

Bleeding after use of the levonorgestrel regimen of EC: concordance between women's reports of their menstrual periods and an objective algorithm.

Contraception. 2007 Jan;75(1):32-6. Epub 2006 Oct 11.

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OBJECTIVE: To compare concordance between periods as recorded by women on daily diaries with those determined objectively by an algorithm used in an earlier study to assess bleeding patterns after taking the emergency contraceptive pill (ECP) regimen consisting of 1.5 mg levonorgestrel. **METHODS:** We asked 120 women who had been treated with the regimen to keep daily bleeding diaries for 9 weeks. We compared menstrual periods recorded on the diary cards and reported in follow-up interviews with those determined by an algorithm adapted from the World Health Organization (WHO). **RESULTS:** Altogether, 111 subjects contributed diary cards on which the algorithm could identify at least one period; a total of 261 periods were identified by the algorithm. In 87% of these periods, women recorded on the diary a start date that was the same as or only 1 day later, but in 8% their recorded start day was more than 7 days later. For the first period following use of the regimen, concordance was lower: 81% and 14%, respectively. **CONCLUSION:** We found generally good concordance between the starts of menstrual periods as determined by an algorithm adapted from the WHO and the date of the start of a period as reported by participants on diary cards. In our earlier study, we found that the earlier in the cycle a woman took 1.5 mg levonorgestrel, the earlier was the next period. Had we relied on women's recording of the first period on the diary card, we would not have reached that conclusion.

Population Effect of Increased Access to Emergency Contraceptive Pills: A Systematic Review.

Obstet Gynecol. 2007 Jan;109(1):181-188.

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OBJECTIVE: We systematically reviewed data on effects of increased access to emergency contraceptive pills on pregnancy rates and use of the pills. **DATA SOURCES:** We searched MEDLINE, POPLINE, EMBASE, and LILACS, and we consulted with experts. **METHODS OF STUDY SELECTION:** We included studies that compared the effect of different levels of access to emergency contraceptive pills on pregnancy rates, use of the pills, and other outcomes. **TABULATION, INTEGRATION, AND RESULTS:** Of the 717 articles identified, we selected 23 for review. The studies included randomized trials, cohort studies, and evaluations of community interventions. The quality of these studies varied. In all but one study, increased access to emergency contraceptive pills was associated with greater use. However, no study found an effect on pregnancy or abortion rates. **CONCLUSION:** Increased access to emergency contraceptive pills enhances use but has not been shown to reduce unintended pregnancy rates. Further research is needed to explain this finding and to define the best ways to use emergency contraception to produce a public health benefit.

Rapid activation of haemostasis after hormonal emergency contraception.**Thromb Haemost. 2007 Jan;97(1):15-20.**

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Hormonal emergency contraception (EC) is a well established contraceptive method, recommended to all women, although the effects on haemostasis are not fully evaluated. The aim of this study was to evaluate whether exposure to EC has effects on well established cardiovascular risk factors, and also to examine whether differences exist between two EC treatments. In a prospective randomized cross over design 11 women used two different EC methods, one with estrogen and levonorgestrel (EE-EC) and one with levonorgestrel only (LNG-EC). Plasma concentrations of haemostatic factors (APC resistance, antithrombin, fibrinogen, prothrombin fragment 1 + 2, free protein S, factor VII and PAI-1), sex-hormone-binding globulin (SHBG), the apolipoprotein (apo)B/apoA1 ratio and C-reactive protein (CRP) were followed frequently during the following 48 hours. A rapid haemostatic activation was induced with both treatments, although more pronounced with EE-EC. Already two hours after EC, the plasma concentrations of haemostatic parameters and SHBG were significantly different from baseline concentrations. An ETP-based APC-resistance method showed increased APC resistance with EE-EC and decreased APC resistance with LNG-EC. The ApoB/ApoA1 ratio was affected in a favourable direction with EE-EC. CRP increased slightly regardless of treatment. Even a very short exposure to exogenous sex hormones causes prompt effects on hepatic protein synthesis and the coagulation system. This must be taken into consideration whenever exogenous steroid hormones are administered, especially to individuals with a genetic predisposition to thrombosis or transiently disturbed haemostasis.

