



Original research article

# Emergency contraception: A multispecialty survey of clinician knowledge and practices<sup>☆</sup>

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## Abstract

**Objectives:** To assess knowledge and provision of emergency contraception (EC), particularly the most effective methods.

**Study design:** A web-based survey was distributed to a cross-sectional convenience sample of healthcare providers across specialties treating reproductive-aged women. The survey was sent to 3260 practicing physicians and advanced practice clinicians in 14 academic centers between February 2013 and April 2014. We analyzed responses by provider specialty using multivariable logistic regression.

**Results:** The final sample included 1684 providers (response rate=51.7%). Ninety-five percent of the respondents had heard of levonorgestrel (LNG) EC. Among reproductive health specialists, 81% provide LNG EC in their practice, although only half (52%) had heard of ulipristal acetate (UPA) and very few provide it (14%). The majority in family medicine (69%) and emergency medicine (74%) provide LNG, in contrast to 42% of internists and 55% of pediatricians. However, the more effective methods [UPA and copper intrauterine device (IUD)] were little known and rarely provided outside of reproductive health specialties; 18% of internists and 14% of emergency medicine providers had heard of UPA and 4% provide it. Only 22% of emergency providers and 32% of pediatricians had heard of the copper IUD used as EC. Among reproductive health specialists, only 36% provide copper IUD as EC in their practice. Specialty, provider type and proportion of women of reproductive age in the practice were related to knowledge and provision of some forms of EC.

**Conclusions:** Awareness and provision of the most effective EC methods, UPA and the copper IUD (which are provider dependent), are substantially lower than for LNG EC, especially among providers who do not focus on reproductive health.

**Implications:** In our sample of 1684 healthcare providers from diverse specialties who treat reproductive-aged women, knowledge and provision of the most effective forms of EC (UPA and the copper IUD) are far lower than for LNG EC. Women should be offered the full range of EC methods.

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## 1. Introduction

Emergency contraception (EC) provides a last opportunity to prevent pregnancy resulting from lapses in contraceptive use, method failure or forced sex. In the United States, four EC methods are available: the copper intrauterine device (IUD), levonorgestrel (LNG) 1.5 mg (a progestin-only pill), ulipristal acetate (UPA) 30 mg (an antiprogestin pill) and the Yuzpe method (oral contraceptives taken in various combinations). Although major medical associations [1–5] recommend counseling women at risk of unintended pregnancy about EC, a 2011 study found that only 3% of women received such counseling in the past year [6]. Often, providers rely on patients to initiate discussions about EC [7]. Although ongoing contraception is far more effective at preventing pregnancy, the high rate of unintended pregnancy in the United States suggests that unprotected sex is prevalent, indicating that many women could benefit from EC [8].

Since 2014, one-dose LNG EC products are approved for unrestricted sale over the counter (OTC). Although the high cost of LNG EC may be a barrier, it is now substantially easier to obtain than UPA and the copper IUD. However, UPA [9] and the copper IUD are more effective than LNG (and all of these are more effective than the Yuzpe method). A review of 42 studies showed that the copper IUD is nearly 100% effective when inserted after unprotected intercourse [10]. A randomized controlled trial showed that women treated with UPA had about half the number of pregnancies than those treated with LNG (odds ratio=0.58; 95% confidence interval (CI) 0.33–0.99) [9], and an analysis of two randomized trials showed that the risk of pregnancy for LNG users was about half that for users of the Yuzpe regimen (relative risk=0.51; 95% CI 0.31–0.83) [11]. Some research suggests that LNG may be ineffective for women weighing 154 lb or more and UPA may be ineffective for women weighing 194 lb or more [12,13]. Therefore, the copper IUD and UPA may be more appropriate first-line options in heavier women [13].

Because the most effective methods of EC are provider dependent, it is important to understand providers' knowledge and provision of EC. This study assesses awareness and practice patterns among a large and diverse group of providers who care for reproductive-aged women, and this study describes some of the factors associated with knowledge and provision of EC.

## 2. Materials and methods

### 2.1. Study design and data collection

Using a convenience sample, we surveyed healthcare providers working at 14 academic medical centers and their affiliated community hospitals and outpatient centers. Eligible subjects were in specialties most likely to provide care for reproductive-aged women: obstetrics-gynecology, women's health, internal medicine, family medicine, pediatrics (including

adolescent medicine), emergency medicine and internal medicine/pediatrics. Providers who do not see reproductive-aged women were excluded from the study. The survey was sent to 3260 eligible practicing physicians (including residents and fellows) and advanced practice clinicians from February 2013 to April 2014. A lead investigator at each study site recruited participants and obtained institutional review board approval or exemption. Subjects received an email invitation from the investigator at each site, which described the purpose of the study and provided a statement of consent, instructions and a link to the web-based survey (developed using Research Electronic Data Capture) [14]. All efforts were made to remove specialties for which provision of contraception is entirely outside scope of practice. No incentives were offered to complete the survey.

Five investigators with expertise in EC designed the survey, which was reviewed by 16 collaborators and a 20-member external research committee, then field-tested with 22 practicing clinicians for readability and face validity. The survey collected demographic and practice information, including age, gender, years in practice, practice setting (coded as academic or nonacademic, based on self-report), type of provider [staff physician, trainee (resident or fellow), or advanced practice clinician (nurse practitioner, certified nurse midwife or physician assistant)], the proportion of women of reproductive age in the practice and medical specialty. Respondents selected as many specialties as applied; these were recoded into five categories, and those choosing more than one category were coded following this hierarchy: emergency medicine, pediatrics, family practice, internal medicine and reproductive health providers.

Participants were asked whether they had heard of the four EC methods available in the United States (LNG, UPA, the Yuzpe method and the copper IUD) and how often they typically recommend or prescribe each method: never, <10 times per year, about once a month, about once a week or several times per week. Since few providers reported that they recommend or provide any of the EC methods once a week or more, we analyzed the data according to whether or not these providers ever offer these methods in their regular practice.

### 2.2. Data analysis

Statistical analyses on a deidentified data set were conducted using StataSE 11 (College Station, TX). We calculated frequencies for providers' demographic and practice characteristics, and we tabulated the proportion of providers who have heard of and ever provide each EC method. Chi-square tests were used to determine whether knowledge and provision of EC methods varied by specialty and whether awareness and provision of the most effective methods (UPA and the copper IUD) were significantly different from that of LNG. Multivariate logistic regression models estimated adjusted odds ratios (aOR) and identified predictors of the eight dichotomous outcomes of interest

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