Asthma Educational Seminar Targeting Medicaid Providers

Susan L Bratton MD MPH, Michael D Cabana MD MPH, Randall W Brown MD MPH, Diane F White RRT, Ying Wang MSc, Sylvia W Lang PhD, and Noreen M Clark PhD

BACKGROUND: Medicaid-insured children have high risk of asthma but are less likely to receive care in keeping with national guidelines. We targeted providers who care for a large proportion of Medicaid-insured children and presented a 2-session multimedia asthma-education seminar that emphasizes communication and teaching techniques, to enhance providers' asthma-care teaching skills. METHODS: Five Medicaid-approved health maintenance organizations recruited pediatric primary-care providers. Providers were surveyed at baseline, 6 months, and 12 months to determine if they reported changes in their use of certain asthma-care communication techniques. RESULTS: Fifty-three of 70 participating providers completed the program and initial survey. They reported that 50% (median) of their patients were insured by Medicaid. At baseline, providers reported they were very confident of their asthma knowledge; however, they were less confident in interactions with patients/families regarding asthma self-management skills. Providers reported use of written plans less than half of the time. The response rate was 60% at 6 months and 71% at 1 year. Twenty-eight providers completed all 3 surveys. They reported significantly more frequent use of communication and counseling techniques that involved patient/parent asthma education and self-management skills at the 6-month point, that were partly sustained at 1 year. Reported provision of written asthma plans to patients had increased significantly at 6 months, but that increase was not sustained at the 1-year point. CONCLUSIONS: The seminar significantly enhanced knowledge of specific communication techniques related to asthma-teaching goals and reported use of asthma action plans to enhance self-management skills; however, these practices appear to need frequent reinforcement. *Key words: asthma guidelines, inhaled corticosteroids, self-management, asthma action plan, Medicaid.* [Respir Care 2006;51(1):49–55. © 2006 Daedalus Enterprises]

Introduction

Asthma, the most common chronic disease of childhood, has major public health and financial consequences.[1] Good caregiver-provider communication regarding asthma therapies and asthma knowledge is critical to encourage patients and families to be compliant with the therapeutic regimen. The need for teaching patients/parents asthma self-management skills was recently emphasized in published action items regarding improved care.[2]

Clark et al have reported on an interactive self-regulation and problem-focused physician-education seminar, given in 2 sessions, that emphasizes asthma guidelines as well as provider communication and teaching skills. That program, given to physicians, significantly decreased emergency department and in-patient use among their patients, compared to control patients whose doctors did not receive the teaching program.[3–4] Parents also rated the involved physicians as better communicators and rated their inter-

At the time this work was done, Susan L Bratton MD MPH was affiliated with the Department of Pediatrics, University of Michigan Health System, Ann Arbor, Michigan. Michael D Cabana MD MPH, Randall W Brown MD MPH, Diane F White RRT, Ying Wang MSc, and Noreen M Clark PhD are affiliated with Department of Pediatrics, University of Michigan Health System, Ann Arbor, Michigan. Noreen M Clark PhD is also affiliated with the Department of Health Behavior and Health Education, University of Michigan School of Public Health, Ann Arbor, Michigan. Sylvia W Lang PhD is affiliated with the University of Michigan School of Dentistry, Ann Arbor, Michigan.

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Correspondence: Susan L Bratton MD MPH, Department of Pediatrics, University of Utah, 295 Chipeta Way, Salt Lake City UT 84113. E-mail: susan.bratton@hsc.utah.edu.

actions with the physicians more positively than did the control parents' reports. These beneficial effects were also seen among low-income patients whose providers received the education program.[5]

We used this interactive physician program[3] to target primary-care providers who treat a large Medicaid-insured pediatric population. Minority and low-income children are a high-asthma-risk population because they have both greater risk for having asthma and are less likely to receive optimal asthma care.[6–7] Our team presented the asthma-education seminar for primary-care providers on 6 separate occasions (2 sessions per event). Unlike previous studies, we focused presentations on providers who care for a large number of Medicaid-insured children. To the program we added specific teaching cases that relate to care of children from low-income families, but we did not otherwise modify the seminar. The cases emphasized barriers to asthma care that can affect children insured by Medicaid. We surveyed providers who attended the seminars regarding their asthma teaching practices and thoughts regarding Medicaid-insured pediatric patients. The purpose of this study was to determine if the education program significantly changed provider-reported use of communication techniques and teaching practices for their asthma care of Medicaid-insured pediatric patients. We report the findings of the provider surveys.

