she felt it didn’t apply, she replied, “I fudged it.” The ER uses EMR’s and she can use these records to see how many times the “frequent flyers” have been in and what the result of that visit was. If emergency room settings are included in the sample, this question should be clarified. Perhaps this respondent should have answered “no system”, but that would have probably implied to her that they have no EMR’s.

The construct that this question is designed to measure should be clearly identified and then more plainly communicated in the question.

### Question 3:

How frequently do you use an asthma-specific structured encounter form (i.e., an asthma template or an asthma visit checklist) when asthma is the primary reason for the visit?

- |  |  |
|--|--|
| 1 <input type="checkbox"/> No form available | 4 <input type="checkbox"/> Often (25–74%)          |
| 2 <input type="checkbox"/> Never (0%)        | 5 <input type="checkbox"/> Almost always (75–100%) |
| 3 <input type="checkbox"/> Sometimes (1–24%) |  |

**Findings:** This question could benefit from a clarification of the term “asthma-specific structured encounter form”. This could be interpreted as referring to either a specific form or a general form, though the majority of respondents interpreted it as asking about whether they use a general form. This kind of confusion – general vs. specific form – was observed in questions 8d and 12b, and is noteworthy to the extent that it is part of the larger theme discussed earlier.

For example, the first reaction of one respondent was, “What is that? That’s not a standard term.” He said they have a form they use but it’s not an “industry standard.” He said he wasn’t sure if the question was referring to some specific form that existed, or if it was asking whether they consistently use a form in general. Another respondent also said there could be some checklists out there, but there isn’t a universal template that he’s aware of.

Finally, as in the previous question, the ER physician answered “never”, but her explanation suggests a false assumption might be built into the question. She said, “We try not to get involved with their chronic asthma condition” because the goals of an ER are to bring acute exacerbations under control, not to manage asthma on a long term basis. Her answer of “never” using an asthma template means something different from a non-emergency doctor, such as an internist or general practitioner. Overall, thought should be given to the idea that some questions may not relate well to some physician specialties, and those questions should be modified accordingly, even if only to redefine the survey respondent universe associated with a particular question.

### Question 4:

During your last normal week of practice, approximately how many visits did you have with patients who have asthma **regardless of the reason for the visit?**

\_\_\_\_\_ Number of visits

**Findings:** Respondents arrived at an answer to this question a couple different ways. They either performed a specific count of patients they saw during a specific week or they relied on the general knowledge they have of the percent of their patients who have asthma, either in their geographic region or in their practice.

However, the amount of burden experienced by respondents is not random, but can vary by type of practice and is part of the larger theme discussed earlier. General practitioners may find this question more difficult to answer because they have more heterogeneity in in the conditions they treat than do specialists. There is more information to mentally process in order to arrive at an answer. For example, one general practitioner said, “This was a hard one. I just picked a number.” When asked why, she said she sees all kinds of conditions. If a patient comes in for something besides asthma, she may not realize they have asthma as an underlying condition because she doesn’t always check the EMR. She said it would be much easier to answer the question if it asked how many patients came in for asthma problems in a normal week. Several of the pediatric doctors also said that it was difficult to answer the question, mostly because they deal with so many different conditions.

Conversely, the two allergy specialists found the question very easy because they both knew how many of their patients have asthma (interestingly, both said at least 50%). When asked why one said, “You know how many you see per day. And at least half my patients have asthma.”

A final comment is warranted. Even when it may be easy to know the percent of asthma patients one has, the mathematical calculations may still present a challenge to the accuracy of one’s answer to this question. At least one physician, an allergy specialist, was tripped up by the math. He answered 50 visits thinking that 50% of the patients he sees per day have asthma. He said he sees 25-30 patients a day and figured 10 of those patients have asthma. He multiplied by 5 days (over the course of a week) to arrive at 50 visits. However, by this logic, he should have figured he sees 12-15 asthma patients a day for 5 days, totaling 60-75 visits.

**Question 5:**

For each of the following statements, please indicate whether you agree or disagree:

	<i>Mark (X) one box in each row.</i>				
	Strongly agree	Agree	Neutral	Disagree	Strongly disagree
a. Spirometry is an essential component of a clinical evaluation for an asthma diagnosis	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>
b. Inhaled corticosteroids are the most effective medications to control persistent asthma	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>
c. Asthma action plans are an effective tool to guide patient self-management efforts	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>
d. Patients with persistent asthma should have follow-up visits at least every 6 months to assess control	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>
e. Assessing asthma severity is necessary to determine initial therapy	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>

**Findings:** Answers to this question were based on two different interpretations: actual experience or recommended standards. These different interpretations get to the heart of one of the larger themes discussed earlier – the difference between theory and practice.

