Published in final edited form as:

Clin Pediatr (Phila). 2009 June ; 48(5): 493–498. doi:10.1177/0009922808330110.

Physician Communication Regarding Cost When Prescribing Asthma Medication to Children

Minal R. Patel, **Janet M. Coffman, PhD**, **Chien-Wen Tseng, MD, MPH**, **Noreen M. Clark, PhD**, and **Michael D. Cabana, MD, MPH**

Center for Managing Chronic Disease, University of Michigan, Ann Arbor, Michigan (MRP, NMC); Departments of Pediatrics (MDC), Epidemiology and Biostatistics (MDC), and Family and Community Medicine (JMC), and the Philip R. Lee Institute for Health Policy Studies (JMC, MDC), University of California, San Francisco, California; Department of Family Medicine and Community Health, University of Hawaii John A. Burns School of Medicine (CWT) and Pacific Health Research Institute (CWT), Honolulu, Hawaii

Abstract

Children with asthma require multiple medications, and cost may be a barrier to care. The purpose of this study was to determine how often physicians ask about cost when prescribing new asthma medication and to identify factors influencing queries. We surveyed pediatricians and family physicians and asked whether they asked about cost when prescribing new asthma medication and if cost was a barrier to prescribing. One third of physicians (35%) reported that concern for cost to the family was a barrier to prescribing. Half reported not asking their patients about drug costs. Pediatricians were less likely to ask about cost (odds ratio [OR] = 0.43; 95% confidence interval [CI] = 0.20–0.92) when compared with family physicians. For every 10% increase in the number of privately insured patients, a physician was less likely to ask about cost (OR = 0.83; 95% CI = 0.74–0.94). Communication about medication costs should be included in childhood asthma management.

Keywords

pediatrics; family medicine; asthma; physician–patient relations; prescription cost; communication barriers

Patients with asthma and other chronic illnesses are particularly susceptible to cost pressures because many conditions require management with multiple medications. These pressures intensify during economic crises.[1] Asthma is the most prevalent pediatric chronic illness, affecting 5.1 million children.[2] Some medications used to control asthma are available only as brand-name drugs. Health plans often charge higher copayments for brand-name drugs than generic drugs, and some plans do not cover them at all. The National Heart, Lung, and Blood Institute (NHLBI) *Guidelines for the Management of Asthma* suggest that an integral

Address correspondence to: Michael D. Cabana, MD, MPH, Division of General Pediatrics, UCSF Children's Hospital, University of California, San Francisco, 3333 California Street, Laurel Heights Bldg #245, San Francisco, CA 94118; michael.cabana@ucsf.edu.

The authors have no conflicts of interest to declare.

part of comprehensive asthma management is for physicians to ask their patients or the primary caretaker about the out-of-pocket costs they incur when prescribing asthma medications. The guideline specifically states that "the choice of medication includes … anticipated patient and family adherence with the treatment regime and cost."[3]

Among adults with chronic illnesses, high out-of-pocket medication costs have been shown to decrease adherence to hypertension, diabetes, hypercholesterolemia, and heart disease medications,[4] which, in turn, have been associated with increased hospitalizations and emergency room visits.[5] High out-of-pocket costs have also been associated with decreased adherence to inhaled corticosteroids (ICS) among elderly adults.[6] Ungar et al[7] found that parents of children with high cost-sharing were less likely to purchase bronchodilators, ICS, and leukotriene receptor antagonists when compared with those with low cost-sharing. Thus, physicians have a critical role in protecting the health of their patients by knowing whether their patients with asthma can afford the medications they are prescribed.

Although several studies have looked at physician–patient communication about cost in adult populations,[8–12] we are not aware of studies that have looked at this issue in childhood asthma care. In adult literature, it is clear that communication between patients and physicians about medication costs is frequently lacking[8,9,11] although most patients wish to discuss cost with their physicians.[8] Communication about medication costs also seem to vary by physician characteristics (eg, specialty), practice characteristics (eg, community clinics), and their patient population characteristics (eg, insurance status).[11]

The purpose of this study is to find out how often primary care physicians caring for children with asthma report initiating cost discussion with their patients and their families when prescribing new asthma medications and whether certain physician or practice characteristics predict whether a physician will ask a patient about cost. We hypothesized that there are differences in initiating cost discussion with patients given physicians' characteristics, opinions, and practice settings.