Methods

Organizational Partners and Providers

After approval by the University of Michigan's institutional review board, we contacted managed-care organizations in Michigan that provide medical care for large Medicaid populations.[8] One managed-care organization declined to participate. All study of human subjects was in keeping with the Helsinki Declaration of 1975, as revised in 1983. In Wayne County we partnered with 2 of the 3 Medicaid-qualified managed-care organizations with the largest proportion of Medicaid-insured patients. Likewise, in Genesee County we recruited from 2 of the 3 Medicaid-qualified managed-care organizations with the largest proportion of Medicaid-insured patients, and in Kalamazoo County, the largest Medicaid-qualified managed-care organization agreed to participate. Pediatric primary-care providers were recruited by each managed-care organization. There was no cost for providers to attend the seminar. The seminar was approved for continuing-medical-education credit of 5 hours for those who completed the program. A meal was provided during each session.

Providers received a complete toolkit of asthma-education materials, including patient handouts, asthma action plans, asthma placebo devices, educational posters, and Web-site information. The educational materials were professionally prepared and printed. This included the American Academy of Pediatrics Asthma Guidelines and the Michigan Department of Community Health Asthma Blueprint for Action, which contains information regarding asthma care as well as asthma resources within the state.[9–10]

The kit also included asthma action plans in multiple languages (English, Arabic, and Spanish), samples of medication-delivery devices and peak flow meters, as well as a poster from the American Lung Association Open Airways for School program.[11] Finally, a copy of the program slides for the cases was included in the toolkit.

Educational Program

The seminar is designed to accommodate 10–12 health-care providers per session. The program includes brief lectures from a local asthma expert, a video showing effective clinician-teaching and communication behavior, case studies regarding clinical issues, a protocol for physicians to assess their own communication-related behavior, a review of important messages to communicate and protocol for their delivery, as well as a series of materials to distribute to families.[3,12,13] We augmented the program with 3 case studies, which emphasized barriers to asthma care specific to Medicaid patients. These case studies were developed from themes identified by caregiver focus groups of asthmatic children insured by Medicaid, and they were structured in a problem-based format. The cases emphasized environmental triggers (eg, dust mites, cockroaches, cigarette smoke), psychosocial stresses (eg, living in a high-crime area, multiple caregivers), processes of care (eg, inconsistent medical providers, discontinuous plan enrollment, equipment and supplies limitations), and health beliefs regarding anti-inflammatory therapy.

To standardize the presentation, a formal 8-hour session was used to train seminar faculty. Faculty included a local primary-care leader, an asthma expert, and a behavioral scientist/health educator. The leaders were identified through local institutions and organizations, including children's hospitals, professional groups, and medical societies. Each team received a 1-day training in the model, which included a run-through of the program, identification of tasks, hints for successful implementation and facilitation of case-study discussion, as well as the teaching materials.[13] Two of the instructors who taught in all sessions had extensive experience with the program material.

Data Collection and Analysis

Targeted health-care providers included primary-care pediatricians, family practitioners, nurse practitioners, and physician assistants. Seventy of 299 (23%) solicited pro-

viders agreed to participate, and 53 completed the program and agreed to be surveyed. Providers were surveyed prior to the initial session, and at 6 months and 1 year later. They received a $50 inducement to return the 6-month and 12-month surveys. Participants were mailed up to 2 surveys and were then contacted via telephone call from a research associate, and finally by a study physician to encourage participation with survey completion. The response rate at 6 months was 60% and at 1 year was 77%. The survey included some fill-in-the-blank, rank, and Likert-scale type questions related to confidence in using specific communication techniques (eg, identifying asthma triggers, and discussing asthma medications and adverse effects) and their estimated frequency of using certain communication strategies in their asthma practice (eg, giving written instructions about asthma medications, and having the patient demonstrate use of a peak flow meter).