One respondent directly identified this dichotomy in the question. She said, “These are all things that are important to treating asthma. All are good things to do. But this is the ideal situation.” She answered “strongly agree” to these items not because she actually does them all on a regular basis, but because she knows these are the recommended standards.

Many respondents (9) agreed or disagreed on the basis of their actual experience with a tool or their frequency of using it. One respondent said that the more she uses something and has experience with it, the more likely she answered “agree”. Another respondent gave the same explanation, saying that he answered “agree” when it was something he does with every patient (and, therefore, does frequently).

Other respondents, however, answered on the basis of their training or the standards or recommendations in the field, NOT on how they actually practice. For example, one respondent who answered “agree” to 5a (spirometry) indicated that she does not do spirometry, but knows that it is the recommendation. Interestingly, respondent interpretations sometimes shifted across question and topic. This same respondent answered “strongly agree” to 5b because this is REALLY how she practices medicine.

It seems that agreeing or disagreeing on the basis of theory vs. practice indicates the measurement of two very different constructs. If this matters to question designers, the question should be clarified. Otherwise, analysts should be aware that this question captures both kinds of interpretations.

**Question 6:**

Please rate your confidence in using the following actions	Mark (X) one box in each row.			
	Very confident	Somewhat confident	Not all confident	N/A (do not perform)
a. Using spirometry data as a component of a clinical evaluation for an asthma diagnosis	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>
b. Assessing underlying asthma severity using standard criteria	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>
c. Prescribing the appropriate dose of inhaled corticosteroids	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>
d. Evaluating the need to step up controller therapy	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>
e. Evaluating when to step down controller therapy	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>

**Findings:** Respondents were most likely to answer this question on the basis of their actual experience with an action. The more experience they had, the more confident they felt. A couple respondents factored in not only their own level of comfort and competence, but also patient compliance. For example, one person said that he answered only “somewhat confident” when patient interaction and compliance is important. For 6b he said, “This is hard because assessing severity is based on communication with the patient. And they don’t usually know what they’re talking about – they don’t know the difference between a cough and a wheeze.”

As with some previous questions, the ER physician did not feel as though some of these questions applied to her situation. Yet, she answered them anyway. When asked what her

thought process was, she said she answered on the basis of her training, not her current experience.

### Question 7:

For what percent of asthma visits do you document overall asthma control?

- 1  0% (Never)
- 2  1–24% (Sometimes)
- 3  25–74% (Often)
- 4  75–100% (Almost always)

**Findings:** Respondents generally defined “asthma control” as the degree to which patients complain of symptoms or as the prevalence of symptoms while on asthma medication. As one respondent said, control means “is the management plan working?” Another respondent expressed as “It’s the amount of medicine I have to put them on to keep them under control.”

The denominator of “asthma visit”, however, did create some questions and confusion. One person expressed general confusion over the premise of the question. He said he wasn’t sure what “asthma control” meant in this question because if a patient comes in for asthma, of course a doctor would document control. He said that if it’s an asthma visit “it’s a no-brainer that you document control.” This made him wonder if he should consider ALL visits, as in question 4. Another respondent did a better job of identifying a possible problem with the question. He noted that if a patient comes in with a sprained ankle but has asthma, the doctor should still document asthma control. That’s different from an asthma visit. For an “asthma visit” a doctor would be more likely to document control than for a “sprained ankle visit” – but control should still be documented in the sprained ankle visit. For this reason, he thought “visits with asthma patients” might be a better denominator. It’s a way to acknowledge asthma visit vs. asthma patient.

The nature of the visit came up for other respondents as well. Some were thinking of first visits, others were thinking of any asthma visit. One respondent chose “almost always”, noting that in his practice they do a lot of first visits. Another respondent marked “often” because she was thinking that she frequently does this for new patients coming in with asthma-like symptoms. However, if she were to think of patients who come in for some other reason, but have asthma, her answer would be “sometimes.” Others expressed the same view. One respondent said that she doesn’t always document control for patients she see regularly because she’s already done it. These examples point to the fact that the term “asthma visit” may need to be modified.