Methods

We conducted a national cross-sectional survey of primary care physicians who care for children with asthma. The study was approved by the Institutional Review Board at the University of Michigan Health System and the Committee on Human Research at the University of California, San Francisco. This data set was previously used for an analysis of barriers to adherence to the NHLBI asthma guidelines.[13]

Subjects

From the American Medical Association (AMA) master file of physicians in the United States, we randomly selected 450 pediatricians and 450 family physicians. This data set includes all allopathic and most osteopathic physicians *regardless* of membership with the AMA.

Between September and November 2004, we sent a cover letter, a 14-page questionnaire, and a prepaid return envelope to each subject. We sent up to 2 reminder surveys to

nonrespondents. After 3 attempts, we contacted nonrespondent physicians by telephone to confirm that they had received the survey. We did not offer an honorarium for participation.

Survey Instrument

The survey is described in a previous article[13] and was developed based on review of the literature and physician focus groups.[14,15] To estimate how often physicians ask about cost when prescribing a new asthma medication, we asked, “When prescribing a new asthma medicine, how often do you ask the family about their out-of-pocket costs for the new medicine?” The questionnaire used a 5-point scale for respondents (1 = never; 5 = always).

To evaluate cost as a potential barrier for patients, we asked physicians if, in general, they felt that “the cost of prescription would place too great a financial burden on the family” and if this affected their likelihood of prescribing daily ICS medication (yes/no).

Physicians reported gender, the year they completed residency training completion, board certification, if they had an academic affiliation (precepted residents or medical students, or had a full-time faculty appointment), and their practice setting (solo practice, single-specialty group practice, multispecialty group practice, hospital clinic, or federal, state, or public health clinic). Because of the small numbers, we collapsed hospital clinic and federal, state, or public health clinic into “other” for the analyses. We also asked physicians to estimate the percentage of their patients by insurance status (ie, private insurance, Medicaid, or self-pay).

Analyses

Our outcome of interest was physicians’ self-report of how often they asked families about out-of-pocket medication costs when prescribing a new asthma medication. We dichotomized the dependent variable with a response of 4 or 5 indicating “asking” and a response of 1 to 3 indicating “not asking.”

Chi-squared analysis was used to compare each of the independent variables (demographic characteristics, practice characteristics, and a physician perception that cost was a potential barrier to prescribing a daily medication) with physicians’ self-reported indication of asking about cost.

We used multivariate logistic regression (SAS 9.1; SAS Institute Inc, Cary, NC) to analyze the separate associations between factors associated with a physician asking a family about cost. We controlled for demographic factors that may be associated with asking about cost, such as physician gender, years in practice, academic affiliation, and practice setting. Statistical significance was defined at $P < .05$.

Results

Sample

From our sample listing of 900 physicians, there were 206 incorrect addresses, leaving 694 potential respondents. A total of 343 of the 694 returned our questionnaire. We applied a standardized formula defined by the Council of American Survey Research Organizations to

calculate a 49% response rate.[16] Based on data from the AMA master file, the nonrespondents did not differ substantially from respondents in terms of gender, median age, board certification, and practice setting. Of the 343 respondents, 235 were determined to be eligible, with the remaining ineligible because they were not in primary care practice (n = 82), were in training (n = 6), practiced fewer than 20 hours per week (n = 19), or incompletely described their practice setting (n = 2). Thus, the final analyses are based on the 235 fully eligible respondents. Table 1 describes the respondent characteristics. Forty-seven percent (n = 110) of the physicians were male, and 53% (n = 124) were female. Thirty-seven percent (n = 86) were family practice physicians, and 63% (n = 149) were pediatricians.

Frequency of Asking About Medication Costs

More than one third of the physicians (35%) reported that concern for the financial burden on the family was a barrier to prescribing daily ICS medication (Table 1). Despite this, half of the physicians said that they did not discuss cost regularly with families when prescribing a new asthma medication. Even among those physicians who felt that medication cost was a barrier for their patients, only 61% reported regularly discussing cost when prescribing.

Factors Associated with Asking About Costs

Table 2 shows all bivariate analyses. Factors that were significantly associated with asking about cost include physician perception that the cost of prescription would place too great a financial burden on the family ($P = .03$) and training in family medicine ($P < .01$). Physicians who asked about cost had a higher percentage of patients who were self-pay ($P = .02$) and a lower percentage who were privately insured ($P < .01$).

