Counseling About and Use of Emergency Contraception In the United States

CONTEXT: *Few nationally representative studies have examined the prevalence and predictors of emergency contraception use or of receipt of counseling about the method. The impact of the U.S. Food and Drug Administration's 2006 approval of behind-the-counter sales of the method to women aged 18 and older remains to be seen; therefore, understanding patterns of use and counseling before the 2006 policy change is necessary to assess its impact.*

METHODS: *Data collected from 7,643 women aged 15–44 participating in the 2002 National Survey of Family Growth were analyzed using multivariable logistic regression to assess predictors of receipt of counseling and use of emergency contraception.*

RESULTS: *Overall, 3% of women reported that a clinician had discussed emergency contraception with them in the past year, and 4% of those who had ever had sex with a man reported having used the method. Only 4% of those who had seen a gynecologist in the past year reported having received counseling. Women's likelihood of having received counseling was reduced if they were 30 or older (odds ratio, 0.2), and was elevated if they were Hispanic (4.1), black (2.6) or ever-married (2.4). Receipt of counseling in the last 12 months was the strongest predictor of ever-use (11.7).*

CONCLUSIONS: *Clinicians can play a pivotal role in ensuring that women have accurate information about how to access and use emergency contraception. However, efforts are needed to explore other ways to deliver this counseling.*
Perspectives on Sexual and Reproductive Health, 2008, 40(2):81–86, doi: 10.1363/4008108

By Megan L. Kavanaugh and Eleanor Bimla Schwarz

Megan L. Kavanaugh, is a doctoral student, Department of Behavioral and Community Health Sciences, University of Pittsburgh Graduate School of Public Health; Eleanor Bimla Schwarz is assistant professor of medicine, epidemiology, obstetrics, gynecology and reproductive sciences, Center for Research on Health Care, Division of General Internal Medicine, Department of Medicine, University of Pittsburgh.

Among industrialized countries, the United States has the highest rate of unintended pregnancy.[1] Unintended pregnancy is especially common among women who are younger than 25, have less than a high school education or are low-income.[2] Emergency contraception, a safe and effective method of preventing pregnancy after an episode of unprotected sex or contraceptive failure,[3] is an important component of a comprehensive approach to preventing unintended pregnancies. A 1992 model projected that if emergency contraception were used after all contraceptive failures, 50% of unintended pregnancies and 60–70% of abortions would be prevented.[4] Although this projection has not yet been realized,[5,6] use of emergency contraception is estimated to have prevented 51,000 abortions in 2000.[7]

Several prominent medical organizations have recommended that counseling regarding emergency contraception be incorporated into routine health care provider visits,[8–11] but research describing the extent to which these recommendations are followed nationwide is lacking. A few studies have assessed receipt of emergency contraception counseling in select populations. In rural North Carolina, 16% of women visiting medical clinics reported ever having discussed emergency contraception with a health care provider.[12] In a study of university students in North Carolina, 23% of women, and 34% of those who had had a gynecologic examination in the past year, reported having discussed emergency contraception

with their provider.[13] In contrast, only 10% of women aged 18–45 who visited a general internal medicine clinic in Pittsburgh reported receipt of physician counseling on emergency contraception in the past year.[14] In Massachusetts, 25% of women living in a socioeconomically and ethnically heterogeneous neighborhood of Boston reported that they had ever discussed emergency contraception with a health care provider.[15]

Only two studies have examined use of emergency contraception by U.S. women in nationally representative samples, and both of these collected data before 1998, when the Food and Drug Administration (FDA) approved the first dedicated emergency contraception product in the United States. One reported that in 1994, 1% of women aged 18 and older had ever used emergency contraception;[16] the other, a 2000 comprehensive review of emergency contraception studies, found an unpublished report based on data from the 1995 National Survey of Family Growth (NSFG) showing that 1% of women aged 15–44 had ever used the method.[17]

Abroad, nationally representative studies of ever-use of emergency contraception among women of reproductive age have found rates ranging from 1% in Nigeria[18] and 4% in Finland[19] to 12% in the United Kingdom.[20] Studies examining use in the last year have found rates of 2–4% in the United Kingdom[21] and France.[22]

While the 2002 cycle of the NSFG collected a substantial amount of data about emergency contraception,