Conscientious objection: a pharmacist's right or professional negligence?

Am J Health Syst Pharm. 2007 Jan 15;64(2):139-41.

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Beyond access: acceptability, use and nonuse of emergency contraception among young women.

Am J Obstet Gynecol. 2007 Jan;196(1):29.e1-6; discussion 90.e1-5.

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OBJECTIVE: This study was undertaken to assess the acceptability of levonorgestrel emergency contraception (EC). **STUDY DESIGN:** We examined attitudes and use patterns among 1950 women in a randomized trial evaluating access to EC through advance provision, pharmacies, or clinics. **RESULTS:** Most women considered EC to be safe (92%) and effective (98%). Compared with women with clinic access, women with direct pharmacy access were no more likely to use EC within 24 hours (odds ratio [OR] = 1.65, 95% CI = 0.82-3.30) or to report it very convenient (OR = 1.41, 95% CI = 0.77-2.56). However, women with advance provisions were more likely to use EC promptly (OR = 2.43, 95% CI = 1.24-4.80) and report high convenience (OR = 4.25, 95% CI = 2.32-7.76). Advance provision increased use by all women, whereas pharmacy access increased use only among condom users. Inconvenience and fear of side effects were common reasons for nonuse. **CONCLUSION:** Women viewed EC favorably. Advance provision improved promptness and convenience of use overall, while pharmacy access benefited specific populations.

Trends in knowledge of emergency contraception among women in California, 1999-2004.**Womens Health Issues. 2007 Jan-Feb;17(1):22-8.**

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OBJECTIVE: To examine trends in knowledge of emergency contraception (EC) and determine whether disparities in knowledge have persisted over time. **STUDY DESIGN:** This study is based on 6 years of the California Women's Health Survey, a population-based telephone survey. We examine predictors of EC knowledge among 11,998 women age 18-44. **RESULTS:** Between 1999 and 2004, the percentage of women aware of EC increased from 40-57%. Despite this increase, disparities in EC knowledge based on women's age, race/ethnicity, and socioeconomic status persist. Foreign-born Hispanic women, women whose income falls below the poverty level, and women who did not complete high school reported the lowest levels of EC knowledge in 2004. **CONCLUSIONS:** Education efforts may increase overall knowledge of the method. However, efforts must tailor these messages to women who may be outside the reach of traditional media and remain unaware of EC.

Texas community pharmacists' willingness to participate in pharmacist-initiated emergency contraception.

J Am Pharm Assoc (2003). 2007 Jan-Feb;47(1):48-57.

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OBJECTIVES: To determine Texas community pharmacists' knowledge about and experience with emergency contraception (EC), their perceptions about and willingness to participate in pharmacist-initiated emergency contraception (PIEC), and whether their willingness is influenced by their background characteristics or experience with EC. **DESIGN:** Cross-sectional study. **SETTING:** Texas in November through December 2004. **PARTICIPANTS:** 300 community pharmacists. **INTERVENTIONS:** Mailed questionnaire consisting of 40 questions divided into three **SECTIONS:** experience with EC, perceptions about PIEC, and background information. **MAIN OUTCOME MEASURES:** Pharmacists' perceptions and behaviors regarding EC and PIEC, and their willingness to participate in PIEC. Bivariate analysis to assess background characteristics and experience with EC in relation to willingness to participate in PIEC; multiple regression to identify predictors of willingness to participate in PIEC. **RESULTS:** With a usable response rate of 51%, results indicate that most pharmacists (91.2%) had heard of EC, while 45.2% kept EC in stock. More than one half (57.8%) had dispensed EC, and 95.5% were aware that EC is most effective when taken within 72 hours. Some 27.4% were opposed to dispensing EC, primarily because of religious (86.1%) and moral (80.6%) beliefs. Most (57.7%) believed that there should be a minimum age (mean +/- SD, 17.25 +/- 1.93 years) for patients receiving EC. Less than one half (46.7%) had heard of PIEC. Although pharmacists agreed (3.42 +/- 1.38) that PIEC would enhance the role of community pharmacists, they were unwilling (2.71 +/- 1.54) to participate in PIEC. Significant predictors of willingness to participate in PIEC included background characteristics, experience with EC, as well as benefits and barriers associated with PIEC. A regression analysis indicated that these significant predictors accounted for 58.6% of the total variance in willingness to participate in PIEC. **CONCLUSION:** A majority of Texas community pharmacists were quite knowledgeable about and aware of EC, but fewer had actually dispensed EC. Most had not heard of PIEC before study participation, and their perceptions relating to PIEC were generally unfavorable. Potential barriers to PIEC outnumbered potential benefits for most pharmacists. Findings indicate that Texas community pharmacists were not willing to become involved in PIEC at the time of this study.