The variables included in the multivariate model were physician perception that the cost of prescription would place too great a financial burden on the family, specialty, and mean percentage of privately insured patients in the practice, controlling for years in practice, physician gender, academic affiliation, and typical practice setting. In multivariate analyses, we found that pediatricians were less likely to report asking a family about cost (odds ratio [OR] = 0.43; 95% confidence interval [CI] = 0.20–0.92; $P = .03$) when compared with family practice physicians (Table 3). Physicians who had higher percentages of privately insured patients were less likely to ask a family about cost (OR = 0.83; 95% CI = 0.74–0.94; $P < .01$).

Discussion

In our study, we found that only half of the physicians caring for patients with asthma asked a parent/caregiver about cost when prescribing new asthma medication. This occurred much less frequently among pediatricians, with only 2 of every 5 pediatricians inquiring about this issue when compared with two thirds of family physicians. This national study is unique and is the first we are aware of to describe the lack of patient–physician communication about medication costs with regard to children, and specifically with their asthma medication treatment. Our findings indicate that children's physicians may be even less likely than adults' physicians to communicate about cost, suggesting missed opportunities in

consideration of financial barriers to medications and risk of nonadherence in asthma.[7] Furthermore, although family physicians and pediatricians both care for children with asthma, we document differences in how often physicians from these 2 specialties ask about medication costs.

In our study, pediatricians were less likely to ask parents/guardians about cost when compared with family practitioners. We suspect that this difference may be because of differences in training or clinical experience. Family physicians may be more familiar with patients' financial difficulties in obtaining medications because of their experience caring for adults who are more likely than children to lack drug coverage. For example, 1 in 4 elderly patients prior to the start of the Medicare Drug Benefit in 2006 had no drug coverage.[17]

Additionally, the dynamics within a pediatric patient visit may be different because a third party, the parents/guardians, are involved. Parents/guardians may be reluctant to discuss issues or implications of cost to their family in the presence of their children.[18] Clinical training for physicians, particularly pediatricians, may need to include how to discuss sensitive issues with parents, such as medication cost, as well as potential solutions to maintain compliance with medications for patients and families who face cost pressures.

We also found that physicians with a higher percentage of privately insured patients within their practice were less likely to ask their patients about cost. This may be because of an assumption that privately insured patients are less susceptible to cost pressures because they have higher income and bear less relative cost burden for medications than Medicaid and self-pay patients. This may be an inaccurate perception because in the adult population even patients with drug insurance are vulnerable to nonadherence due to medication costs.[12,19] In addition, some children are enrolled in private health plans that have high deductibles or only cover generic drugs. Physicians were also more likely to discuss cost if they perceived that patients would have financial barriers to filling their medications. Whereas a selective approach seems sensible and practical in a busy practice, physicians often fail to identify those patients who have trouble paying for medications or those patients who have skipped or stopped medications due to cost.[4]

Regardless of the extent of cost that patients face based on their insurance status, all patients should be asked about the cost they bear when being prescribed new asthma medication. As part of comprehensive asthma management outlined in the NHLBI asthma guidelines,[3] it is important to address all aspects of care, including cost, to maintain medication adherence and reduce asthma exacerbations. Provider avoidance of the issue of medication cost burden may have subsequent clinical implications. The burden of cost to patients has also been shown to adversely affect adherence to medications, including asthma medications among children.[7]

Although it may be difficult to initiate a discussion about costs, providers can use specific communication strategies. Specific strategies in working with patients who face cost pressures include stopping nonessential medicines or using them on an as-needed basis, splitting pills, using office samples, taking advantage of governmental and private pharmaceutical assistance programs, encouraging patients to shop around for the lowest

prices on generic equivalents as soon as they become available, and switching to a less expensive but equally effective medication.[20] This last strategy may not be applicable to ICS and other asthma controller medications, because few are available in generic versions, aside from oral corticosteroids, which are not recommended for daily use unless adequate symptom control cannot be achieved with other medications. Both physicians and patients also report barriers to communication about cost in adult studies,[8] including lack of time and inadequate access to medication costs at the point of prescribing on physicians' part and not thinking that physicians can do anything on patients' behalf. As a result, it will be important to further study whether these reasons are also applicable for children's asthma management. Future studies should inquire about the patients' perspective regarding cost discussion with their health care provider.

