ARTICLE

The Smoking Gun

Do Clinicians Follow Guidelines on Firearm Safety Counseling?

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Objectives: To describe clinicians' behavior regarding firearm safety counseling practices, develop a model to predict current counseling behavior, and identify resources that might positively influence willingness to counsel according to medical guidelines.

Design: Four hundred sixty-five primary care Los Angeles County, California, pediatricians, family physicians, and pediatric nurse practitioners who serve families with children aged 5 years and younger received mailed questionnaires; 325 (70%) responded.

Main Outcome Measure: Clinician self-reported behavior.

Results: Of the respondents, 80% stated that they should counsel on firearm safety; only 38% do so. Of those clinicians who currently counsel, only 20% counsel more than 10% of their patient families. Firearm safety counseling behavior is positively associated with a clinician being 49 years or younger (odds ratio [OR] = 2.19, $P = .02$); a perception that counseling is beneficial (OR = 2.62, $P = .02$); and household handgun ownership (OR = 2.47, $P = .02$). Clinician households that report gun ownership counsel differently than those clinicians who report not possessing a household gun. There are no significant differences in the rates of counseling across specialties and crime area types. Forty-one percent of clinicians report that patient education handouts would increase their likelihood of counseling.

Conclusions: In Los Angeles County gaps exist between clinicians' views of the benefits of counseling families with young children regarding firearm safety and their actual behavior. Guidelines and handouts are available from major medical organizations. Research should focus on how to get practitioners to use available materials, enabling them to better adhere to guidelines.

Arch Pediatr Adolesc Med. 1998;152:749-756

Editor's Note: Once again, the gap between belief and behavior is wide. All I can do is quote what anyone whose ever ridden the London Underground has heard over and over: "Mind the Gap."
Catherine D. DeAngelis, MD

CHILDHOOD GUN violence, a disturbing social phenomenon, has broad public health and economic implications.[1-4] In 1991, gunshot wounds led to 11 315 deaths, 31 500 hospitalizations, and 44 500 outpatient visits in people younger than 25 years.[5] Between 1986 and 1992, firearm homicides of US youth increased by 143%[6] and firearm suicides more than doubled. Firearm homicides are the number one cause of death for children aged 10 to 19 years in Los Angeles County, California, with firearm suicides ranking second.[7-9] In 1994, 140 per 100 000 population of African American adolescent males were shot to death in Los Angeles County[10]; 3.5 times the current national figure of 40 per 100 000 and more than double the Los Angeles County rate in 1979. More than 80% of intentional injuries (homicide and suicide) to children involve handguns.[11] Handguns also predominate in accidental childhood shooting fatlities.[2]

The increase in childhood gun violence means increased health care costs. In Los Angeles County, more than $53 million is spent annually on direct costs for victims of firearm injury.[12] Because of the health and economic costs of firearm violence, medical organizations such as the American Medical Association and the American Academy of Pediatrics (AAP) have proffered firearm safety counseling guidelines. These guidelines include asking if families or patients own a gun, educating families and patients about the dangers of keeping guns in the home, and advising families how to store guns safely.[13-16] Prior studies have demon-

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PARTICIPANTS, MATERIALS, AND METHODS

We mailed questionnaires to a stratified random sample of pediatricians, family physicians, and pediatric nurse practitioners in high- and low-crime areas in Los Angeles County. These 3 clinician groups together see more than 97% of all children who seek medical care in Los Angeles County.[29] Because our focus is on primary prevention, we did not include emergency department physicians in our study.

SAMPLING FRAME

Pediatricians and family physicians working in Los Angeles County were identified from the roster of licensed physicians maintained by the California Medical Association. All pediatric nurse practitioners listed in the membership records of the National Association of Pediatric Nurse Associates and Practitioners (NAPNAP), Los Angeles chapter, were identified.

More than 70% of all Los Angeles County childhood gun injury (intentional and unintentional) occurs in the following 6 areas: South Central, Compton, East Los Angeles, Inglewood, Hollywood-Wilshire, and Pomona.[7] We designated these 6 areas as "high-crime areas." All other areas were designated as "non–high-crime areas." Because only 20% of clinicians practice in high-crime areas,[29] physicians were stratified on crime area type (primary practice location was not available for the pediatric nurse practitioner database). Because we hypothesized that physicians working in high-crime areas would be more exposed to the issue of childhood gun violence and therefore might be more likely to counsel, we oversampled the physicians who worked in high-crime areas to test this hypothesis.

