ARTICLE

Impact of Individual Values on Adherence to Emergency Contraception Practice Guidelines Among Pediatric Residents

Implications for Training

Krishna K. Upadhya, MD, MPH; Maria E. Trent, MD, MPH; Jonathan M. Ellen, MD

Objective: To evaluate the impact of individual, system, and interpersonal factors on emergency contraception practices. We hypothesized that abortion attitudes and attitudes toward teen sex would be significant individual factors influencing emergency contraception practices.

Design: This was a cross-sectional, anonymous Internet survey.

Setting: Four pediatric residency programs in the Baltimore, Maryland–Washington, DC, metropolitan area during April to June 2007.

Participants: One hundred forty-one pediatric residents completed the survey.

Main Exposure: Abortion attitudes were assessed by participants' level of agreement with abortion in 7 scenarios. Attitudes toward teen sex were assessed by participants' level of agreement with 5 statements about the acceptability of teens having sex.

Main Outcome Measures: Emergency contraceptive counseling behavior was assessed by reported frequency of including emergency contraception in routine contraceptive counseling. Intention to prescribe emergency contraception was assessed by reported likelihood of prescribing in 5 scenarios.

Results: When controlling for demographics and other predictors, residents with less favorable abortion attitudes were more likely to have the lowest intention to prescribe emergency contraception. Residents with more positive attitudes toward teen sex and who had a preceptor encourage emergency contraception prescription were more likely to include emergency contraception in routine contraceptive counseling most/all the time and to have the highest intention to prescribe.

Conclusion: Efforts to challenge and affect attitudes toward teen sex and to prompt residents to prescribe emergency contraception in clinical settings may be needed to encourage more proactive emergency contraceptive practice in accordance with national practice guidelines.

Arch Pediatr Adolesc Med. 2009;163(10):944-948

Author Affiliations: Division of General Pediatrics and Adolescent Medicine, Johns Hopkins University School of Medicine, Baltimore, Maryland.

REDUCING THE TEEN PREGNANCY rate is a national health priority.[1] Use of emergency contraception (EC) after unprotected intercourse is estimated to reduce the risk of pregnancy by up to 75% to 85%.[2-4] Adolescent access to EC is controlled exclusively by prescription in nearly all states. In spite of guidelines that urge providers to counsel all adolescents about EC and encourage advanced prescription,[5,6] previous research suggests that a majority of pediatricians in practice and training do not routinely counsel patients about EC and have not prescribed it.[7-9]

Evidence exists that physicians' values impact their willingness to provide reproductive health services to adolescents. Fortenberry and colleagues[10] demonstrated that medical students who rated themselves as "conservative" were less likely to prescribe contraceptives to adolescents than those who rated themselves as "liberal." More recently, Curlin and colleagues[11] found that 42% of physicians surveyed object to prescribing birth control to adolescents without parental consent and a significant proportion did not feel obligated to refer those patients to an alternate provider.

Although prior EC studies of pediatricians suggested that knowledge deficits and limited training were the major factors in low rates of EC prescription,[7-9] other sources suggest they are only part of the explanation. Previous qualitative EC studies indicate that concerns about the relationship of EC to abortion and about the acceptability of teenage sexual behavior might also discourage physicians from prescribing EC to adolescents.[12-17] To our

knowledge, no previous studies have assessed the influence of these moral attitudes on pediatrician EC counseling and prescription practices.

The objective of this study was to evaluate the impact of individual, system, and interpersonal factors on EC practices. We hypothesized that pediatric residents would fall into 3 groups with regard to EC practice: those unlikely to prescribe EC in any scenario; those likely to prescribe in case of immediate need only; and those likely to prescribe in case of immediate need and prospectively. We hypothesized that abortion attitudes and attitudes toward teen sex would be significant individual factors influencing EC practices.

METHODS

DESIGN AND SETTING

During April through June 2007, we conducted a cross-sectional survey of pediatric residents in the Baltimore, Maryland–Washington, DC, metropolitan area. The study took place following the US Food and Drug Administration decision allowing behind-the-counter access to EC for women 18 years and older in August 2006. Program directors from all 5 pediatric residency programs in the cities were contacted and 4 agreed to participate. Programs included a mix of public, private, and religiously affiliated institutions and ranged in size from 46 to 96 residents. Program directors provided information on the total number of residents in their programs and agreed to forward the survey URL to their residents. The survey elicited information in the following areas: demographics, EC training, EC practice history and intention, EC knowledge, abortion attitudes, and attitudes toward teen sex. Following the initial e-mail, 3 reminders were sent to all residents. Participant responses were entered directly into a Web-based survey instrument (www.surveymonkey.com) and could not be linked to the individual respondent. The study protocol was approved by the Johns Hopkins School of Medicine institutional review board.