TABLE 1. Percentage distribution of U.S. women aged 15–44, and percentages who have received counseling about emergency contraception in the past year and who have ever used emergency contraception, by selected characteristics; and odds ratios from bivariate logistic regression analyses assessing relationships between receipt of counseling and ever-use and these characteristics; 2002 National Survey of Family Growth

Characteristic	% of all women (N=7,643)†	Received counseling (N=7,635)		Ever used (N=6,780)		Characteristic	% of all women (N=7,643)†	Received counseling (N=7,635)		Ever used (N=6,780)	
		%	Odds ratio	%	Odds ratio			%	Odds ratio	%	Odds ratio
All	**100.0**	**3.2**	**na**	**4.2**	**na**	**No. of lifetime male partners**					
						0 (ref)	13.5	2.0	1.00	0.0	na
DEMOGRAPHIC						1	21.4	3.6	1.78*	1.8	1.00
Age						>1	65.1	3.4	1.67*	5.0	2.84***
15–17 (ref)	9.5	5.0	1.00	4.7	1.00						
18–24	22.5	7.6	1.55	9.4	2.08	**Ever had abortion**					
25–29	15.0	3.4	0.67	5.2	1.11	No (ref)	76.9	2.0	1.00	1.9	1.00
≥30	53.0	1.0	0.19**	2.0	0.41*	Yes	23.1	3.4	1.73*	7.4	4.19***
Race						**Age at first intercourse**					
White (ref)	76.5	2.9	1.00	4.2	1.00	<16	25.3	3.5	1.73*	5.4	2.99***
Black	15.1	4.4	1.51*	3.8	0.90	16–20	50.6	3.7	1.81*	4.1	2.22**
Other	8.4	4.0	1.37	4.1	0.96	21–25 (ref)	24.1	2.1	1.00	1.9	1.00
Ethnicity						**No. of births**					
Non-Hispanic (ref)	85.2	2.7	1.00	4.2	1.00	0	41.6	4.9	2.37**	7.8	3.71***
Hispanic	15.0	6.4	2.46***	3.8	0.91	1–2	40.0	2.0	0.93	2.3	1.05
						>2 (ref)	18.4	2.1	1.00	2.2	1.00
Education											
≤high school (ref)	21.2	4.3	1.00	3.3	1.00	**Intend additional births**					
High school graduate	56.7	3.6	0.84	4.0	1.21	No (ref)	54.1	1.9	1.00	2.3	1.00
College graduate	22.1	1.2	0.26***	5.2	1.60	Yes	45.9	4.8	2.62***	6.7	2.98***
Work status						**Ever used condom**					
Not working (ref)	33.5	3.2	1.00	3.5	1.00	No (ref)	10.4	2.5	1.00	0.7	1.00
Working part-time‡	23.1	5.6	1.82***	5.3	1.53*	Yes	89.7	3.5	1.42	4.6	7.10***
Working full-time	43.5	2.0	0.63**	4.0	1.15						
						Ever used hormonal method					
% of poverty level						No (ref)	26.0	3.0	1.00	2.9	1.00
<100 (ref)	19.1	5.0	1.00	4.0	1.00	Yes	74.0	3.3	1.12	4.4	1.56*
100–499	69.0	2.8	0.54***	4.1	1.03						
≥500	11.9	3.1	0.61	4.9	1.24	**Ever used long-acting method§**					
						No (ref)	79.8	3.0	1.00	4.1	1.00
Marital status						Yes	20.2	4.0	1.33	4.5	1.11
Never-married (ref)	46.0	1.1	1.00	1.8	1.00						
Ever-married	54.0	5.1	5.05***	6.8	3.97***	**Saw gynecologist in past year for Pap test or pelvic exam**					
						No (ref)	33.3	1.8	1.00	4.4	1.00
Religion						Yes	66.7	4.0	2.24***	3.6	1.20
None (ref)	14.1	5.0	1.00	6.6	1.00						
Catholic	28.7	4.5	0.88	3.5	0.52**	**Received emergency contraceptive counseling in past year**					
Protestant	51.3	2.2	0.42***	3.7	0.55**	No (ref)	96.8	0.0	na	3.3	1.00
Other	5.9	2.1	0.41*	5.1	0.76	Yes	3.2	100.0	na	28.2	11.48***
REPRODUCTIVE HEALTH						**Ever used emergency contraception††**					
No. of pregnancies						Never (ref)	95.8	2.5	1.00	0.0	na
0 (ref)	34.3	5.0	1.00	7.0	1.00	Ever	4.2	23.1	11.48***	100.0	na
1–4	57.5	2.3	0.44***	3.1	0.43***						
>4	8.3	2.6	0.51	3.6	0.49*						