Does meloxicam increase the incidence of anovulation induced by single administration of levonorgestrel in emergency contraception? A pilot study.

Hum Reprod. 2007 Feb;22(2):434-9. Epub 2006 Sep 15.

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BACKGROUND: Levonorgestrel (LNG) consistently prevents follicular rupture only when it is given before the onset of the ovulatory stimulus. As locally synthesized prostaglandin (PG) plays a crucial role in follicular rupture and cyclooxygenase-2 (cox-2) catalyses the final step of PG synthesis, we reasoned that adding a cox-2 inhibitor to LNG would prevent follicular rupture even after the ovulatory process had been triggered by the gonadotrophin surge. **METHODS:** Forty-one women were divided into two groups. One was treated when the size of the leading follicle was 15-17 mm (n = 10) and the other when it was ≥ 18 mm (n = 31). Each woman contributed with one cycle treated with LNG 1.5 mg single dose plus placebo and another treated with LNG + meloxicam (Melox) 15 mg, in a randomized order. Serial blood sampling for the assay of LH and follicular monitoring by transvaginal ultrasound were performed before and after treatment. **RESULTS:** Follicular rupture failed to occur within the 5-day period that followed treatment in 50 and 70% of cycles treated with LNG + Placebo and LNG + Melox, respectively, in the 15-17 mm group (P = 0.15) and in 16 and 39% of cycles treated with LNG + Placebo and LNG + Melox, respectively, in the ≥ 18 mm group (P < 0.052). The overall proportion of cycles with no follicular rupture or ovulatory dysfunction increased significantly by the addition of Melox to LNG (66 versus 88%, P < 0.012; n = 41-matched pairs). **CONCLUSIONS:** The trend towards increased incidence of no follicular rupture when Melox was combined with LNG suggests that the addition of a cox-2 inhibitor has the potential to improve the contraceptive efficacy of LNG by a pre-fertilization effect.

Emergency contraception: evaluation of women's understanding of it, a requisite for the effectiveness of the treatment.

[Article in Spanish]

Aten Primaria. 2007 Feb;39(2):87-92.

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OBJECTIVE: To evaluate how much women who attend primary care consultations understand about the correct use of emergency ("morning after") contraception (EC), their information requirements and their views about free EC prescription. **DESIGN:** Cross-sectional study, using a questionnaire. **SETTING:** Les Corts Primary Care Centre, Barcelona, Spain. **PARTICIPANTS:** A total of 130 women aged 15 to 45 years old who attended primary care consultations in May and June, 2005, were included. One-hundred and twenty-four of them (95.4%) agreed to the questionnaire. **MAIN MEASUREMENTS:** We tested knowledge of EC, and we drew up a questionnaire to evaluate understanding. This had 4 multiple-choice questions, as well as socio-demographic data, contraception background, how they preferred to obtain EC, and their information requirements. **RESULTS:** We found a lack of knowledge about several aspects of EC use: in particular, 33% of the women thought that EC eliminated completely the risk of pregnancy. We only found differences for better knowledge of EC in women who had used it before (3.03; 95% CI, 2.29-3.77) versus those who had never used it (2.47; 95% CI, 1.54-3.4; P=.028. Free prescription of EC in health centres was approved of by 75.8%, while 83.1% said they needed more information. Their preferred method to obtain this information was by leaflet. **CONCLUSIONS:** Women who attend primary health care clinics have a need for information on EC. Their lack of knowledge could limit the effectiveness of treatment. A brief explanation and handing out a leaflet could solve this problem.