There are several limitations to this study. Because this study was cross-sectional, causality cannot be determined. Physicians who are sensitive to financial burden may be more likely to ask families about costs. However, it is equally likely that physicians who ask about costs may be more likely to perceive families as having financial burdens, because they are more familiar with their financial situations. Future studies should address the direction of this relationship more closely. We also relied on physicians' self-report of whether they discussed cost with patients. Literature indicates that this is likely to be an overestimate because patients' reports of communication about costs are much lower than physicians' estimate of rates of communication about costs.[8] Thus, rates of patient–physician communication about medication costs for children's asthma may be even lower than we documented. The return rate on the survey was only 49%, and more pediatricians responded than family physicians. The sample may be biased in favor of pediatricians' practices and physicians who are more connected to and supportive of academic research. However, the overall response rate is similar to response rates from other cross-sectional physician surveys.[21] Finally, we also dichotomized the dependent variable, whether a physician asks a patient about cost from a 5-point scale, thus the ability to note subtle distinctions may be lost. To address this, sensitivity analysis was conducted by dichotomizing the dependent variable with a response of 5 indicating "asking" and a response of 1 to 4 indicating 'not asking." Pediatricians and physicians with more privately insured patients within their practice were still found to be significantly less likely to ask their patients about cost.

Conclusion

Only half of physicians asked about cost when prescribing new asthma medications for children, and pediatricians were significantly less likely to ask than family physicians. Not considering these issues can have subsequent clinical implications if physicians miss opportunities to detect this potential barrier to medication adherence. Interventions to improve asthma care should include the integration of cost-discussion techniques in clinical training and continuing medical education initiatives.

Acknowledgments

The study described in this article was funded by the National Institutes of Health (HL 70771).

References

1. Saul S. In sour economy, some scale back on medications. New York Times. Oct 22.2008 :A1.
2. Centers for Disease Control. [Accessed August 17, 2008] Asthma and allergies. 2007. http://www.cdc.gov/HealthyYouth/asthma/index.html
3. National Heart, Lung, and Blood Institute. Expert Panel Report 2: Guidelines for the Management of Asthma. Bethesda, MD: National Heart, Lung, and Blood Institute; 1997. (National Institutes of Health Publication No 97-4051)
4. Piette JD, Heisler M, Wagner TH. Cost-related medication underuse: do patients with chronic illnesses tell their doctors? Arch Intern Med. 2004; 164:1749–1755. [PubMed: 15364667]
5. Bender BG, Rand C. Medication non-adherence and asthma treatment cost. Curr Opin Allergy Clin Immunol. 2004; 4:191–195. [PubMed: 15126940]
6. Fung V, Tager IB, Brand R, Newhouse JP, Hsu J. The impact of generic-only drug benefits on patients' use of inhaled corticosteroids in a Medicare population with asthma. BMC Health Serv Res. 2008; 8:151–160. [PubMed: 18638405]
7. Ungar WJ, Kozyrskyj A, Paterson M, Ahmad F. Effect of cost-sharing on use of asthma medication in children. Arch Pediatr Adolesc Med. 2008; 162:104–110. [PubMed: 18250232]
8. Alexander GC, Casalino LP, Tseng CW, McFadden D, Meltzer DO. Barriers to patient-physician communication about out-of-pocket costs. J Gen Intern Med. 2004; 19:856–860. [PubMed: 15242471]
9. Reichert S, Simon T, Halm EA. Physicians' attitudes about prescribing and knowledge of the costs of common medications. Arch Intern Med. 2000; 160:2799–2803. [PubMed: 11025790]
10. Shrank WH, Asch SM, Joseph GJ, et al. Physicians' perceived knowledge of and responsibility for managing patients' out-of-pocket costs for prescription drugs. Ann Pharmacother. 2006; 40:1534–1540. [PubMed: 16912246]
11. Pham HH, Alexander GC, O'Malley AS. Physician consideration of patients' out-of-pocket costs in making common clinical decisions. Arch Intern Med. 2007; 167:663–668. [PubMed: 17420424]
12. Tseng CW, Tierney EF, Gerzoff RB, et al. Race/ethnicity and economic differences in cost-related medication underuse among insured adults with diabetes: the Translating Research Into Action for Diabetes Study. Diabetes Care. 2008; 31:261–266. [PubMed: 18000177]
13. Cabana MD, Abu-Isa H, Thyne SM, Yawn B. Specialty differences in prescribing inhaled corticosteroids for children. Clin Pediatr(Phila). 2007; 46:698–705. [PubMed: 17502451]
14. Cabana MD, Rand CS, Becher OJ, Rubin HR. Reasons for pediatrician nonadherence to asthma guidelines. Arch Pediatr Adolesc Med. 2001; 155:1057–1062. [PubMed: 11529809]
15. Cabana MD, Ebel BE, Cooper-Patrick L, Powe NR, Rubin HR, Rand CS. Barriers pediatricians face when using asthma practice guidelines. Arch Pediatr Adolesc Med. 2000; 154:685–693. [PubMed: 10891020]
16. Frankel, LR. On the Definition of Response Rates: A Special Report of the CASRO Task Force on Completion Rates. Port Jefferson, NY: Council of American Survey Research Organizations; 1982.
17. Tseng CW, Brook RH, Keeler E, Mangione CM. Impact of an annual dollar limit or "cap" on prescription drug benefits for Medicare patients. JAMA. 2003; 290:222–227. [PubMed: 12851277]
18. Bender BG, Bender SE. Patient-identified barriers to asthma treatment adherence: responses to interviews, focus groups, and questionnaires. Immunol Allergy Clin North Am. 2005; 25:107–130. [PubMed: 15579367]
19. Tseng CW, Dudley RA, Brook RH, et al. Elderly patients' preferences and experiences with providers in managing their drug costs. J Am Geriatr Soc. 2007; 55:1974–1980. [PubMed: 17944892]
20. Alexander GC, Tseng CW. Six strategies to identify and assist patients burdened by out-of-pocket prescription costs. Cleve Clin J Med. 2004; 71:433–437. [PubMed: 15195778]
21. Cummings SM, Savitz LA, Konrad TR. Reported response rates to mailed physician questionnaires. Health Serv Res. 2001; 35:1347–1355. [PubMed: 11221823]