*p<.05. **p<.01. ***p<.001. †Weighted to reflect the U.S. female civilian noninstitutional population of the United States. ‡Includes part-time workers and workers on temporary leave from full-time work for disability, illness or maternity reasons. §Injectable, implant or IUD. ††Based on respondents who reported ever having had intercourse with a male (N=6,780). *Notes:* na=not applicable. ref=reference group. Because of missing data, denominators are reduced for abortion history (4,945), condom use (6,780), visit with a gynecologist (7,639) and receipt of counseling (7,635).

the only published analyses that we are aware of have been summary statistics in which emergency contraception has been included in descriptions of use of various methods of birth control or in which use has been shown according to women's age, race or ethnicity.[23–25] To update the U.S. literature related to emergency contraception and to facilitate future analyses of the impact of over-the-counter access to the method, this study aimed

to estimate the prevalence of counseling about and use of emergency contraception, to describe the relationship between receipt of counseling and use of the method, and to identify demographic and reproductive health characteristics associated with receipt of counseling about and use of emergency contraception among U.S. women of reproductive age in 2002.

METHODS

Data were drawn from the female respondent questionnaire in the 2002 NSFG, which included a representative sample of 7,643 U.S. women aged 15–44 in the civilian, noninstitutionalized, household population. Respondents completed face-to-face interviews that used computer-assisted personal interviewing methods to collect information on their demographic characteristics, marital and cohabitation history, fecundity, pregnancy and adoption history, birth expectations, pregnancy wantedness, and use of family planning services and contraception. Detailed information on the survey methodology, as well as on the sampling design, estimation procedures and variance estimation, has been published elsewhere.[26,27]

In this study, we examined all variables associated with emergency contraception and all demographic and reproductive health data collected by the 2002 NSFG. All data coded as "refusal" or "don't know" were recoded as missing, as suggested by the survey's user's guide.[28] All respondents were considered to be potential recipients of emergency contraception counseling; all those who reported ever having had sexual intercourse with a male were considered potential users of the method. In addition, we examined receipt of emergency contraception counseling among women who had seen a gynecologist in the last year. The NSFG did not assess whether women had seen other types of clinicians in the last year.

For all categorical predictors of emergency contraception counseling and use, we conducted chi-square and logistic regression analyses. Variables that were significant at p<0.1 in bivariate analyses were entered into two multivariable logistic regression models, which considered the weighting and stratification of the data in the survey analysis function. Receipt of emergency contraception counseling in the past year was the dependent variable in the first model, and ever-use was the dependent variable in the second model. Following each iteration of a stepwise elimination regression process, each independent variable with p>0.1 was tested to determine if its inclusion affected the model. If the test was not significant at p<.05, the variable was omitted from the model. The counseling model included age, race, ethnicity, marital status, age at first sexual intercourse, work status and history of abortion; the use model included age, education, marital status, age at first sex, history of abortion and receipt of emergency contraception counseling. For each model, we report odds ratios and their 95% confidence intervals.

All analyses were conducted using the survey function within STATA (version 9.1) to account for weighting necessary for the NSFG's use of a multistage probability sample. This study was approved by the institutional review board at the University of Pittsburgh.

RESULTS

Descriptive Findings

Of the 7,643 women interviewed for the 2002 NSFG, 7,635 responded to the question "In the past 12 months, have you received counseling or information about emergency contraception or the 'morning-after pill'?" The remaining eight respondents, who were coded as "refusal" or "don't know" by the interviewers, were omitted from this analysis. A total of 6,785 respondents indicated that they had ever had sexual intercourse with a male and responded to the question "Have you ever used 'morning-after' pills or emergency contraception?" Five of these were coded as "refusal" or "don't know" by the interviewers and were omitted from this analysis.

Overall, almost half of respondents were younger than 30 (Table 1). Most were white (77%) and non-Hispanic (85%), had at least a high school education (79%) and were working at least part-time (67%). Two-thirds of respondents had been pregnant at least once.