ANALYTIC FRAMEWORK

In their PRECEDE framework, Green and Kreuter[18] propose 3 sets of factors that contribute to behavior. Predisposing factors include personal preferences, such as attitudes and values that an individual brings to a behavioral choice. Enabling factors facilitate the performance of a behavior. Reinforcing factors provide positive and negative consequences for a behavior and can include peer influences and feedback. We used these factors to construct our analytic framework.

PREDISPOSING FACTORS

Abortion attitudes were assessed using a published scale based on validated scenarios.[19,20] Participants were asked to indicate their level of agreement with abortion in 7 scenarios such as: "The health of the mother is in danger." Response choices ranged from 1 = strongly disagree to 7 = strongly agree, with 4 designated as neutral. Responses to the items were summed to create the overall Abortion Attitude Score. Higher scores indicate more positive abortion attitudes. The scale demonstrated high reliability in our sample (Cronbach $\alpha = .91$).

Attitudes toward teen sex were assessed using a 5-item scale developed by study investigators. The scale was pilot tested with a group of pediatric fellows prior to use in the study. Participants were asked to indicate their level of agreement with statements such as: "It is acceptable for adolescents (ages 15-18) to have sex before marriage if they are in a loving relationship" and "It is unacceptable for adolescents (ages 15-18) to have sex for pleasure." Response choices ranged from 1 = strongly disagree to 7 = strongly agree, with 4 designated as neutral. Items were reverse coded when appropriate so that higher scores indicate more acceptance of teen sex. Responses to the items were summed to create the overall Teen Sex Attitude Score. The scale demonstrated high reliability in our sample (Cronbach $\alpha = .91$).

Table 1. Intention to Prescribe EC Scale Items[a]

Item	Mean (SD)
Sexually active 16-year-old female presents for routine physical. . .	3 (2)
16-year-old female presents for evaluation of rape. . .	6 (2)
16-year-old female presents with vaginal discharge, reports unprotected intercourse 7 days ago. . .	4 (2)
16-year-old continuity patient calls requesting EC after condom broke today. . .	6 (2)
16-year-old female presents to the ED and is worked up for an STI, reports unprotected sex 2 d ago. . .	5 (2)

Abbreviations: EC, emergency contraception; ED, emergency department; STI, sexually transmitted infection.

[a] Participants were asked "In the following scenarios, how likely are you to prescribe EC for immediate or future use?"; possible responses ranged from 1 = extremely unlikely to 7 = extremely likely.

ENABLING FACTORS

Residents were asked to estimate what proportion of adolescents they evaluate is sexually active and whether their continuity clinic has Plan B available. Knowledge of EC was assessed in 5 areas: methods, timing, effectiveness, required follow-up, and prerequisite testing. All knowledge items were based on the information outlined in the American Academy of Pediatrics EC policy statement.[5] Residents were also asked: "Have you ever attended a teaching session where EC was discussed?"

REINFORCING FACTORS

Reinforcing factors were assessed with 2 items: (1) "Has a clinical preceptor ever prompted you to prescribe EC for a patient?" (2) "Has an adolescent patient ever asked you to prescribe EC?"

DEPENDENT VARIABLES

Emergency contraception counseling behavior was assessed by: "How often do you include emergency contraception as a part of routine contraceptive counseling?" Response choices included "all the time," "most of the time," "sometimes," and "never." For our analysis, we combined the "all" and "most" respondents into 1 group, creating a 3-level outcome.

Intention to prescribe EC was assessed using a scale developed by study investigators. The scale was reviewed by experts in the fields of adolescent health and contraception for content validity. Items asked respondents to indicate how likely they are to prescribe EC either for immediate or future use in 5 scenarios (**Table 1**). Response choices ranged from 1 = not at all likely to 7 = extremely likely, with 4 designated as neutral. The reliability of the scale was assessed and found to be acceptable (Cronbach $\alpha = .74$). Responses to the items were summed to create the Intention to Prescribe EC Score. Respondents were classified into 3 behavioral intention groups based the Intention to Prescribe EC Score: low intention, scores in

the lowest quintile; ambivalent intention, scores in the middle 3 quintiles; and high intention, scores in the highest quintile.