Emergency Contraception OTC: The Drug, The Conflict, The Decision.

Nurs Womens Health. 2007 Feb;11(1):24-8.

Walker-Jenkins A.

Acceptance and use of emergency contraception with standardized counseling intervention: results of a randomized controlled trial.

Contraception. 2007 Feb;75(2):119-25. Epub 2006 Oct 11.

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OBJECTIVE: The objective of this work was to evaluate the acceptance, use and recall of an optional advance prescription for emergency contraception (EC). **MATERIALS AND METHODS:** This study used as randomized controlled trial evaluating contraceptive counseling intervention with women aged 16-44 years who were at risk for unintended pregnancy (N=737). Intervention participants (n=365) received contraceptive counseling with optional advance EC prescription. Control women (n=372) received no contraceptive or EC counseling. Among intervention participants, initial acceptance and use of EC in first 2 months were evaluated. Among all participants, differences were evaluated between recall of EC discussion and use of EC. **RESULTS:** Among 365 intervention women, 336 received EC counseling and 51% of these 336 accepted advance EC prescription. At 2 months, among the women who had accepted EC, 6% had filled and used their prescription and 8% had filled but not used their prescription. At 12 months, intervention women were significantly more likely than controls to recall talking about EC (33% vs. 5%) and obtaining a prescription (38% vs. 6%), but there were no differences in the use of EC (6% vs. 6%). **CONCLUSION:** When the option is available for EC counseling, approximately half of women accepted advance prescription for EC. However, few women who received information and/or an advance prescription remembered discussing EC, filled the prescription or used EC over 12 months.

Effectiveness of levonorgestrel emergency contraception given before or after ovulation-a pilot study.

Contraception. 2007 Feb;75(2):112-8. Epub 2006 Oct 27.

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BACKGROUND: Although widely used, the mechanisms of action of the levonorgestrel emergency contraceptive pill (LNG ECP) are still unclear. There are increasing data to indicate that LNG is particularly effective as an ECP by interrupting follicular development and ovulation. An important outstanding question is whether it has any effect on fertilization or implantation. **METHOD:** Ninety-nine women participated; they were recruited at the time they presented with a request for emergency contraception. All women took LNG 1.5 mg in a single dose during the clinic consultation. A blood sample was taken immediately prior to ingestion of the ECP for estimation of serum LH, estradiol and progesterone levels to calculate the day of ovulation. The specimens were analyzed in a single batch. Based on these endocrine data, we estimated the timing of ovulation to be within a +/-24-h period with an accuracy of around 80%. Women were followed up 4-6 weeks later to ascertain pregnancy status. The effectiveness of ECP when taken before and after ovulation was determined. **RESULTS:** Three women became pregnant despite taking the ECP (pregnancy rate, 3.0%). All three women who became pregnant had unprotected intercourse between Days -1 and 0 and took the ECP on Day +2, based on endocrine data. Day 0 was taken as ovulation day. Among 17 women who had intercourse in the fertile period of the cycle and took the ECP after ovulation occurred (on Days +1 to +2), we could have expected three or four pregnancies; three were observed. Among 34 women who had intercourse on Days -5 to -2 of the fertile period and took ECP before or on the day of ovulation, four pregnancies could have been expected, but none were observed. We found major discrepancies between women's self-report of stage of the cycle and the dating calculation based on endocrine data. **CONCLUSION:** These data are supportive of the concept that the LNG ECP has little or no effect on postovulation events but is highly effective when taken before ovulation.

Levonorgestrel-only dosing strategies for emergency contraception.

Pharmacotherapy. 2007 Feb;27(2):278-84.