Only 3% of all respondents indicated that they had received counseling about emergency contraception from a health care provider in the past year. The proportion was about the same—4%—even among the 67% of women who reported having seen a gynecologist for a Pap smear or pelvic examination in the last 12 months. Overall, 4% of respondents who reported ever having had sex with a male partner said that they had ever used emergency contraception.

The majority of women who reported ever having used emergency contraception said they had used it only once (73%). Similar proportions of ever-users attributed their use to worry that their regular method had not worked (39%) and to nonuse of any other form of birth control (43%). One-quarter of women who reported ever having used emergency contraception indicated that they had received a prescription for the method in the past year.

Of ever-users who reported both that they had received emergency contraception pills or a prescription for the method in the past 12 months and that they had visited a health care provider during this time, the most common source for emergency contraception services was a family planning or Planned Parenthood clinic (42%). Less frequently used sources were private doctors' offices (20%), community clinics or schools (20%), HMOs (6%), hospital outpatient centers (6%), urgent care or walk-in facilities (2%) and other locations (5%).

Among ever-users of emergency contraception who reported both having received counseling about the method in the past 12 months and having visited a health care provider during this time, 36% had had their counseling at a community health center, school or work clinic. Similar proportions had received counseling at a family planning or Planned Parenthood clinic (27%) and at a private doctor's office

(26%). The rest had received counseling at a hospital (6%), an HMO (2%), an urgent care facility or walk-in clinic (1%) or some other location (2%).

Emergency Contraception Counseling and Use

In bivariate analyses (Table 1), women aged 30 or older were less likely than 15–17-year-olds to report having received counseling about emergency contraception in the past year or ever having used the method. Receipt of counseling was more likely among Hispanic and ever-married women than among their non-Hispanic and never-married counterparts. Ever-married women also were more likely than never-married women to report having used the method.

At the bivariate level, reproductive characteristics were closely related to both outcomes. The likelihood of having received emergency contraception counseling in the past year was elevated among women who had had at least one male partner, had ever had an abortion, had been 20 or younger at first intercourse, had never given birth, intended to give birth in the future, had seen a gynecologist in the past year or had ever used emergency contraception. The odds of ever having used emergency contraception were raised among women who had had

more than one male partner, had ever had an abortion, had been teenagers at first intercourse, had never given birth, intended to give birth in the future, had ever used a condom, had ever used hormonal contraceptives or had received counseling about emergency contraception in the past year.

In multivariable analyses (Table 2), women aged 30 or older had lower odds than those aged 15–17 of having received emergency contraception counseling (odds ratio, 0.2), and those who had first had intercourse before age 15 had reduced odds as compared with those who had been in their early 20s (0.5). The odds of this outcome were higher among black women than among whites (2.6) and were elevated among Hispanics (4.1), ever-married women (2.4) and women who had had an abortion (1.9).

The likelihood of ever-use of emergency contraception (Table 3) was elevated among college-graduates, ever-married women, those who had been teenagers at first intercourse and those who had had an abortion (odds ratios, 2.0–4.0). Even after adjusting for these characteristics, however, women who had been counseled by a clinician about emergency contraception in the last year were considerably more likely than others ever to have used the method (11.7).

DISCUSSION

U.S. women who said in 2002 that they had ever used emergency contraception were significantly more likely than women who had never used the method to have received counseling about it in the last 12 months. Unfortunately, however, even women who had recently undergone a pelvic examination were unlikely to have received counseling about emergency contraception from their clinician, and the prevalence of use was far below the documented prevalence of unintended pregnancy[2] or abortion.[29] Our analysis cannot determine a causal relationship between women's receipt of counseling about emergency contraception and use of the method. However, the strong relationship between these two outcomes implies that clinicians can play a pivotal role in informing women about the existence and appropriate use of emergency contraception, and that counseling will likely continue to be important even though the medication is available without a prescription for certain populations of women.

The prevalence of ever-use of emergency contraception increased from 1% in 1995[17] to 4% in 2002. Several factors likely contributed to the change, including the FDA's approval of two dedicated emergency contraception products, the introduction of pharmacy access to emergency contraception in some states and media coverage of the debate surrounding over-the-counter status for the method. Despite these positive developments, the prevalence of ever-use of emergency contraception in the United States in 2002 was far below the 12% reported among British women in 1996.[23] This finding is troubling, given the comparatively high rate of unintended pregnancy in the United States.