**Question 8:**

For what percent of asthma visits do you ask about the following items or perform the following tests to assess current asthma control?

	Mark (X) one box in each row.			
	0% (Never)	1–24% (Sometimes)	25–74% (Often)	75%–100% (Almost always)
a. Ability to engage in normal daily activities	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>
b. Frequency of daytime symptoms	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>
c. Frequency of nighttime awakening	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>
d. Patient perception of symptom control	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>
e. Control assessment tool (e.g. Asthma Control Test)	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>
f. Frequency of rescue inhaler use (e.g., Albuterol)	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>
g. Frequency of exacerbations requiring oral steroids	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>
h. Frequency of patient report of emergency department or urgent visit for asthma	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>
i. Peak flow results from home	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>
j. Spirometry	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>

**Findings:** In this question issues arose for only three sub-items, e (control assessment tool), i (peak flow results) and j (spirometry).

The main point of confusion for item 8e was over the definition of “control assessment tool” and is discussed in the general findings section. Respondents demonstrated one of two interpretations. This was understood as either a specific test or a tool in general. A number of respondents thought it was referring to a specific tool. One respondent said, “The Asthma Control Test is a patient administered test that is used to detect red flags with asthma.” He mentioned that other items in this questionnaire are questions on the ACT. Another respondent with the same interpretation even noted that “the ACT is copyrighted and this should be indicated in the survey.” Others also interpreted it as a specific test, even when they did not know what it was. One respondent admitted, “I have never used that. It’s not something I’m familiar with.” Someone else had the same perspective. She marked “never” because “that’s not the assessment tool I use.” Similarly, another respondent said she didn’t know what the ACT test is but that “we have our own tool.” A couple respondents were not sure whether it was asking about a specific or general tool. One person states, “I’ve never heard of the Asthma Control Test...maybe this is the same as our template?” Another asked the interviewer if this was about a particular tool. She said she is not familiar with it if it is, and her answer would be “never”. But if the question is about a general tool, then the answer is “always”. It seems clear that the parenthetical example is responsible for the confusion. Its capitalization implies it is referring to a specific test. This could be clarified, depending on the intent of the question.

Item i on peak flow had interpretations that were influenced by specialization (and the physician’s patient population) and patient compliance (loosely related to theory vs. practice). For example, many respondents (9) took factors into account that affect the ability to use peak flow. This was demonstrated most notably among pediatricians who noted the age of their

patients as a common influence on whether or not to use peak flow. Several respondents said that the test is ineffective with children, particularly at home. They may be too young to do it correctly or consistently. One person said for these reasons it does not give good results and is a waste of time. Thinking about her pool of patients, another respondent said she never asks about peak flow or spirometry. She said, “They are not very commonly used for the asthmatic patients I see.” When asked why, she said the asthma doctors in her area don’t use peak flow. There is only one pediatric asthma doctor in the area who does these tests and it’s “nearly impossible” to see him. He doesn’t accept Medicaid and the new patient wait list is “months long.” Overall the patients in her area experience many barriers to care. Another respondent had a similar thought process. He said peak flow “is one of those asthma management aspects that is effective and a good idea theoretically. But patients don’t do it for any sustained length of time at home, so in practice it’s not very effective.” His patient base was also from a fairly impoverished area.

Item j on spirometry carried a false assumption for some respondents. And, again, this was influenced by specialization, a larger theme discussed in the general results section. Those respondents who were general practitioners typically send patients out for this test rather than do it themselves. Even though the answer is “never”, that answer might imply that they do not do it because they don’t want to, when instead it means they do not do it because it’s not within their specialization. Additionally, a couple respondents who never perform the test themselves but *ask* their patients whether they’ve ever had it done answered “often” or “always”. The question does ask whether you “ask about the following items or perform the following tests”, but it’s unclear if item j is meant to be interpreted as something a doctor does, not something he or she asks about. A clarification along these lines would be beneficial to the instrument.

Finally, one respondent initially thought i and j were essentially the same thing. He said he was thinking of peak flow as being included in spirometry, and that’s how he interpreted questions 5 and 6. He said spirometry is the full-fledged test. He “never does the full study, but does do peak flow sometimes.” After this question, he answered them as separate categories.

**Question 9:**

For what percent of asthma visits do you use each of the following strategies to help patients control and manage their asthma?