DATA ANALYSIS

Data were analyzed using Stata 9.2 (StataCorp, College Station, Texas). One-way analysis of variance and χ^2 were used to examine the mean and frequency differences between the EC counseling and EC intention groups by each predictor variable. Multinomial logistic regression was used to generate adjusted relative risk ratios for those who provide routine EC counseling "most/all the time" and "never" compared with "sometimes" as well as low intention and high intention compared with ambivalent intention for each predictor. All predictors that were significantly different between groups at the 0.1 level in bivariate analyses were included in the multivariable analyses. Standard errors in regression models were adjusted for clustering within observations collected from the same residency program.

RESULTS

A total of 141 residents (50%) responded to the survey (**Table 2**). Response to the EC counseling question was available for 137 residents and 134 had complete responses to the Intention to Prescribe EC Scale. Most respondents were aware of EC and most correctly identified the correct dose and timing of at least 1 method of EC. Even so, less than half reported ever having prescribed EC and less than a third had done so in advance of need.

The mean (SD) Abortion Attitude Score was 37 (10) (range, 10-49). The mean (SD) Teen Sex Attitude Score was 22 (7) (range, 5-35). The mean (SD) Intention to Prescribe EC Score was 25 (6) (range, 5-35).

Construct validity of the Intention to Prescribe EC classification was assessed using χ^2 to evaluate the association between the 3 behavioral intention groups and 2 measures of EC prescribing history. The percentage of respondents in each intention group who reported having ever prescribed EC and having prescribed EC in advance of need increased from EC opponent (25% and 4%) to EC ambivalent (50% and 30%) and EC proponent (71% and 63%) in accordance with our hypothesis.

Bivariate associations between independent variables and frequency of EC counseling and intention to prescribe EC were very similar overall (**Table 3**). As attitudes toward abortion and teen sex became more favorable, both frequency of EC counseling and intention to prescribe EC increased. The mean number of correct knowledge items was lowest among residents who "never" provide routine EC counseling and those with the lowest intention to prescribe EC. Having a preceptor encourage EC prescription was more common among those who provide routine EC counseling "most/all the time" and those with the highest intention to prescribe EC.

When controlling for demographics and other predictors, residents who had a preceptor encourage EC prescription were significantly less likely to report "never" providing routine EC counseling compared with those who "sometimes" provide that counseling (**Table 4**). Residents with the highest teen sex attitudes were almost twice as likely to include EC in routine contraceptive counseling "most/all the time" compared with those who "sometimes" provide that counseling. Having a preceptor encourage EC prescription increased the odds of reporting EC counseling "most/all the time" compared with "sometimes" by almost 5 times. Interestingly, availability of Plan B in continuity clinic was associated with higher likelihood of both "never" and "most/all the time" providing EC counseling compared with "sometimes."

Table 2. Characteristics of the 141 Participants

Characteristic	No. (%)
Age, y, mean (SD)	29.2 (2.7)
Female	111 (79)
PGY1	40 (28)
Cared for >10 adolescents, aged 12-18 y, in any setting in the past 3 mo	115 (82)
>50% Of adolescents seen are sexually active	77 (55)
Correctly identify at least 1 method of EC, including dose and timing	114 (81)
Ever prescribed EC	67 (48)
Ever prescribed EC in advance of need	42 (30)

Abbreviations: EC, emergency contraception; PGY1, postgraduate year 1.

Table 3. Distribution of Predictors by EC Counseling Behavior and Intention to Prescribe EC Group

	EC Counseling, %				%			
Predictor	Never (n=41)	Sometimes (n=63)	Always/Most (n=33)	*P* Value	EC Opponent (n=24)	EC Ambivalent (n=86)	EC Proponent (n=24)	*P* Value
Age, y, mean	28.9	29.7	28.4	.07	30.5	28.9	28.7	.03
Male	24	16	18	.55	33	17	8	.08
PGY1	54	11	30	<.001	33	31	17	.20
Abortion Attitude Score, mean	34.5	36.9	41.7	.04	31.1	38.7	39.0	.02
Teen Sex Attitude Score, mean	19.9	21.7	24.4	.01	18.3	22.0	24.8	.003
>50% Of adolescent patients seen are sexually active	50	65	59	.35	67	57	58	.71
Have Plan B to dispense in continuity clinic	10	32	45	<.001	25	30	25	.75
No. of correct knowledge items, mean	2.2	2.7	3.0	.02	2.1	2.7	3.4	.001
Attended EC teaching session	46	68	79	.01	61	63	71	.72
Ever had preceptor encourage EC prescription	15	56	70	<.001	33	43	75	.007
Ever had adolescent patient request EC	5	33	42	.002	17	28	33	.66

Abbreviations: See Table 2.