The survey has been previously reported and validated.[12] Providers were also asked questions regarding the National Heart Lung Blood Institute (NHLBI) guidelines for asthma management, regarding prescription of inhaled corticosteroids for patients with persistent symptoms and patient education.[1] Finally, they were questioned regarding barriers to asthma-care compliance with Medicaid-insured children.

We used simple counts and descriptive statistics to analyze the data. The paired responses from baseline and 6 months were compared using the Wilcoxon signed rank test. Responses from all subjects ($n = 28$) who completed surveys at 6 months and 12 months were compared using the Friedman's test, with a Bonferroni adjustment for multiple pair-wise comparisons. The calculations were made with statistical software (SAS version 8.0, SAS Institute, Cary, North Carolina). Differences were considered statistically significant when $p < 0.05$.

Results

Of the 70 providers who agreed to participate, 11 (16%) attended only one of the 2 sessions. Six (9%) did not attend either session. Thus, 53 (76%) of the 70 who agreed to attend actually completed both sessions—a commitment of approximately 5 hours.[14] Selected characteristics of these 53 providers are presented in Table 1. Providers who completed all 3 follow-up surveys are separated from those who did not. A slight majority were women. Providers were predominately pediatricians (53%) and family-practice specialists (25%). Approximately 42% were self-employed, and their practices were more likely to be small groups, with 2–5 providers. Sixteen (30%) spoke English as a second language. Providers estimated that approximately 10% of their pediatric patients had asthma and that half (median 50%) of asthma patients were insured by Medicaid. Features shown in Table 1 did not differ when compared to respondents of 6-month and 12-month surveys. Nonparticipants' demographic characteristics were similar to participants, except that a greater proportion were male (60%).

When asked about provider *confidence* in identifying symptoms of persistent asthma (waking from sleep, limited exercise capacity, cough at night), asthma triggers, showing a parent how to use a nebulizer, and discussing differences in types of asthma medications, providers related they were very confident in their abilities (Table 2). Providers were somewhat less confident in identifying barriers to care for children insured by Medicaid. Likewise, they were less confident in using skills that involved integrating the family and patient into decisions regarding asthma-care goals and management (Table 2, questions 4, 5, 7, 8, and 9).

Changes in Provider Attitudes

Providers were asked to fill out surveys 6 months and 1 year after participating in the seminar. They were asked to respond after considering patients they had treated since the time of the education program or last survey. At 6 months, providers tended to report greater *confidence* in their asthma teaching skills after the intervention; this includes using specific communication techniques with their patients and families (Table 2, questions 4, 5, 7, and 9). However, the only statistically significant improvements noted were in provider confidence in providing written asthma plans and reaching an agreement with families regarding short-term care goals. Reported provision of written asthma plans declined from the 6-month survey to the 12-month assessment point.

Providers were asked if they used a protocol to track the asthma-education topics they discussed with Medicaid-insured families and the topics that remained to be covered at a future visit. They reported use of such a protocol less than half of the time (Table 3, question 1). At the 6-month time point, providers reported significantly more use of a protocol (median 2, $p = 0.002$) than at baseline. However, the difference was not statistically significant when evaluated over the 3 time points (Friedman test $p > 0.05$), among the subset of 28 subjects with complete data.