DATA COLLECTION

Surveys were mailed to 196 pediatricians and 208 family physicians. Half were randomly selected from those who worked in high-crime areas and half from those who worked in non–high-crime areas. All identified Los Angeles County pediatric nurse practitioners were sampled (n = 61). Three weeks after the first round of mailing, we conducted a follow-up mailing for nonrespondents.

SURVEY DEVELOPMENT

The 37-question survey examined self-reported firearm safety counseling behavior, using clinician characteristics as predictors. We used the health belief model[30,31] to guide the development of the survey to examine how attitude translates into action. Its major components include perceptions of the susceptibility and severity of the health problem, the feasibility and effectiveness of the recommendations, and the consequences incurred by the recommended change in health behavior. We also developed a list of resources that could influence the likelihood that clinicians would counsel on firearm safety. Most of the survey items were generated through semistructured interviews[32,33] with community leaders, clinicians, and parents; through clinical judgment; and through 4 rounds of pilot testing. When pilot tested, the questionnaire took 10 to 12 minutes to complete.

CLINICIAN CHARACTERISTICS AND ATTITUDES

Each respondent answered questions about ethnicity, age, sex, specialty (pediatrics, family practice, or pediatric nurse practitioner), number of years in practice, location of primary practice, percentage of patients seen in a week who are children aged 5 years and younger for well-child examinations (compared with all other patient visits in that week), and if they have treated children with evidence of old gunshot wounds during the past year. Also, respondents were queried as to whether anyone in their home currently owned a handgun; this is referred to as "household gun ownership." We chose to ask about household gun ownership rather than individual gun ownership, because prior studies link firearm household availability to both intentional and unintentional injury.[2,17,18] Therefore, it is not important who owns the gun; rather, the fact that there is a gun available in the home is the variable of interest.

We asked about clinician attitudes regarding childhood gun injury prevention in general. We define childhood gun injury as "any child, 18 years old or younger, injured or killed by a firearm, intentionally or unintentionally." Also, respondents were asked about their perceived self-efficacy in firearm safety counseling and their perception of counseling benefit. By perceived self-efficacy, we mean the clinicians' perception of their own effectiveness when counseling families on firearm safety.

CLINICIAN BEHAVIOR

We used the respondents' self-reported behavior as a proxy for their actual behavior. We asked respondents if they ever counseled their patient families with children aged 5 years and younger on firearm safety. For the clinicians who reported "ever counseled," we further probed into their behavior during the past year—asking them to quantify the percentage of well-child examinations with children aged 5 years and younger that included a discussion of firearm safety. We defined "current counseling" status as a

strated a link between firearms in the home and both unintentional injury to young children and intentional injury to others.[2,17,18] Moreover, many children state that they can acquire a gun easily.[2,19,20] While there are many potential sources for this acquisition, one of them is the home.[20]

Because families must bring their children in for routine medical examinations before the children can attend first grade,[21] health professionals have a unique opportunity for early intervention before gun injury, unintentional or intentional, manifests itself. Evidence is available to demonstrate that counseling by primary care clinicians to families with children aged 5 years and younger can influence prevention of burns and motor vehicle crashes[22-28]; the same might also apply to prevention of gun injury through firearm safety counseling, as is evidenced by the existence of guidelines from respected medical organizations. While counseling older children and adolescents may also be critical, this study focuses on an early point in children's lives by addressing firearm safety counseling of patient families with children aged 5 years and younger.

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dichotomous variable for those clinicians who counsel a nonzero percentage of patients vs those clinicians who do not counsel patients (including those who never have counseled). If they had currently counseled, we asked about advice that clinicians gave on firearm safety, using some data items from Webster et al.[34] These questions focused on including the advice recommended by the AAP and NAPNAP, such as counseling families about storing guns safely and not having guns in homes with children.[13,35]

We asked about resources that might affect the likelihood of clinician counseling on firearm safety. Resources were generated from clinician interviews and included more time per patient, research demonstrating that counseling on this topic is effective, presence of a social worker in the office, printed handout for patient education on this topic, checklist of items to discuss, endorsement by major medical organizations, access to an interpreter, and access to a specially trained clinician in the field of violence prevention.