Table 4. Adjusted RRRs for Never and Always/Mostly Provide EC Counseling Group vs Sometimes

Predictor	Never vs Sometimes Provide EC Counseling RRR[a] (95% CI)	Always/Mostly vs Sometimes Provide EC Counseling RRR[a] (95% CI)
Abortion Attitudes Scale, *z* score	1.3 (0.4-4.6)	1.4 (0.6-3.3)
Teen Sex Attitudes Scale, *z* score	0.6 (0.3-1.6)	1.8 (1.5-2.1)[b]
Attended teaching session that included EC	0.3 (0.1-1.2)	2.0 (0.5-7.5)
Preceptor ever encouraged EC prescription	0.3 (0.2-0.5)[b]	4.8 (2.9-7.9)[b]
Adolescent patient ever requested EC	0.9 (0.3-2.5)	1.1 (0.3-3.7)
No. of correct knowledge items	0.7 (0.5-1.0)	1.1 (0.5-2.3)
Continuity clinic has EC available to dispense	2.0 (1.5-2.8)[b]	1.9 (1.1-3.2)[c]

Abbreviations: CI, confidence interval; EC, emergency contraception; RRR, relative risk ratio.
[a] Adjusted for age, sex, postgraduate year, and all other variables in the Table. The EC ambivalent group serves as the referent.
[b] $P \leq .01$.
[c] $P \leq .05$.

Table 5. Adjusted RRRs for Low and High vs Ambivalent Intention Group

Predictor	Low Intention vs Ambivalent Intention RRR[a] (95% CI)	High Intention vs Ambivalent Intention RRR[a] (95% CI)
Abortion Attitudes Scale, *z* score	0.5 (0.3-0.9)[b]	0.7 (0.2-3.1)
Teen Sex Attitudes Scale, *z* score	0.6 (0.3-1.1)	1.7 (1.0-2.9)[b]
Attended teaching session that included EC	1.0 (0.2-4.0)	1.2 (0.6-2.2)
Preceptor ever encouraged EC prescription	1.0 (0.2-6.3)	6.1 (2.1-17.7)[c]
Adolescent patient ever requested EC	0.4 (0.2-0.6)[c]	1.2 (0.9-1.5)
No. of correct knowledge items	0.7 (0.5-0.9)[c]	1.1 (0.8-1.5)
Continuity clinic has EC available to dispense	0.7 (0.4-1.3)	1.1 (0.8-1.6)

Abbreviations: See Table 4.
[a] Adjusted for age, sex, postgraduate year, and all other variables in the Table. The EC ambivalent group serves as the referent.
[b] $P \leq .05$.
[c] $P \leq .01$.

When adjusting for demographics and other predictors, residents with higher abortion attitudes were half as likely to be classified as low intention compared with ambivalent intention (**Table 5**). The estimate suggests that higher teen sex attitudes also decreased the likelihood of low intention status; however, this result did not reach statistical significance. Residents who had higher knowledge scores were less likely to be classified as low intention when compared with ambivalent intention. Those who had an adolescent patient request EC were less likely to have low than ambivalent intention. Residents with higher teen sex attitudes were almost twice as likely to be classified as high intention compared with ambivalent intention. Residents who had a preceptor encourage EC prescription were 6 times more likely to be classified as high intention compared with ambivalent intention.

COMMENT

In spite of recent changes to the over-the-counter status of Plan B for women older than 18 years, the majority of adolescents must still access EC through a health care provider. While practice guidelines encourage routine EC prescription and counseling for adolescents, our data suggest that the majority of pediatric trainees still have not adopted these guidelines. This corroborates the findings of Lim and colleagues,[9] who reported that only 26% of residents in their sample in New York counsel adolescents about EC at routine visits.

Although the level of awareness of EC among residents in our sample was very high, the frequency of routine EC counseling and advanced prescribing was low and in line with previous studies. In contrast to prior studies, we hypothesized and were able to demonstrate that underlying attitudes of providers about the acceptability of adolescents having sex and about abortion are important factors related to EC counseling and intention to prescribe EC.