Table 1

Respondent and Practice Characteristics

Factor	Percentage (n)
Male gender	47% (n = 110)
Mean years in practice (SD)	15.3 (10.0)
Specialty	
Pediatrics	63% (n = 149)
Family practice	37% (n = 86)
Academic affiliation	49% (n = 113)
Practice setting	
Solo	14% (n = 33)
Single-specialty group	48% (n = 111)
Multispecialty group	28% (n = 64)
Other	10% (n = 22)
Patient payer mix	
Medicaid, % mean (SD)	25.7 (25.9)
Self-pay, % mean (SD)	7.3 (9.7)
Private, % mean (SD)	62 (29.6)
Ask about cost	50% (n = 115)
Physician belief that cost of prescription would place too great a financial burden on the family	35% (n = 81)

Note: SD = standard deviation.

Table 2

Associations Between Physician/Practice Characteristics and Asking About Cost

Factors	Ask About Cost	Not Ask About Cost
Male gender	44% (n = 47)	56% (n = 60)
Mean years) in practice (SD	14.5 (9.3)	15.8 (10.7)
Physician belief that cost of a prescription may place a financial burden on the family[a]	61% (n = 49)	39% (n = 31)
Specialty[b]		
Pediatrics	41% (n = 60)	59% (n = 85)
Family practice	65% (n = 55)	35% (n = 30)
Academic affiliation	53% (n = 58)	47% (n = 51)
Practice setting		
Solo (n = 32)	59%	41%
Single-specialty group (n = 104)	50%	50%
Multispecialty group (n = 63)	46%	54%
Other (n = 22)	55%	45%
Patient payer mix		
Medicaid, % mean (SD)	28.9 (25.1)	23.0 (26.4)
Self-pay, % mean (SD)[a]	8.8 (10.9)	5.8 (8.2)
Private, % mean (SD)[b]	57 (28)	66.7 (30.3)

Note: SD = standard deviation.

[a] Significant association ($P < .05$).

[b] Highly significant ($P < .01$).

Table 3

Multivariate Model Showing Odds of Asking About Cost

	Asking About Cost	
Factor	**Odds Ratio**	**95% Confidence Interval**
Physician belief that cost of a prescription may place a financial burden on the family	0.74	0.37–1.49
Pediatrician[a]	0.43	0.20–0.92
Private insurance[b] (for every 10% increase)	0.83	0.74–0.94
Years in practice (for every additional year)	0.99	0.96–1.03
Male gender	0.65	0.33–1.29
Academic affiliation	1.09	0.59–2.02
Practice setting		
Solo practice	1.00	Reference
Single-specialty practice	0.64	0.24–1.67
Multispecialty practice	0.56	0.20–1.56
Other	0.34	0.08–1.39

[a] Significant association ($P < .05$).

[b] Highly significant ($P < .01$).