TABLE 2. Odds ratios (and 95% confidence intervals) from logistic regression analyses assessing the associations between selected characteristics and women's likelihood of having received counseling about emergency contraception within the last year

Characteristic	Odds ratio
Age	
15–17 (ref)	1.00
18–24	0.88 (0.26–2.96)
25–29	0.50 (0.15–1.67)
≥30	0.16** (0.05–0.55)
Race	
White (ref)	1.00
Black	2.58** (1.50–4.43)
Other	1.31 (0.77–2.22)
Ethnicity	
Non-Hispanic (ref)	1.00
Hispanic	4.06*** (2.45–6.72)
Marital status	
Never-married (ref)	1.00
Ever-married	2.40*** (1.49–3.87)
Work status	
Not working (ref)	1.00
Working part-time	1.39 (0.90–2.15)
Working full-time	0.77 (0.48–1.22)
Age at first intercourse	
<16	0.49* (0.25–0.96)
16–20	0.61 (0.31–1.19)
21–25 (ref)	1.00
Ever had abortion	
No (ref)	1.00
Yes	1.90** (1.25–2.87)

*p<.05. **p<.01. ***p<.001. *Notes:* Odds ratios are adjusted for all characteristics in the table, which were included in the model on the basis of results of a stepwise elimination regression process. ref=reference group.

TABLE 3. Odds ratios (and 95% confidence intervals) from logistic regression analyses assessing the associations between selected characteristics and women's likelihood of ever having used emergency contraception

Characteristic	Odds ratio
Age	
15–17 (ref)	1.00
18–24	2.49 (0.53–11.56)
25–29	1.98 (0.39–10.03)
≥30	0.78 (0.15–3.96)
Education	
≤high school (ref)	1.00
High school graduate	1.25 (0.66–2.36)
College graduate	3.97** (1.68–9.37)
Marital status	
Never-married (ref)	1.00
Ever-married	2.02** (1.30–3.13)
Age at first intercourse	
<16	3.70** (1.76–7.78)
16–20	2.69* (1.27–5.70)
21–25 (ref)	1.00
Ever had abortion	
No (ref)	1.00
Yes	3.39*** (2.35–4.90)
Received emergency contraceptive counseling in past year	
No (ref)	1.00
Yes	11.72*** (6.20–22.15)

*p<.05. **p<.01. ***p<.001. *Notes:* Odds ratios are adjusted for all characteristics in the table, which were included in the model on the basis of the results of a stepwise elimination regression process. ref=reference group.

Emergency contraception's status as a prescription medication in 2002 (except in Washington State and California, where women could access the method directly from pharmacies beginning in 1997 and 2002, respectively) may help explain why counseling was the strongest predictor of use, even after adjustment for several demographic and reproductive health characteristics. However, clinician counseling likely will remain relevant even after women are able to obtain emergency contraception without a prescription, because without counseling or major media campaigns, many women may remain unaware of the change.[30] While clinicians are often challenged by the need to prioritize possible preventive health interventions,[31] the majority of U.S. women at risk for unplanned pregnancies rely on health professionals for information on birth control,[16] and brief clinician counseling is important in promoting other health-related behaviors.[32] Therefore, the prevalence and societal costs of unintended pregnancy and abortion suggest that emergency contraception counseling should be a priority.

Our study sheds light on the overall contraceptive behavior of emergency contraception users and helps refute the popular misconception that when emergency contraception is readily available, women substitute its use for the use of routine contraception. The majority of NSFG respondents who had ever used the method said that they had done so only once; this finding is consistent with results of several other studies.[33–36] Furthermore, use of emergency contraception was about equally attributable to contraceptive failure and nonuse. Finally, at the multivariable level, women's use of regular methods did not predict their use of emergency contraception; data from France support this finding,[22] although a British study indicates that emergency contraception use is associated with the use of condoms rather than hormonal contraception.[23]

Several limitations are inherent in the analysis of cross-sectional data from a national sample. No temporal relationship can be established between variables, rendering interpretation of some of these findings challenging. For example, emergency contraception use was measured over a lifetime, while receipt of counseling was assessed solely for the past 12 months; it is impossible to determine whether counseling preceded or followed use. Furthermore, women who had used emergency contraception may have been more likely than never-users to remember having been counseled about it by a health care provider.