STATISTICAL ANALYSIS

Only those respondents who reported that they saw children aged 5 years and younger for well-child care were included in the analyses. Thirty-two respondents were excluded from the analyses because they did not meet this criterion. Because we oversampled physicians who worked in high-crime areas and pediatric nurse practitioners, we conducted weighted analyses, weighting each case in inverse proportion to its sampling probability. Analyses were done using SAS (SAS Inc, Cary, NC) and STATA (STATA Corp, College Station, Tex) software. Data file preparation was done with SAS and final analyses were done with STATA to account for the design effect due to weighting.[36]

Analysis for Clinician Current Counseling Behavior

Our primary analyses were focused on clinicians' current counseling behavior. We first examined univariate means and distributions, then evaluated bivariate relationships between the independent variables in our conceptual model and our dependent variable, current counseling on firearm safety. Multivariate logistic regression analysis was then used to assess the effect of various predictors of current counseling behavior. Based on prior literature[9,10,17,22,28,37-50] and clinical judgment, the multivariate model was built to reflect the a priori conceptual model. The predictors considered for the model included specialty, crime area type, ethnicity, sex, age, perceived benefit of counseling, perception of self-efficacy, experience with patients who had evidence of old gunshot wounds, and household gun ownership. A backward elimination procedure was used to select the variables to be included in the multivariate model. Three of the predictors eliminated (ethnicity, experience with patients who had evidence of old gunshot wounds, and perceived self-efficacy) were also insignificant in the bivariate analysis (**Table 1**). The fourth predictor eliminated, sex, was significant in the bivariate analysis; however, it had a fair amount of collinearity with the pediatric nurse practitioner variable. We did examine a second model, with sex in place of the pediatric nurse practitioner variable; the results obtained from the 2 models were very similar. From our clinical judgment, we constrained the selection procedure to keep specialty and crime area type in the model irrespective of the significance for those predictors.

Based on the results of our exploratory analyses, we recoded age as a dichotomous variable: the clinicians aged 49 years or younger (younger clinician) vs the clinicians aged 50 years and older (older clinician)—the threshold was chosen to yield approximately the same number of clinicians in each group. Similarly, we dichotomized perceived self-efficacy, classifying clinicians who reported the effect of counseling as "nil," "rare," or "unknown" as exhibiting negative self-efficacy; clinicians who reported that the effect was "sometimes" or "often" present were classified as exhibiting positive self-efficacy. This rule also yielded approximately the same number of clinicians in each group.

For each predictor in the final model, we computed the *P* value, the odds ratio (OR), and the 95% 2-sided confidence interval (CI) for the OR. To help interpret those results, we also predicted the probabilities to counsel, holding all other variables constant at the average, while "turning the variable off" (assigning the value of 0) vs "turning it on" (assigning the value of 1).

We had a modest amount of missing data for these analyses. We had 7 cases missing the outcome variable (current counseling behavior); those cases were deleted from the analysis. Among the remaining cases, we had 11 cases missing household gun ownership. We included these cases in our analyses. For the multivariate model, we used a dummy variable for the cases lacking this variable to capture the effect of the missing data.[51]

Analysis for Resources to Enhance Clinician Intention to Counsel

In addition to predicting clinician behavior, we did descriptive analysis on resources that could affect the likelihood that the clinician would counsel on firearm safety. The 10 resource items were measured in a dichotomous fashion.

In this article, we describe clinicians' reports of their firearm safety counseling practices during the routine well-child examination of children aged 5 years and younger and identify available resources that can positively influence a clinician's willingness to counsel on this topic in accordance with medical guidelines. We also describe the characteristics of clinicians that are associated with their willingness to counsel. To our knowledge, this is the first study to examine differences among pediatric nurse practitioners, pediatricians, and family physicians in their firearm safety counseling, to assess resources affecting the likelihood that they would counsel, and to focus on such behavior with urban children aged 5 years and younger.