Changes in Provider Counseling Behaviors

Providers were asked about their use of specific communication and counseling techniques with Medicaid patients. They reported greater use at the 6-month time point, compared to baseline, when assessing asthma triggers and environmental changes, asthma related fears, and symptoms of persistent asthma (Table 3, questions 3, 4, 5, and 7). These differences were partially sustained at the 12-month point. Providers reported greater use of other asthma

Table 1. Selected Characteristics of Pediatric-Asthma Providers at Surveyed Managed-Care Organizations

	Participants Who Completed All 3 Surveys (n = 28)	Participants Who Did Not Complete All 3 Surveys (n = 25)
Male (number and %)	12 (43)	10 (40)
Age (median y)	53	44
Medical Specialty (number and %)		
Pediatrics	15 (54)	13 (52)
Family practice	6 (21)	7 (28)
Nurse practitioner	5 (18)	1 (4)
Physician assistant	2 (7)	2 (8)
Other/missing	0	1 (4)
Board-Certified (number and %)	27 (96)	17 (68) p = 0.018
Race (number and %)		
White	18 (64)	10 (40)
Asian/pacific islander	4 (14)	6 (24)
Black	1 (4)	5 (20)
Other	5 (18)	3 (12)
Missing	0	1 (4)
Employment (number and %)		
Self-employed	13 (46)	9 (36)
Community hospital	11 (39)	8 (32)
Non-profit managed care	4 (14)	5 (20)
For-profit managed care	0	2 (8)
Missing	0	1 (4)
Practice Setting (number and %)		
Solo practice	7 (25)	5 (20)
Small group (2–5 providers)	8 (29)	13 (52)
Large group (≥6 providers)	8 (29)	3 (12)
Hospital clinic	4 (14)	3 (12)
Public clinic	1 (4)	1 (4)
Provider speaks English as a second language (number and %)	19 (68)	17 (68)
Provider estimate of percent of patients with asthma (median)	10	10
Provider estimate of percent of patients with Medicaid insurance (median)	40	50

Table 2. Providers' Confidence in Using Specific Communication and Counseling Strategies During Asthma Clinic Visits

Communication and/or Counseling Strategy	Median Score*		
	Baseline (n = 53)	6-month (n = 32)	1-Year (n = 41)
1. Identify persistent asthma symptoms	5	5	5
2. Identify asthma triggers and then institute environmental changes	5	5	5
3. Identify barriers to asthma care for Medicaid insured children	4	4	5
4. Ask parent/child about underlying worries they have related to asthma	4	5	4
5. Tailor the medication schedule to fit the child and family's daily routine	4	5	5
6. Discuss differences in types of asthma medications and adverse effects	5	5	5
7. Reach an agreement with family regarding short-term care goals†	4	5	5
8. Teach the parent and child to use criteria for making decisions regarding asthma management	4	4	4
9. Give the child/parent a written asthma plan that shows how to adjust medications at home when symptoms change	4	5‡	5‡
10. Demonstrate to a parent/patient how to use a nebulizer	5	5	5

*Scale: 1 = not at all, 2 = slightly, 3 = somewhat, 4 = moderately, 5 = very, 6 = extremely
†$p < 0.05$ via Friedman test
‡$p < 0.0167$ via Wilcoxon signed rank test (Bonferroni adjustment for 3 comparisons)

Table 3. Provider's Use of Specific Communication and Counseling Strategies During Asthma Clinic Visits With Children Insured by Medicaid

	Median Score*		
	Baseline (n = 28)	6-month (n = 28)	1-Year (n = 28)
1. Use a protocol to keep track of asthma topics that were communicated with patient/parent and what topics remained to be covered	1	2	2
2. Work with patient/parent on school-related asthma care	2	2	2
3. Address specific patient/parent fears about new asthma medications	3	3†	3
4. Consider symptoms of persistent asthma with interview of the patient/parent	3	3†	4
5. Discuss ways to identify asthma triggers and then institute environmental changes‡	3	4†	3
6. Identify barriers to asthma care for Medicaid-insured children	2	2	2
7. Ask patients/parents about specific concerns they have related to asthma care	2	3†	3†
8. Teach patient/parent to use criteria for making decisions related to asthma management	2	3	3
9. Give the patient/parent written instructions about the asthma medications	2	3	3
10. Ask the child, if over 5 years of age, to demonstrate how to use a peak flow meter	2	2	3

*Scale: 1 < 50%, 2 = 51–75%, 3 = 76–90%, 4 = 91–99%, 5 = 100%
†$p < 0.0167$ via Wilcoxon signed rank test (Bonferroni adjustment for 3 comparisons)
‡$p < 0.05$ via Friedman test

teaching techniques at 6 months than at baseline (Table 3, questions 6, 8, 9, and 10) that were sustained at 12 months. However these differences were not statistically significant.