*Mark (X) one box in each row.*

	0% (Never)	1–24% (Sometimes)	25–74% (Often)	75–100% (Almost always)	N/A
a. Provide a new or review an existing written asthma action plan outlining medications, triggers, and when to seek emergency care.	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>
b. Assessment by history of triggers at home (e.g., pets, mold, tobacco smoke)	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>
c. Assessment by history of triggers at school (e.g., mold, dust, exhaust) <i>Skip to 9d if you do not see children</i>	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>
d. Ask adult patients about their occupation and place of employment <i>Skip to 9f if you do not see adults</i>	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>
e. Assessment by history of triggers at the workplace (e.g., dust, fumes, chemicals) <i>Skip to 9f if you do not see adults</i>	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>
f. Testing for allergic sensitivity via skin or allergen-specific IgE (e.g., RAST) testing	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>
g. Assessment of daily use of controller medication (e.g., inhaled corticosteroids) for patients with persistent asthma	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>
h. Repeated assessment of inhaler technique	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>
i. Referral to a specialist <i>Skip to 10 if you are an asthma/allergy specialist</i>	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>



Findings: Some of the themes found in previous questions were apparent in this one as well. Respondent interpretations were influenced by considerations of patient compliance (theory vs. practice) and the nature of the visit (initial or follow-up). Format issues were also identified in this question.

First, the concept of patient compliance was found in this question. Respondents did not answer solely on what they believe is optimal medical practice. Some incorporated what they thought was practical in the real world. This was especially true for h (inhaler technique). Two respondents marked “never”, and explained that in theory it’s a good idea, but that they do not have extra inhalers in the office and the parents never remember to bring one in. This idea came up for action plans as well. One respondent said they are “great only in theory” because most patients don’t use them. As a result, a couple respondents expressed the idea that they concentrate on doing a few things that work well and that patients can work with and understand because “you can’t do all of them.”

Second, a few respondents noted that answers can vary depending upon the nature of the visit. One said he answered “often” because on the first visit he obtains full information; he does not do this routinely for every visit. He explained that the nature of the visit dictates what is done. For this reason he could see this question as asking, “Do I EVER do it, or do I do it on every visit?” He chose “sometimes” for most items and said these numbers look low because every visit is different – “You don’t do the same thing on follow-up visits that you do on first visits.” Another person also questioned whether “asthma visit” meant a new visit or a follow-up visit. She said she does not ask repeat patients about triggers at every visit because this information has already been asked and recorded. Another respondent gave the same logic and said that he documents their triggers at the first visit, but because they don’t usually change for a patient, he will assume they are the same on follow-up visits. “If I’ve tested once, I don’t need to do it again.” Note that this interpretive pattern is important to the extent that many respondents consider it, but arrive at different conclusions and methods for answering the question. This creates inconsistency in what the question is measuring. Some respondents think about what they do in initial visits, others think of what they do in follow-up visits, and still others take an average of what they do in both types of visits. Because the nature of the visit was salient to many respondents, the questions could benefit from a clarification in this regard.

Third, some format issues were identified with this question. One problem is related to column 5 (N/A). A couple respondents marked the last column (N/A) when they meant to check “almost always”. Additionally, when respondents were instructed to skip (in items c, d, e, and i) it was unclear whether they should leave the row blank or check column 5 (N/A) to indicate a skip pattern. Respondents did a combination of those things, and did so inconsistently. The N/A column could probably be eliminated. Finally, the skip instructions in c, d, e, and i were not consistently observed by respondents. For example, some pediatricians would answer item d about adults -- this relates back to question 1 where it was identified that pediatricians do see adults in their 20’s; hence the question can be interpreted as relevant. Other pediatricians answered “never” and explained their answer by saying that they never see adults. It is unclear how to correct this difficulty, particularly for pediatricians who are in many ways defined as seeing only child patients, but who in reality see patients who fall into an adult category.

**Question 10:**

Under which circumstances do you make the following recommendations about environmental exposures?