Similarly, it is impossible to determine whether the association between abortion and ever-use of emergency contraception reflects that women obtaining abortions often are counseled about emergency contraception and use it subsequently or if use occurred prior to abortion. Finally, abortion statistics in national data sets, including the NSFG, should always be interpreted with caution because of high levels of underreporting.[37]

To the best of our knowledge, this study provides the most current national data on receipt of counseling about and use of emergency contraception. However, several societal changes that have occurred since the 2002 NSFG will likely affect use of emergency contraception in the United States, particularly the 2006 shift in the method's status from prescription-only to behind-the-counter for women aged 18 and older. However, because emergency contraception remains available only by prescription for women younger than 18, clinician counseling on the method will likely remain an integral strategy for increasing its use in this high-risk population.

If U.S. women's use of emergency contraception is to increase, they must be aware that this method exists, feel it is safe and effective, and know how to access it in a timely fashion. Each of these aspects warrants further research attention. Given the time pressures within which clinicians frequently work, as well as the competing demands on their time to address multiple preventive health topics, efforts are needed to explore alternative ways of delivering counseling. Initiatives to increase emergency contraception knowledge outside clinical settings should be expanded to include the media and other broad-based educational efforts to reach women at high risk for unintended pregnancy who typically receive reproductive health information from their clinicians. Recognizing that a significant proportion of women who use emergency contraception do so because they are concerned about the possibility of contraceptive failure, efforts to increase use of this method must be coupled with efforts to increase effective use of other contraceptives.

The potential for emergency contraception to significantly impact rates of unintended pregnancy and abortion has yet to be realized, but recent trends of increasing use of the method in the United States provide hope that progress—albeit slow—is being made. We are hopeful that this study will encourage clinicians to counsel their reproductive-age patients, especially those who are at high risk for unintended pregnancy, about emergency contraception.

REFERENCES

1. The Alan Guttmacher Institute, *Sharing Responsibility: Women, Society and Abortion Worldwide*, New York: The Alan Guttmacher Institute, 1999.

2. Finer LB and Henshaw SK, Disparities in rates of unintended pregnancy in the United States, 1994 and 2001, *Perspectives on Sexual and Reproductive Health*, 2006, 38(2):90–96.

3. Glasier A., Safety of emergency contraception, *Journal of the American Medical Women's Association*, 1998, 53(5 Suppl. 2): 219–221.

4. Trussell J et al., Emergency contraceptive pills: a simple proposal to reduce unintended pregnancies, *Family Planning Perspectives*, 1992, 24(6):269–273.

5. Polis CB et al., Advance provision of emergency contraception for pregnancy prevention (full review), *Cochrane Database of Systematic Reviews*, 2007, Issue 2, No. CD005497.

6. Raymond EG, Trussell J and Polis CB, Population effect of increased access to emergency contraceptive pills: a systematic review, *Obstetrics & Gynecology*, 2007, 109(1):181–188.

7. Jones RK, Darroch JE and Henshaw SK, Contraceptive use among U.S. women having abortions in 2000–2001, *Perspectives on Sexual and Reproductive Health*, 2002, 34(6):294–303.

8. American College of Obstetricians and Gynecologists (ACOG), ACOG practice bulletin, emergency oral contraception, Number 25, March 2001, *International Journal of Gynaecology and Obstetrics*, 2002, 78(2):191–198.

9. Gold M et al., Provision of emergency contraception to adolescents: position paper of the Society for Adolescent Medicine, *Journal of Adolescent Health*, 2004, 35(1):66–70.

10. American Academy of Pediatrics Committee on Adolescence, American Academy of Pediatrics policy statement on emergency contraception, *Pediatrics*, 2005, 116(4):1026–1035.

11. International Planned Parenthood Federation, IMAP statement on emergency contraception, *IPPF Medical Bulletin*, 2004, 38(1):1–3.

12. Fagan EB et al., Knowledge, attitudes, and use of emergency contraception among rural western North Carolina women, *Southern Medical Journal*, 2006, 99(8):806–810.