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The United States Food and Drug Administration-approved progestin-only dosing strategy for emergency contraception is levonorgestrel 0.75 mg taken as soon as possible within 72 hours of unprotected intercourse, with a second 0.75-mg dose taken 12 hours later. However, different dosing strategies have been studied and promoted by various organizations. The American College of Obstetricians and Gynecologists recommends a single dose of levonorgestrel 1.5 mg for emergency contraception as one option. As another option, they recommend two doses of levonorgestrel 0.75 mg may be effective when taken 12-24 hours apart. We performed a search of MEDLINE and International Pharmaceutical Abstracts from 1967-2006 to evaluate and describe the existing pharmacokinetic and patient outcome data regarding administration of levonorgestrel as a 1.5-mg single dose or two 0.75-mg doses taken 12 or 24 hours apart. Additional studies were identified from the bibliographies of the selected literature. Several pertinent articles were identified. All of the studies demonstrated that emergency contraception effectively prevented pregnancy. In addition, evidence supports the safety and efficacy of a single dose of levonorgestrel 1.5 mg for emergency contraception. Furthermore, when two doses of levonorgestrel 0.75 mg are administered, the second dose can confidently be taken 12-24 hours after the first without compromising efficacy. Understanding the evidence that supports the different emergency contraception dosing strategies is critical for clinicians, and especially pharmacists, who have interactive roles in dispensing emergency contraception.

Effect of regulatory changes on the frequency of emergency department visits to request prescriptions for emergency contraception.

J Obstet Gynaecol Can. 2007 Mar;29(3):217-8.

Murray H, Caudle J, Moore K.

Emergency contraception, myths and facts.**Obstet Gynecol Clin North Am. 2007 Mar;34(1):127-36, ix-x.**

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Emergency contraception has the potential to reduce the United States unintended pregnancy rate by half. This article discusses the evidence on the safety and efficacy of emergency contraception, its side effects, as well as its mechanisms of action. Emergency contraception availability presents many opportunities for enhanced contraceptive care, beyond the obvious lapse in condom use, and evidence is lacking for contraindications to this expanded role. This article concludes that clinicians caring for women of reproductive age should recognize the importance of ready access to this medication to help prevent unintended pregnancies.

Variation in availability of emergency contraception in pharmacies.**Contraception. 2007 Mar;75(3):214-7. Epub 2007 Jan 16.**

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OBJECTIVE: The availability of emergency contraception (EC) depends on pharmacy stocking practices and pharmacist willingness to dispense the medication. We aimed to describe the availability of EC in areas governed by different state policies regarding pharmacist behavior. **STUDY DESIGN:** A telephone survey was conducted between October 1 and December 31, 2005, of every pharmacy listed in the metropolitan areas of Atlanta, Philadelphia and Boston. We asked whether pharmacies could fill a prescription for EC within 24 h and, if not, why not. **RESULTS:** We interviewed pharmacists at 1085 pharmacies (response rate of 75%). Overall, 23% were unable to fill a prescription for EC within 24 h. The rate of being unable to fill was 35% in Atlanta, 23% in Philadelphia and 4% in Boston ($p < .001$). Refusal rates were low: 4% overall; 8% in Atlanta; 3% in Philadelphia and 0% in Boston. **CONCLUSIONS:** Variation in state policy predicted the availability of EC. The most common reason for not being able to fill a prescription within 24 h was not having the medication in stock.

Knowledge of and perceived access to emergency contraception at two urgent care clinics in California.

Contraception. 2007 Mar;75(3):209-13. Epub 2007 Jan 16.

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BACKGROUND: California allowed women access to emergency contraception (EC) without a physicians' prescription in 2002. **METHODS:** To assess knowledge of and perceived access to EC among California women outside of family planning settings, we administered a computerized survey to women, age 18-45 years, who could become pregnant, in the waiting areas of two urgent care clinics in San Francisco in 2005. **RESULTS:** Four hundred forty-six women were enrolled. Most women [87%; 95% confidence interval (95% CI), 83-89%] in this well-educated (48% had college degrees), ethnically diverse sample knew that a postcoital contraceptive exists. However, many women (32%; 95% CI, 28-37%) did not know EC is currently available in California. Only 49% of women knew that using EC will have no adverse effect on their future fertility and only 15% knew that EC will not cause a miscarriage or birth defects if used by a woman who is pregnant. Seven percent thought EC was not at all effective and 27% thought EC was somewhat or very unsafe. Eight percent had EC at home for future use. **CONCLUSIONS:** Functional knowledge of EC remains limited in California. Public education campaigns are needed to allow women to benefit from pharmacy direct access to EC.