RESULTS

We mailed the questionnaire to 465 sampled clinicians and received a 70% response rate: 73% of pediatricians, 63% of family physicians, and 84% of pediatric nurse practitioners. Because the sample was drawn with unequal sampling rates, all analyses were conducted as weighted

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Table 1. Weighted Bivariate Associations Between Firearm Safety Counseling and Explanatory Variables

Categorical Explanatory Variables	Counseling Rate, No. (%)*
Clinician specialty	
Pediatric nurse practitioner	51 (53)
Family physician	127 (37)
Pediatrician	142 (39)
Practice crime area type	
High	150 (39)
Nonhigh	169 (38)
Age, y†	
25-49	156 (47)
≥50	159 (30)
Sex†	
Female	129 (49)
Male	190 (34)
Ethnicity	
Asian	76 (30)
Latino	22 (65)
African American	22 (51)
White	171 (34)
Experience with patients with gunshot wounds	
Yes	107 (47)
No	209 (34)
Household gun ownership†	
Yes	62 (54)
No	247 (37)
Beneficial to counsel†	
Yes	248 (42)
No	66 (23)
Perceived self-efficacy	
Yes	140 (44)
No	105 (33)
Continuous explanatory variables‡	
Years out from training, mean (SD)	
Counsel	22 (11)
Do not counsel	25 (11)

*Percentages are presented as weighted data; numbers are presented as unweighted data.

†$P \leq .05$, for comparing the counseling rates across subgroups defined by the categorical explanatory variable, using the χ^2 test.

‡For continuous explanatory variables, the bivariate association is tested using a 2-sample t test, comparing the mean values for the explanatory variable between the counselors and the noncounselors. None of the tests were significant at the 5% level. There were 129 clinicians who counseled and 190 who did not.

analyses to account for the different sampling rates. The weighted analyses estimate the distribution of the characteristics and behavior of the clinicians in the target population, rather than the distribution in the sample.

Table 2 describes the characteristics of the clinicians in the target population. The majority of respondents were men, with a mean age of 50 years. Pediatric nurse practitioners were more likely to be white and female, while pediatricians were more likely to be Asian and male. The clinicians have been out from training for an average of 24 years, with pediatric nurse practitioners being out from training for less time, an average of 16 years. There was substantial variation in the percentage of well-child visits per week. The mean was 17%, but family physicians spent an average of 7% while pediatric nurse practitioners spent 44% of their weekly visits on well-child care. One third of all clinicians noted that they had treated patients with evidence of old gunshot wounds in the past year.

CLINICIAN ATTITUDES AND BEHAVIORS

While 80% of clinicians thought that counseling on firearm safety would be beneficial, they do not deliver much counseling to their clients. Only 38% reported ever counseling on firearm safety. Only 37% of clinicians reported currently counseling their patient families with children aged 5 years and younger and only 20% of those clinicians reported counseling at least 10% of their patient families with children aged 5 years and younger during the past year on firearm safety.

Among those clinicians who reported ever counseling, slightly more than half (51%) reported that they believed their firearm safety counseling was effective. The likelihood of reporting counseling as being effective varies across clinician types ($P = .02$): 38% of pediatricians, 49% of pediatric nurse practitioners, and 58% of family physicians.

Table 1 gives the weighted bivariate relationship between the clinician characteristics and their current firearm safety counseling behavior. Significant positive associations included younger clinician age, female sex, household handgun ownership status, and the perception that firearm safety counseling is beneficial. Insignificant associations included clinician specialty, practice crime area type, ethnicity, experience with patients with gunshot wounds, perception of self-efficacy, and years out from training.

Table 3 presents the results from the weighted multivariate logistic regression predicting whether the clinician currently counsels on firearm safety. Being a younger clinician (aged 25-49 years) rather than an older clinician (≥50 years), increased the counseling rate from 28% to 46% ($P = .02$). Clinician household gun ownership increased the counseling rate from 33% to 55% ($P = .02$). Believing counseling is beneficial increased the counseling rate from 21% to 41% ($P = .02$). Neither specialty nor practice crime area type significantly predicted current counseling.