Medicaid-Specific Issues

At baseline, the providers (n = 53) estimated that they prescribed inhaled corticosteroids to Medicaid patients with mild persistent asthma or more severe disease 91–99% of the time.

When asked about the factors that influenced whether they would prescribe inhaled corticosteroids to Medicaid patients with persistent asthma symptoms (scale 1–6, in which 1 = "not at all" and 6 = "extremely"), the providers reported that patient noncompliance (median 4) was the most important factor, but that lack of patient-education materials (median 3) and staff support (median 3) were also important.

When comparing Medicaid-insured patients to those with other insurance, providers reported that Medicaid pediatric patients were less compliant with medications (median 4), less receptive to behavioral or environmental modifications (median 5), and less compliant with follow-up (median 4). These negative perceptions regarding children insured by Medicaid improved after the seminar. The providers (n = 28) gave significantly lower scores for barriers to compliance with medications (median 3) at 6 months and 12 months, and significantly lower scores for barriers to follow-up (median 3) at 12 months.

NHLBI Guidelines

Finally, when asked about how familiar they were with the recommendations of the NHLBI guidelines for diagnosis and treatment of asthma[1] relating to prescribing inhaled corticosteroids and providing patient education, respondents reported they were moderately familiar (median 4, scale 1–6, in which 1 = "not at all" and 6 = "extremely"). Familiarity with the guidelines improved (median 5) for prescribing inhaled anti-inflammatory medication at 6 months and 12 months. However, scores related to the NHLBI recommendation regarding patient asthma-education remained significantly lower (median 4) at all time points, compared to prescription of inhaled anti-inflammatory medications. We compared scores of providers who were less familiar with the NHLBI guidelines (score 1–3) to those who were more familiar with them (score 4–6) at study entry. More-familiar providers were significantly more confident in their ability to teach self-management skills to patients and their families (eg, reaching an agreement with families regarding short-term asthma goals [$p = 0.002$], giving written instructions for when asthma symptoms change [$p < 0.0001$], and demonstrating how to use a nebulizer [$p = 0.0035$]). Results were similar at 6 months and 12 months.

Discussion

We targeted pediatric primary-care providers who treat a large number of Medicaid-insured minority children and encouraged participation in a physician asthma-education program targeted to improve provider communication and enhance teaching skills. We found that the pediatric primary-care providers reported changes in practice and opinion, some of which were sustained through the 1-year survey period. The most positive changes reported were greater focus on patient/parent involvement in the child's asthma care, specifically, seeking family/child input con-

cerning asthma-related worries (eg, adverse effects of medications) and efforts to teach asthma self-management skills, a goal of the NHLBI asthma guidelines[1] and a focus of a recent action statement to improve asthma care.[2]

The provider asthma-education seminar is unlike traditional continuing medical education, because it includes specific methods to encourage and change specific physician behaviors related to therapeutics and communication with patients, rather than merely providing asthma information.[3,12] In addition, the program described in this study was specifically designed to include problem-solving relevant to the care of Medicaid patients. A primary focus of the initial physician asthma-education program developed by Clark et al was to change a range of specific physician behaviors through self-regulation and problem solving.[3] A program goal is to enable physicians to engage parents/patients in asthma-related conversations that are informative, fear-reducing, and reassuring. Addressing these skills has been shown to improve asthma care with use of written asthma plans, and to decrease utilization of emergency-department services, and patients from low-income families experienced the greatest decline in acute health-care services.[3–5]

Our providers also expressed only moderate initial confidence in their ability to identify barriers to good asthma care for economically disadvantaged children insured by Medicaid, even though half of their asthmatic patients were insured by Medicaid. They identified barriers such as poor continuity of care, lower compliance with medications, and lower compliance with environmental modifications such as smoking cessation. Providers thought that better patient/parent asthma-education materials and staff support could improve asthma teaching in their practices. They did not identify language barriers or limited access to asthma equipment such as peak flow meters, spacers, or nebulizers as particularly problematic.