Identifying barriers to emergency contraception use among young women from various sociocultural groups in British Columbia, Canada.

Perspect Sex Reprod Health. 2007 Mar;39(1):13-20.

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CONTEXT: Despite advances related to the provision of emergency contraception in Canada, particularly the granting of independent prescriptive authority to pharmacists in 2000, little is known about the ways in which women perceive potential barriers to using it. **METHODS:** In 2004, an ethnically diverse sample of 52 women living in Greater Vancouver participated in interviews that were analyzed for an assessment of women's knowledge, attitudes and experiences related to emergency contraception, with particular attention to the ways in which ethnicity affected their stories. **RESULTS:** Participants generally misperceived emergency contraception as an abortifacient, and often mistakenly thought that it has long-term effects on health and fertility. Knowledge gaps regarding reproductive physiology impeded clear understanding of when it is most effective. Participants also reported receiving subtle and sometimes overtly stigmatizing messages from providers when they sought emergency contraception. Asian and South Asian women were particularly concerned about negative interactions with providers; for example, they feared that female providers from their sociocultural community might recognize, chastise or gossip about them. Institutional policies (e.g., a Catholic hospital's refusal to provide the method), coupled with low awareness of pharmacists' prescriptive authority, also created barriers to use. **CONCLUSIONS:** Women's ability to benefit from emergency contraception is hampered by lack of knowledge and conservative cultural or social mores. Serious contextual and structural shifts are required before woman-centered approaches to provision of the method become the norm.

Emergency contraception: knowledge and attitudes of Turkish nursing and midwifery students.

Eur J Contracept Reprod Health Care. 2007 Mar;12(1):63-9.

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OBJECTIVES: To assess the knowledge and attitudes of emergency contraception (EC) among nursing and midwifery students of a university in the Eastern-Mediterranean region of Turkey. **METHODS:** The survey was conducted among 210 nursing and midwifery students. **RESULTS:** One hundred and twenty-five participants (59.5%) knew at least one method of EC. One hundred and fourteen participants (54.3%) had heard about emergency contraceptive pills (ECPs), but only 17 (8.1%) knew what they contained. Rates of hearing about ECPs were statistically higher in third and fourth classes than first and second classes, and in midwifery students than in nursing students ($P < 0.001$). In spite of their very unsatisfactory level of knowledge, 166 students (79.0%) thought that ECPs should be sold in pharmacies. **CONCLUSION:** The nursing and midwifery students we assessed have a very insufficient knowledge of EC. Probably therefore, many are prejudiced against it. They should be much better acquainted with this modality of contraception since, after graduation, they will play an important role in the dissemination of information about EC in the population.

Emergency contraception pill--controversies and use.**Med J Malaysia. 2007 Mar;62(1):90-2; quiz 93.**

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Emergency contraceptive pills (ECP) are effective, safe and cheap, with profound global health and economic benefits. Patient education and easy access to ECP will contribute immensely to avoiding unwanted pregnancies and unsafe abortions. Issues related to morality, its perceived status as an abortifacient and harmful behaviour should it be easily available, has limited the widespread use of ECP in many countries.

Misconception of emergency contraception among tertiary school students in Akwa Ibom State, South-south, Nigeria.

Niger J Clin Pract. 2007 Mar;10(1):30-4.