ADVICE OFFERED

Because the clinician's household gun ownership was such a strong independent predictor of firearm safety counseling, we wanted to understand whether clinicians who had guns in their homes counseled differently from those clinicians who did not have guns in their homes. We did this by the content of their firearm safety counseling advice (not given in the tables). Both groups of clinicians were equally likely to include a discussion of proper handgun storage. Additionally, both groups counseled on keeping guns away from children. However, clinician household gun owners who counseled were more likely to include advice about teaching children how to use firearms. Fifteen percent of clinician household gun owners reported counseling that "All children should be taught how to handle firearms safely when they are old enough," vs 4% of clinician household non–gun owners ($\chi^2 = 16.1$, $df = 1$, $P = .001$). Furthermore, 30% of clinician house-

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Table 2. Weighted Summaries of Clinician Characteristics by Type of Primary Care Provider*

Characteristic	Pediatricians (n = 143)	Family Physicians (n = 131)	Pediatric Nurse Practitioners (n = 51)	Total Sample (N = 325)
Practice located in high crime area	23	20	24	21
Demographics				
Mean (SD) age, y	50 (9)	51 (12)	49 (10)	50 (11)
Sex, % female†	36	20	98	27
Ethnicity‡				
White§	55	63	77	61
Asian	30	17	15	21
African American	12	8	5	9
Latino	4	13	5	10
Professional characteristics				
Mean (SD) y out of training	25 (9)	24 (12)	16 (9)	24 (11)
Mean (SD) percentage well-child examinations in a typical week†	35 (19)	7 (9)	44 (33)	17 (19)
Experience with patient with gunshot wounds	28	36	38	33
Household gun ownership§	12	28	22	22
Clinicians' attitudes about firearm safety counseling				
Believes counseling is beneficial†	73	83	94	80
Believes that they are efficacious in their counseling on firearm safety§	38	58	49	51
Counseling on firearm safety				
Ever counseled	39	37	53	38
Mean (SD) percentage of well-child examinations that included firearm safety counseling during the past 12 mo	13 (21)	13 (25)	22 (29)	13 (24)
Potential resources‖				
Time†	13	12	40	13
Research	22	26	28	24
Office social worker	17	23	33	21
Handout for patient education§	34	43	58	41
Checklist of items to discuss§	23	28	46	27
Endorsement from medical organizations	20	29	37	26
Interpreter§	9	13	27	12
Violence prevention specialist¶	17	23	44	22

*All data are presented as percentage unless otherwise indicated. An F test was used to test for significance, comparing across all 3 clinician types.
†Significant at $P \leq .001$.
‡The difference in the ethnicity distribution across clinician types is given separately for each group. The overall association between ethnicity and clinician types is significant ($\chi^2 = 13.54$, $P = .04$).
§Significant at $P \leq .05$.
‖Resources are dichotomized as 1 to 3 vs 4. Here, we presented the percentage of clinicians who report they would have a "very good chance" of counseling firearm safety if this resource were present.
¶Significant at $P \leq .01$.

hold gun owners offered the advice, "Children in families that keep firearms should be taught how to use them safely when they are old enough" vs 9% of clinician household non–gun owners ($\chi^2 = 26.9$, $df = 1$, $P = .001$). Finally, 42% of household gun owners would suggest that "Families with children should remove firearms from their home" vs 78% of clinician counselors who did not have a gun in their home ($\chi^2 = 17.1$, $df = 1$, $P = .001$).

RESOURCES THAT WOULD AFFECT COUNSELING

Among the resources presented in our questionnaire, providing a patient educational handout was reported by the greatest proportion of clinicians (41%) as having "a very good chance" of affecting the likelihood that they would provide firearm safety counseling for families with children aged 5 years and younger. This is despite the fact that many educational handouts already exist on this topic. Three other resources are reported by approximately one quarter of the clinicians as being capable of affecting their likelihood of counseling firearm safety: a checklist of items to discuss (27%), endorsement from major organizations (26%), and research demonstrating that counseling on firearm safety is effective (24%). It should be noted that endorsement from major medical organizations already exists. Only 13% of clinicians reported that providing more time per patient visit would affect the likelihood that they would counsel on firearm safety.