Our study adds to the literature by demonstrating that EC counseling and prescribing is not necessarily a yes vs no question and that a majority of practitioners likely hold views that are somewhat ambivalent. Responses to our EC intention scenarios demonstrate that while most practitioners would be likely to prescribe EC in the case of rape or when a patient directly requests it, much fewer are likely to do so at routine visits or for other sexually active adolescents being seen outside of the immediate-use window.

Those who are at the extremes of both EC counseling practice and intention differ from those in the middle. Those with the lowest levels of EC intention tended to have more negative attitudes toward abortion and toward teen sex and to have lower levels of EC knowledge despite having similar exposure to EC teaching sessions. Future work should evaluate the impact of underlying attitudes on acquisition of EC knowledge prospectively.

On the other hand, those with the most favorable attitudes toward teen sex provided the most routine EC counseling and had the highest intention to prescribe EC. Abortion attitudes were not associated with EC counseling and

intention among the intermittent vs routine and ambivalent vs high intenders in multivariable analysis. It may be that those who oppose abortion also oppose EC. For those with more favorable abortion attitudes, however, views about whether teens should have sex are more influential in decisions about when to provide EC.

Values clarification is one strategy that might be used to address the impact of individual values on clinical EC practice. Based largely on the work of Simon et al[21] in educational psychology, values clarification encourages the individual to explicitly identify the internal processes and values that lean them toward certain behaviors. The approach has been applied to reproductive health training in some areas.[22]

There are limitations of this study. First, our data are cross-sectional and we cannot determine the direction of our associations. It may be, for example, that residents who are opposed to contraceptive methods such as EC may make this known to preceptors with whom they work and are then not asked to participate in the care of patients requiring those services. Second, the sample of residents was drawn from residency programs in 1 region of the country, which limits the generalizability of our findings. Finally, while we felt that the anonymous survey collection method was important given the sensitive nature of the questions, this method did not allow us to collect information on nonrespondents or target follow-up. Despite this, our response rate of 50% is on the high end of previously published, anonymous Internet studies of residents.[23-25] The proportion of our sample that was female is also similar to the reported average percentage of women in pediatric training programs reported by the American Medical Association (79% vs 72%[26]).

Strategies to impact adherence to EC practice guidelines should take into account ambivalence and acknowledge that interventions designed to get practitioners to prescribe EC at the time of need may not be enough to move practitioners to proactive and routine practice. For those providers who support EC in some scenarios but do not incorporate it into routine practice, efforts to challenge and affect attitudes toward teen sex may lead to more proactive EC practice. Educators charged with teaching residents to provide care to adolescents should look beyond traditional teaching sessions where information about EC is provided and look for opportunities to encourage EC prescription in specific clinical scenarios.

Accepted for Publication: April 6, 2009.
Correspondence: Krishna K. Upadhya, MD, MPH, Division of General Pediatrics and Adolescent Medicine, Johns Hopkins University School of Medicine, 200 N Wolfe St, Ste 2083, Baltimore, MD 21287 (kupadhy2@jhmi.edu).
Author Contributions: Dr Upadhya had full access to all the data in the study and takes responsibility for the integrity of the data and the accuracy of the data analysis. *Study concept and design:* Upadhya, Trent, and Ellen. *Acquisition of data:* Upadhya. *Analysis and interpretation of data:* Upadhya, Trent, and Ellen. *Drafting of the manuscript:* Upadhya, Trent, and Ellen. *Critical revision of the manuscript for important intellectual content:* Upadhya, Trent, and Ellen. *Study supervision:* Trent and Ellen.

Financial Disclosure: None reported.
Funding/Support: The research was supported by National Institutes of Child Health and Development grant 5T32HD052459-03.
Additional Contributions: We gratefully acknowledge Julia McMillan, MD, for her support of this project. We also thank the program directors and residents who participated in the survey.