	<i>Mark (X) one box in each row.</i>		
	For most asthma patients	Only for patients with sensitivity to this trigger	Rarely or never recommend
a. Using dust mite control measures (e.g., mattress covers)	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>
b. Controlling household mold and pests (e.g., cockroaches)	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>
c. Removing pets from the home	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>
d. Avoiding pollen (e.g., limit outdoor time, close windows)	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>
e. Avoiding air pollution (e.g., ozone warnings)	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>
f. Making changes to cooking appliances (e.g., exhaust vents)	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>
g. Avoiding second-hand tobacco smoke	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>

**Findings:** Respondents did not have any particular difficulties answering the question. Only one put a question mark by the question and said, “It didn’t jump out what I was supposed to figure out.” She had to read it several times before she understood the task. No one else, however, expressed that sort of difficulty.

Answers were based on two overarching considerations. One interpretation was based on the nature of the environmental exposure, specifically whether a trigger was one that potentially affects everyone (like cigarette smoke) or that affects only those with an allergy to it (like pets). One respondent said that he discusses e and g (pollution and smoke, which he defined as irritants) with all patients because “people across the board react to them.” He explained that the others are “allergens” that affect only some people, so he will only talk about those items to people with sensitivities to them. Another respondent expressed the same idea by saying the “more universal irritants” he recommends to everyone. Another person put it more straightforwardly, “If you’re not allergic to pets, why would you talk about removing them?”

A second interpretation was related to the “theory vs. practice” theme discussed earlier. Many respondents answered this question by taking their patient population into account – they were not thinking only of what would be medically optimal. They incorporate into their practice their patients’ ability to comply with “doctor’s orders”. As a result, some respondents rarely mention items when their patients have little-to-no control over them. One respondent who serves a large, urban, low SES population said that they have no control over solving these problems. As another respondent said, “They’re lucky if they have a landlord that will turn on the heat.” Another respondent mentioned mites and roaches as something her patients can’t do anything about. Exhaust vents came up a few times a well, with respondents saying that their patients have no ability to alter their home environment. In these cases, it’s not that physicians think these environmental exposures are irrelevant, they are simply thinking about what is realistic for their patients. Analysts should be aware that this is an important dimension being captured by this question.

**Question 11:**

How do you use the following medications?

Mark (X) ALL that apply on each row.

	Symptom relief/acute exacerbation	Daily long term control therapy	Add on daily control therapy	For difficult to control asthma	Do not use
a. Short acting beta agonists (e.g., Albuterol)	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>
b. Inhaled corticosteroids (ICS)	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>
c. Long acting beta agonists (LABA) (e.g., Serevent/salmeterol, Foradil/formoterol)	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>
d. Combination medication that includes both LABA and ICS (e.g., Advair)	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>
e. Leukotriene modifiers (e.g., Singulair/montelukast)	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>
f. Anticholinergics (e.g., ipatropium, tiotropium)	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>
g. Methylxanthines (e.g., theophylline)	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>
h. Omalizumab/Xolair	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>
i. Short course of oral/injectable corticosteroids	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>
j. Long course of oral corticosteroids (>10 days)	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>

**Findings:** Format issues were observed in this question. Specifically, respondents had the tendency to miss the “mark all that apply” instruction. Adding this instruction to the question may help minimize this mistake.

Interpretation difficulties were also observed for the response categories, and this was especially (but not exclusively) true if respondents missed the “mark all that apply” instruction. Respondents had some difficulty seeing each category as distinct. One person said, “The categories are not necessarily separate. The second and fourth columns are really quite overlapping.” Another respondent was confused by the options as well, noting that “acute exacerbation should be its own column and not paired with symptom relief.” Another respondent also said that the first option was easy to understand, but that options 2, 3, and 4 ran together for him and “2 and 3 were the most muddled.”

Respondents also had difficulty understanding the logic of the response option arrangement. One respondent said the middle three categories were difficult for him to figure out. He wasn’t sure what the headings meant, so he treated them as mild, moderate, and severe symptoms. He also noted that “how the drugs are used can overlap the categories.” One respondent had to think about them for a while. He eventually concluded that, “The options represent a spectrum and the assessment of asthma is based on this spectrum.” But he noted that the terms used did not help him realize that right away. He also pointed out that for row a, options 1 and 4 jumped out at him, but that it was so obvious “it seemed like a bit of a silly question.” In a similar vein, another respondent noted that the categories were confusing because “they overlap and are more on a continuum than separate categories.” Finally, another respondent said of option one that “everything is for symptom relief” so it seems almost unnecessary. In sum, eight respondents had interpretation issues with the categories, yet all answered the questions. Question designers may consider ways to simplify the response options.