COMMENT

In Los Angeles County, gun injury is the number one cause of death for children aged 10 years and older.[7] Our study focused on clinician counseling with families who have children aged 5 years and younger because this is when clinicians have a window of opportunity to influence families' behaviors before intentional and unintentional gun injury is manifested. Findings from this study have several important implications. First, while clinicians believed that counseling on firearm safety is beneficial, only one third reported that they had ever coun-

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Table 3. Weighted Multivariate Logistic Regression Model Predicting Current Firearm Safety Counseling

Variable Name	Weighted Mean	Parameter Estimate	Odds Ratio	95% Confidence Interval	*P*	Baseline Rate of Counseling, %*	Effect of Variable on Rate of Counseling, %*
Clinician characteristics							
Clinician specialty†							
Pediatric nurse practitioner	0.03	0.32	1.38	0.65-2.93	.41	42	50
Family physician	0.65	−0.38	0.69	0.36-1.29	.24	42	33
Clinician practice location†							
High-crime area	0.21	0.13	1.14	0.66-1.96	.64	36	38
Clinician age, y†							
25-49	0.52	0.79	2.19	1.13-4.25	.02	28	46
Household gun ownership†							
Gun in home	0.21	0.90	2.47	1.13-5.42	.02	33	55
Missing report on household gun ownership	0.04	−1.03	0.36	0.05-2.44	.29	33	15
Clinician attitudes							
Believes it is beneficial to counsel†	0.80	0.96	2.62	1.20-5.72	.02	21	41

**For the dichotomous independent variables, these columns show the effect on the dependent variable of change in each independent variable from a value of 0 to a value of 1, holding all other variables at their baseline values (means).*

†Reference groups included pediatrician, non–high crime area, age of 50 and older, a report of not owning a handgun, not missing data for handgun ownership, and not believing counseling to be beneficial.

seled and only one fifth of those said that they currently counseled even a minimal proportion of their patient families. These rates are similar to other data published before and after the AAP and NAPNAP issued clear guidelines on clinician firearm safety counseling,[34,35,52,53] indicating either that clinician behavior is slow to change or that guidelines are necessary but not sufficient in motivating clinicians to counsel on this topic.

Second, we found that clinicians who reported household gun ownership were more likely to currently counsel on firearm safety than those who did not. This finding differs from the results of the AAP National Periodic Survey,[54] which looked only at pediatricians. In our sample, all clinicians counseled according to guidelines that guns should be kept unloaded and locked up. However, more clinicians who reported having a household gun counseled on "teaching children to handle firearms when they are old enough" and fewer of these clinicians counseled on not having a gun in homes with children present. Currently, the AAP and NAPNAP recommend that firearm safety counseling advice include removing firearms from homes with children.[13,14,16,35,54] Moreover, the AAP recommends that if a household does not already have a gun, clinicians should encourage families not to purchase one.[13] Therefore, those clinicians who report having a handgun in their home are more likely than other clinicians to counsel their patients on topics that are inconsistent with the current recommendations of these medical associations.

Third, despite our expectations, in our sample there was no evidence that pediatric nurse practitioners counseled more often than physicians on firearm safety. While the OR is 1.38, the CI is wide (0.65-2.93), demonstrating a lack of precision; thus, we cannot reach a definitive conclusion. It is possible that pediatric nurse practitioners do not counsel more often than physicians; it is also possible that pediatric nurse practitioners counsel substantially more than physicians. Both possibilities are consistent with our data.

Fourth, although we hypothesized that experience with having patients with gunshot wounds would increase the likelihood that clinicians would counsel on firearm safety, our data did not provide evidence for such an association. Clinicians who practiced in high-crime areas surprisingly did not counsel more frequently than those who practiced elsewhere—the counseling rates are almost identical between these 2 groups of clinicians. Perhaps clinicians who practice in high-crime areas do not perceive that their patients are at higher risk for gun injury, or perhaps they have become desensitized to the issue. On the other hand, this might be because they do not know what to do, how to counsel, or where to refer their patient families for help. These hypotheses require further testing.