13. Corbett PO et al., Emergency contraception: knowledge and perceptions in a university population, *Journal of the American Academy of Nurse Practitioners*, 2006, 18(4):161–168.

14. Cunnane MS, Dickson G and Cook RL, Women's experiences with emergency contraception in an internal medicine practice, *Journal of Women's Health*, 2006, 15(9):1080–1089.

15. Chuang CH and Freund KM, Emergency contraception knowledge among women in a Boston community, *Contraception*, 2005, 71(2):157–160.

16. Delbanco SF, Mauldon J and Smith MD, Little knowledge and limited practice: emergency contraceptive pills, the public, and the obstetrician-gynecologist, *Obstetrics & Gynecology*, 1997, 89(6): 1006–1011.

17. Ellertson C et al., Emergency contraception: a review of the programmatic and social science literature, *Contraception*, 2000, 61(3):145–186.

18. Society for Family Health, *Emergency Contraception in Nigeria*, Lagos, Nigeria: Society for Family Health, 1998.

19. Kosusen E, Sihvo S and Hemminki E, Knowledge and use of hormonal emergency contraception in Finland, *Contraception*, 1997, 55(3):153–157.

20. Crosier A., Women's knowledge and awareness of emergency contraception, *British Journal of Family Planning*, 1996, 22(2):87–90.

21. Black KI et al., Sociodemographic and sexual health profile of users of emergency hormonal contraception: data from a British probability sample survey, *Contraception*, 2006, 74(4):309–312.

22. Goulard H et al., Contraceptive failures and determinants of emergency contraception use, *Contraception*, 2006, 74(3):208–213.

23. Chandra A et al., Fertility, family planning, and reproductive health of U.S. women: data from the 2002 National Survey of Family Growth, *Vital and Health Statistics*, 2005, Series 23, No. 25.

24. Abma JC et al., Teenagers in the United States: sexual activity, contraceptive use, and childbearing, 2002, *Vital and Health Statistics*, 2004, Series 23, No. 24.

25. Mosher WD et al., Use of contraception and use of family planning services in the United States: 1982–2002, *Advance Data from Vital and Health Statistics*, 2004, No. 350.

26. Groves RM et al., Plan and operation of Cycle 6 of the National Survey of Family Growth, *Vital and Health Statistics*, 2005, Series 1, No. 42.

27. Lepkowski JM et al., National Survey of Family Growth, Cycle 6: sample design, weighting, imputation, and variance estimation, *Vital and Health Statistics*, 2006, Series 2, No. 142.

28. U.S. Department of Health and Human Services, Public use data file documentation, National Survey of Family Growth Cycle 6: 2002, user's guide, <http://www.cdc.gov/nchs/data/nsfg/UserGuide_2002NSFG.pdf>, 2004, accessed Mar. 8, 2007.

29. Hamilton BE. and Ventura SJ, Fertility and abortion rates in the United States, 1960–2002, *International Journal of Andrology*, 2006, 29(1):34–45.

30. Schwarz EB et al., Knowledge of and perceived access to emergency contraception at two urgent care clinics in California, *Contraception*, 2007, 75(3):209–213.

31. Yarnall KS et al., Primary care: is there enough time for prevention? *American Journal of Public Health*, 2003, 93(4):635–641.

32. Fiore MB et al., *Treating Tobacco Use and Dependence: Clinical Practice Guideline*, Rockville, MD: U.S. Department of Health and Human Services, 2000.

33. Glasier A and Baird D, The effects of self-administering emergency contraception, *New England Journal of Medicine*, 1998, 339(1):1–4.

34. Jackson RA et al., Advance supply of emergency contraception: effect on use and usual contraception—a randomized trial, *Obstetrics & Gynecology*, 2003, 102(1):8–16.

35. Raine T et al., Emergency contraception: advance provision in a young, high-risk clinic population, *Obstetrics & Gynecology*, 2000, 96(1):1–7.

36. Raine TR et al., Direct access to emergency contraception through pharmacies and effect on unintended pregnancy and STIs: a randomized controlled trial, *Journal of the American Medical Association*, 2005, 293(1):54–62.

37. Fu H et al., Measuring the extent of abortion underreporting in the 1995 National Survey of Family Growth, *Family Planning Perspectives*, 1998, 30(3):128–133 & 138.

Author contact: *mlc27@pitt.edu*