Finally, sub-items c and d required some clarification for a few respondents (4). One person mentioned that he got confused for c and d, and said that the word “alone” in item c would help clarify whether he’s using drugs in c and d together. He said he didn’t see that option until he got to the next question. Others had the same reaction. One respondent said she didn’t see d when she answered c and had to go back and change her answer. These respondents ultimately figured out the intent of the questions, but felt they would benefit from clarification.

**Question 12:**

Below are strategies that could be used to help patients control their asthma. Please specify whether you use each strategy, and next, *specify the one most important barrier (if any) that you face to using each strategy.*

	Do you use this strategy?		No barrier	Poor patient adherence	Low patient health literacy	Not effective	Lack of staff/equipment	Lack of training	Lack of time	Lack of payment
	Mark (X) one		Mark (X) one box for each row.							
<b>(a)</b> Written asthma action plans	1 <input type="checkbox"/> Yes	2 <input type="checkbox"/> No	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>	7 <input type="checkbox"/>	8 <input type="checkbox"/>
<b>(b)</b> A control assessment tool (e.g., ACT)	1 <input type="checkbox"/> Yes	2 <input type="checkbox"/> No	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>	7 <input type="checkbox"/>	8 <input type="checkbox"/>
<b>(c)</b> Home peak flow monitors	1 <input type="checkbox"/> Yes	2 <input type="checkbox"/> No	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>	7 <input type="checkbox"/>	8 <input type="checkbox"/>
<b>(d)</b> In-office spirometry	1 <input type="checkbox"/> Yes	2 <input type="checkbox"/> No	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>	7 <input type="checkbox"/>	8 <input type="checkbox"/>
<b>(e)</b> Educating patients to recognize symptoms	1 <input type="checkbox"/> Yes	2 <input type="checkbox"/> No	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>	7 <input type="checkbox"/>	8 <input type="checkbox"/>
<b>(f)</b> Educating patients to avoid risk factors	1 <input type="checkbox"/> Yes	2 <input type="checkbox"/> No	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>	7 <input type="checkbox"/>	8 <input type="checkbox"/>
<b>(g)</b> Involve patients in treatment decision-making	1 <input type="checkbox"/> Yes	2 <input type="checkbox"/> No	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>	7 <input type="checkbox"/>	8 <input type="checkbox"/>
<b>(h)</b> Observe inhaler use by patients	1 <input type="checkbox"/> Yes	2 <input type="checkbox"/> No	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>	7 <input type="checkbox"/>	8 <input type="checkbox"/>
<b>(i)</b> Advise patients to change their home environment	1 <input type="checkbox"/> Yes	2 <input type="checkbox"/> No	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>	7 <input type="checkbox"/>	8 <input type="checkbox"/>
<b>(j)</b> Advise employed patients to seek changes in the work environment	1 <input type="checkbox"/> Yes	2 <input type="checkbox"/> No	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>	7 <input type="checkbox"/>	8 <input type="checkbox"/>
<b>(k)</b> Schedule routine follow-up visits to assess asthma control	1 <input type="checkbox"/> Yes	2 <input type="checkbox"/> No	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>	7 <input type="checkbox"/>	8 <input type="checkbox"/>

**Findings:** This question was complicated in many ways and may be considered the most problematic question in the instrument. In fact, the first reaction to this question by several respondents sums this up. One respondent said, “I think this is just too much. I was confused..there were all these different boxes.” Another person said, “This took some thought.” A third respondent, upon turning the page and seeing this question, let out an “oh, no”.

Generally the question was seen as complicated, and there was very little consistency in interpretations among respondents. The most obvious complication and response variation is demonstrated in how respondents chose to answer. Some chose a barrier only when answering “yes”, others chose a barrier only when answering “no”, and many chose barriers when

answering either “yes” or “no”. (Some chose more than one barrier, despite the instruction to pick the most important one.)

It was not entirely clear which course of action is the one preferred by question designers. However, the reason *why* this occurred is twofold. The first reason relates to the interpretation respondents had of the term “barrier”. The second reason is related to the first. There is an implicit assumption in the question that a physician would *want* to use the strategy in question. In some cases, this is a false assumption that creates underlying difficulties for respondents trying to formulate answers.