Fifth, the findings also revealed that a substantial proportion of clinicians think they would have a "very good chance" of counseling firearm safety if more resources were available to them. Most of the clinicians provided little or no firearm safety counseling to their clients. Therefore, providing resources to current counselors and current noncounselors would be useful.

While many clinicians in our study believed that educational materials would aid in counseling on the topic of firearm safety, we must look at this response with a dose of skepticism. Educational handouts have already been developed by organizations such as the AAP.[13] In 1994, the AAP sent out educational materials on this topic to all of its members; however, pediatricians in our study still report the need for educational handouts to almost the same degree as other primary care providers. Likewise, about one quarter of clinicians believe that endorsement of counseling on firearm safety from major medical organizations would have a very good chance of increasing the likelihood that they would counsel on firearm safety. However, the American Medical Association, AAP, American Association of Family Physicians, and NAPNAP have already provided their endorsement,[14-16] and still most of clinicians did not deliver counseling to most of their patient families. Despite their avail-

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ability, clinicians' requests for educational handouts and endorsement by major medical associations indicates an incongruence and suggests that further exploration is needed regarding the dissemination and use of such information. This could indicate that there are important differences between guns and other injury hazards that make counseling potentially more sensitive and behavior change more difficult. Additionally, this could indicate that clinicians are more uncertain about counseling on a topic that is yet to be proven efficacious.

Finally, in this age of managed care when time seems to be a major issue in constraining the interaction during the patient-clinician visit, it is surprising that time as a resource does not seem to affect as many clinicians as having educational materials.

Our study had several limitations. While the physician list is relatively complete (because it was based on licensing), there was no comparable listing of practicing pediatric nurse practitioners. There may be an inherent selection bias in the pediatric nurse practitioner population. Perhaps those pediatric nurse practitioners who chose to belong to the professional organization from which we sampled might differ from those who do not belong to this organization, potentially limiting our ability to generalize to all pediatric nurse practitioners.

As with all mailed surveys, a potential nonresponse bias exists. Using data available from the California Medical Association database, we found that physician nonresponders did not differ from physician responders in specialty, practice crime area type, or sex. The pediatric nurse practitioner database does not provide practice location; subsequently, we can only say that pediatric nurse practitioner nonresponders did not differ from pediatric nurse practitioner responders by sex. We cannot know how nonresponders differed from responders regarding their counseling behaviors. It is possible that nonresponders did not counsel at higher rates than responders. This could mean that true counseling rates are even lower than reported here. In addition, with a mailed questionnaire, all the data collected were self-reported. We do not have a feasible way to verify if the reported behavior mirrors the actual behavior. However, one would expect responses to be skewed towards social desirability, thus biasing toward overreporting counseling. Our results indicate that the level of counseling is very low. Because these results could be overstated, actual counseling behavior might be even less frequent than was reported.

Given these limitations, our data demonstrate that clinicians still counsel on firearm safety very infrequently. Specialty and practice crime area type do not influence their firearm safety counseling. From our data, it seems that clinicians will counsel more frequently if they have patient educational handouts. Because patient educational handouts have already been developed by major medical organizations and clinicians seem not to be using them, research needs to be done to determine the barriers to their use. In this time of cost-conscious medicine, it is important to test the effect that firearm safety counseling will have on parents' and children's behavior. Considering the amount of gun violence in our society, it is appropriate to conduct a trial that incorporates efforts to increase counseling about firearm safety into primary care, to test experimentally the effects of such counseling on parental knowledge and behavior, and to evaluate the effects on their children.

Accepted for publication April 6, 1998.

Dr Barkin's work on this project was supported by the UCLA Robert Wood Johnson Clinical Scholars program and National Research Service Award 1-T32 HS00046-01 from the Agency for Health Care Policy and Research. The views expressed are those of the authors and do not necessarily reflect those of the Robert Wood Johnson Foundation or the Agency for Health Care Policy and Research. Dr Gelberg is a Robert Wood Johnson Generalist Physician Faculty Scholar.

We acknowledge Kenneth Frumkin, MD, PhD, for his help in reviewing the manuscript and Diana Tisnado for her hard work contributing to the data collection phase of the project.

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