REFERENCES

1. Department of Health and Human Services. Healthy People 2010: reproductive health. www.hhs.gov/opa/pubs/hp2010_rh.html. Published October 2001. Accessed October 10, 2006.
2. Trussell J, Ellertson C, von Hertzen H, et al. Estimating the effectiveness of emergency contraceptive pills. *Contraception*. 2003;67(4):259-265.
3. Trussell J, Stewart F, Guest F, Hatcher RA. Emergency contraceptive pills. *Fam Plann Perspect*. 1992;24(6):269-273.
4. Trussell J, Ellertson C, Stewart F, Raymond EG, Shochet T. The role of emergency contraception. *Am J Obstet Gynecol*. 2004;190(4)(suppl):S30-S38.
5. American Academy of Pediatrics Committee on Adolescence. Emergency contraception. *Pediatrics*. 2005;116(4):1026-1035.
6. Gold MA, Sucato GS, Conard LA, Hillard PJ; Society for Adolescent Medicine. Provision of emergency contraception to adolescents. *J Adolesc Health*. 2004;35(1):67-70.
7. Sills MR, Chamberlain JM, Teach SJ. The associations among pediatricians' knowledge, attitudes, and practices regarding emergency contraception. *Pediatrics*. 2000;105(4, pt 2):954-956.
8. Golden NH, Seigel WM, Fisher M, et al. Emergency contraception. *Pediatrics*. 2001;107(2):287-292.
9. Lim SW, Iheagwara KN, Legano L, Coupey SM. Emergency contraception: are pediatric residents counseling and prescribing to teens? *J Pediatr Adolesc Gynecol*. 2008;21(3):129-134.
10. Fortenberry JD, Kaplan DW, Hill RF. Physicians' values and experience during adolescence. *J Adolesc Health Care*. 1988;9(1):46-51.
11. Curlin FA, Lawrence RE, Chin MH, Lantos JD. Religion, conscience, and controversial clinical practices. *N Engl J Med*. 2007;356(6):593-600.
12. Conard LA, Fortenberry JD, Blythe MJ, Orr DP. Pharmacists' attitudes toward and practices with adolescents. *Arch Pediatr Adolesc Med*. 2003;157(4):361-365.
13. Grimes DA. Emergency contraception: politics trumps science at the US Food and Drug Administration. *Obstet Gynecol*. 2004;104(2):220-221.
14. Pruitt SL, Mullen PD. Contraception or abortion? *Contraception*. 2005;71(1):14-21.
15. Simonds W, Ellertson C. Emergency contraception and morality: reflections of health care workers and clients. *Soc Sci Med*. 2004;58(7):1285-1297.
16. Karasz A, Kirchen NT, Gold M. The visit before the morning after: barriers to preprescribing emergency contraception. *Ann Fam Med*. 2004;2(4):345-350.
17. Fairhurst K, Wyke S, Ziebland S, Seaman P, Glasier A. "Not that sort of practice": the views and behaviour of primary care practitioners in a study of advance provision of emergency contraception. *Fam Pract*. 2005;22(3):280-286.
18. Green LW, Kreuter MW. *Health Promotion and Planning: An Educational and Ecological Approach*. 3rd ed. Mountain View, CA: Mayfield Publishing Co; 1999.
19. Esposito CL, Basow SA. College student's attitudes toward abortion: the role of knowledge and demographic variables. *J Appl Soc Psychol*. 1995;25(22):1996-2015.
20. Hill A, Wilson C, Sullivan S. The relationship between attitudes towards abortion and cognitive complexity. University of Wisconsin Lacrosse Journal of Undergraduate Research Web Site. http://www.uwlax.edu/URC/JUR-online/PDF/2004/hill.pdf. Published 2004. Accessed October 9, 2008.
21. Simon S, Howe L, Kirschenbaum H. *Values Clarification: A Handbook of Practical Strategies for Teachers and Students*. New York, NY: Hart; 1972.
22. Mitchell EM, Trueman K, Gabriel M, Bock LB. Building alliances from ambivalence. *Afr J Reprod Health*. 2005;9(3):89-99.
23. Cohen-Gadol AA, Piepgras DG, Krishnamurthy S, Fessler RD. Resident duty hours reform. *Neurosurgery*. 2005;56(2):398-403.
24. Resnick AS, Todd BA, Mullen JL, Morris JB. How do surgical residents and non-physician practitioners play together in the sandbox? *Curr Surg*. 2006;63(2):155-164.
25. Briscoe GW, Fore Arcand LG, Lin T, Johnson J, Rai A, Kollins K. Students' and residents' perceptions regarding technology in medical training. *Acad Psychiatry*. 2006;30(6):470-479.
26. FREIDA Online specialty training statistics: pediatrics. American Medical Association Web site. https://freida.ama-assn.org/Freida/user/specStatisticsSearch.do?method=viewDetail&pageNumber=2&spcCd=320. Published 2007. Accessed January 5, 2009.