The first explanation for why respondents chose three different paths to answering this question relates to their definition of “barrier”. It was understood as something that either prevents a physician from using a strategy or as something that serves as a hindrance, but doesn’t ultimately prevent a physician from using it. Respondents who understood barrier as something that prevents the use of a strategy would not choose a barrier when answering “yes” to the question – although they didn’t consistently mark the “no barrier” column either. (To do so almost implies that a barrier is only a hindrance, which would not match their interpretation.) On the other hand, respondents who understood “barrier” as only a hindrance would mark a barrier when answering either “yes” or “no” to using a strategy. On the surface it may seem illogical to choose a barrier when a respondent is actually using a strategy. However, this is true only if a barrier is seen as a preventative factor.

The second explanation for why respondents chose three different paths to answering this question is the underlying – and sometimes false – assumption embedded in the question. That is, the question essentially assumes a physician would *want* to use each of the strategies mentioned, and would not be doing so only if there were something standing in their way. However, the narratives of several respondents illustrated that sometimes they don’t use a strategy because they don’t want to. For example, one respondent said “no” to b (control assessment tool). She said she doesn’t use the ACT because “I just like my way of doing it better.” For another respondent this came up for use of spirometry. She answered “no” and then chose “lack of equipment” as the barrier. However, she explains that they don’t have the equipment because they wouldn’t use it. She said the office doesn’t need it because she manages asthma well without it. Another respondent had a similar situation. She also marked “lack of equipment”, but said that she wouldn’t do spirometry anyway. “In the ER I would never do that.” In those cases, in particular, the answers recorded do not capture reality as the respondent sees it. A different respondent explicitly identified this assumption and argued that there needs to be a column for “not clinically relevant/don’t believe in it”.

A third complication in the question is the interconnectedness of the list of barriers. This often made it difficult to pick one, at least one that respondents felt was an accurate representation of their situation. For example, in items g (involve patients) and a (action plans) one respondent had a difficult time picking one barrier because in her mind they ran together. For g she said she marked “lack of time”, but she could also put “not effective” or she could just as easily put “low health literacy”. She specifically noted that the latter two choices are related to lack of time, so she felt it was difficult to pick one that best represents her barrier. She said, “The choices aren’t

always so great [in this question].” Several other respondents expressed the same sentiment in explaining why it was difficult to answer the question.

Sub-item b (control assessment tool) presented difficulties present in question 8 and discussed in the section on larger themes. Some respondents did not know whether the question was referring to a specific or a general tool. One person asked, “Any old assessment tool?” Another person wrote in the margin of the survey that she did not know what this was. She noted that in a previous question the full term was used, but here only an acronym was used, which de-emphasizes its importance. To her this suggested that this is not referencing a specific test. In the earlier question she interpreted it to mean a specific test, but here she thinks of it as a general one. Others, however, did interpret this as a specific test. One respondent said, “The ACT is tricky and complicated. I’ve taken a different track.” Two other respondents said they didn’t know what the ACT test was.

Finally, item j (advise employed patients) should probably have a skip instruction. Pediatricians who see only children left it blank, but noted there should be an instruction to that effect.

**Question 13:**

. How often do you encounter these patient concerns or misunderstandings about asthma therapies?	<i>Mark (X) one box in each row.</i>			
	Never (0%)	Sometimes (1–24%)	Often (25–74%)	Almost always (75–100%)
<b>(a)</b> Misunderstanding of medication risks or side effects, or belief in myths (e.g., muscle development, addiction)	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>
<b>(b)</b> Concern about short-term side effects from inhaled corticosteroids (e.g., thrush)	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>
<b>(c)</b> Concern about long-term side effects of inhaled corticosteroids (e.g., delayed growth in children)	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>
<b>(d)</b> Confusion between symptom relief medications and daily control medications	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>

**Findings:** Unfortunately, lack of time prevented a full study of this question. Only one possible issue arose from the limited data set. Sub-item a has the potential to be double barreled, but only one respondent noted this – misunderstandings are different from belief in myths. Others, however, expressed no difficulty collapsing the two concepts in their mind.

**Question 14:**

Please indicate your role?

- 1  Sample physician
- 2  Other clinical role (e.g., PA, NP, RN)
- 3  Other office staff

**Findings:** This was not probed extensively, but one finding was undeniable. Eight respondents said they weren’t sure what “sample physician” meant and made their choice largely by process of elimination – they knew they were not any of the other categories. While this did not cause response error per se, it would clarify the instrument to simplify this survey jargon.