Our survey of pediatric primary-care providers who care for a high-risk Medicaid population suggests that many providers continue not to provide a written asthma action plan, and do not track asthma teaching they have provided to patients and families. Ongoing provider education and asthma-care quality assessments are needed.[2] Providers initially reported that Medicaid-insured children were less compliant with medications, less likely to modify exposure to asthma triggers, and less compliant with follow-up, compared to children with other insurance. Although opinions changed somewhat during follow-up, several of these views persisted, despite the sessions that focused on barriers to care that can affect Medicaid-insured children.

The providers reported exceedingly high (nearly 100%) prescription of inhaled anti-inflammatory medications for children with persistent asthma symptoms. However, they may be over-reporting their guideline adherence. The response may reflect the participating managed-care organizations' emphasis on targeting the Health Plan Employer Data and Information Set measures for treating patients with moderate or severe persistent asthma with anti-inflammatory medications.[15] However, studies of pharmacy databases and patient surveys report that use of anti-inflammatory medications by patients with persistent symptoms is low and that effective translation of asthma guidelines regarding anti-inflammatory therapy into clinical practice remains less than optimal.[16]

This report reflects the attitudes of those providers who were surveyed. Our participants were a small subset of providers eligible to participate in the seminar and they may have been particularly motivated to learn new techniques. We targeted physicians who work with Medicaid-approved managed-care organizations and who care for a large proportion of Medicaid-insured children. The survey relied solely on provider self-report and was not linked to patient outcome. However, positive patient outcomes from the program employed have been previously reported in a randomized controlled study.[3–4] Providers who received the education program were significantly more likely to deliver a specific sequence of educational messages to their patients with asthma and were more likely to give written asthma-care instructions for when symptoms change, for parents to adjust therapy at home.[3–4,12] They were also more likely to address specific fears regarding new medications.[4]

The participants in our project all practice in urban areas of Michigan for managed-care organizations that have Michigan Medicaid contracts. This situation may not be similar to provider practice in other areas of the country. For instance, providers did not relate that language barriers were a problem in their practices, but language barriers might affect interactions with Latino patients or recent immigrants in other locations.

Children with asthma incur almost 90% more health costs than children without asthma, and use twice as many in-patient hospital days.[17] Although hospital and emergency-department charges for asthma care vary, if 1 or 2 hospital admissions are avoided because providers participate in such an intervention, the program will be cost-effective for a managed-care organization to provide. We found that delivering the program costs approximately $370 per provider who completed the program; however, implementation requires a high level of organization and planning.[14]

Our survey suggests that among primary-care providers who care for a Medicaid-eligible, high-risk pediatric population, emphasis on enhancing their ability to provide patient/parent asthma education and encouraging patient self-management are potential areas for improved asthma care. Further provision of asthma action plans to patients (a principle of the NHLBI guidelines[1]) may require continuous reminders, encouragement, and assistance to pro-

viders. Communication between low-income families/patients and providers may be more difficult, compared to higher income groups,[5] and needs more study regarding ways to improve it.

Conclusions

Providers serving Medicaid children were more confident in their possession of asthma information than about their interactions with patients. The interactive seminar improved views providers held about Medicaid-insured patients/parents. The seminar enhanced specific communication skills related to the goals of asthma therapy and the use of action plans. It improved providers' ability to address patients' fears and concerns. Such practices by providers appear to need periodic boosting through similar interactions as well as frequent reinforcement.

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