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OBJECTIVE: To assess the degree of awareness and use of emergency contraception among tertiary school students in Akwa Ibom State, Nigeria. **DESIGN:** A self-administered questionnaire survey. **SETTING:** The Akwa Ibom State Polytechnic, Ikot Osurua, located on the outskirts of Ikot Ekpene local government area between 1st April 2002 and 31st April 2002. **SUBJECTS:** 1,000 randomly selected female students of the Akwa Ibom State polytechnic, Ikot Osurua. **RESULTS:** The students were aged between 16 and 43 years. Five hundred and eighty-nine (68.5%) of the respondents had heard of products that could be used as emergency contraceptives. However, only 49 (5.7%) of the respondents had practised some form of emergency contraception, which was most commonly practised by those between 16 and 25 years (71.4%). Menstrogen (30.6%), gynaecosid (24.5%), and quinine (14.3%) were the most common medications used for emergency contraception. Patent medicine dealers (40.9%) and friends/course mates (29.7%) were the most common sources of knowledge about emergency contraception. **CONCLUSION:** This study shows that awareness and use of emergency contraception by our youths is low. Community enlightenment about emergency contraception using specifically designed programmes, the formation of reproductive health clubs in our tertiary institutions and training of peer group educators in all our communities are advocated. Patent medicine dealers in our communities should have basic training in modern contraceptive methods and periodic evaluation should be carried out to assess their knowledge and practice of emergency contraception.

Hormonal emergency contraception: a clinical primer.**S D Med. 2007 Mar;60(3):99-101, 103-5.****Erratum in:****S D Med. 2007 Apr;60(4):157. dosage error in text.**

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Unintended and teenage pregnancies are major public health concerns in the United States. Emergency contraception is used to prevent pregnancy after failure of a contraceptive method or after unprotected intercourse. Expanded use of emergency contraception has the potential to reduce unintended pregnancy and induced abortions, while reducing state and federal healthcare expenditures. The recent approval of Plan B as an over-the-counter medication for individuals over 18 years of age should improve access to this medication. However, there are still widespread misconceptions about the mechanisms and implications of emergency contraception. Expanded access to emergency contraception is associated with increased use, but not associated with decreased efficacy, increased sexual risk-taking behavior, or less consistent use of traditional birth control methods. This review is designed to provide clinicians with information regarding the use of emergency contraception for reproductive age patients. It includes a brief description of methods of use, mechanisms of action, and side effect profiles of the most commonly used methods of emergency contraception, levonorgestrel and the Yuzpe method.

Otc product: plan B emergency contraception.

J Am Pharm Assoc (2003). 2007 Mar-Apr;47(2):e2-3.

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Cerebral venous thrombosis associated with repeated use of emergency contraception.

Eur J Neurol. 2007 Apr;14(4):e5.

Horga A, Santamarina E, Quilez A, de Francisco J, Garcia-Martinez R, Alvarez-Sabin J.

Emergency contraception in the ED.

J Emerg Nurs. 2007 Apr;33(2):140-2.

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Advance provision of emergency contraception for pregnancy prevention (full review).**Cochrane Database Syst Rev. 2007 Apr 18;(2):CD005497.**

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BACKGROUND: Emergency contraception can prevent pregnancy when taken after unprotected intercourse. Obtaining emergency contraception within the recommended time frame is difficult for many women. Advance provision, in which women receive a supply of emergency contraception before unprotected sex, could circumvent some obstacles to timely use. **OBJECTIVES:** To summarize randomized controlled trials evaluating advance provision of emergency contraception to explore effects on pregnancy rates, sexually transmitted infections, and sexual and contraceptive behaviors. **SEARCH STRATEGY:** In August 2006, we searched CENTRAL, EMBASE, POPLINE, MEDLINE via PubMed, and a specialized emergency contraception article database. We also searched reference lists and contacted experts to identify additional published or unpublished trials. **SELECTION CRITERIA:** We included randomized controlled trials comparing advance provision and standard access, which was defined as any of the following: counseling which may or may not have included information about emergency contraception, or provision of emergency contraception on request at a clinic or pharmacy. **DATA COLLECTION AND ANALYSIS:** We evaluated all identified titles and abstracts found for potential inclusion. Two reviewers independently abstracted data and assessed study quality. We entered and analyzed data using RevMan 4.2.8. We calculated odds ratios with 95% confidence intervals for dichotomous data and weighted mean differences with 95% confidence intervals for continuous data. **MAIN RESULTS:** Eight randomized controlled trials met our criteria for inclusion, representing 6389 patients in the United States, China and India. Advance provision did not decrease pregnancy rates (OR 1.0; 95% CI: 0.78 to 1.29 in studies for which we included twelve month follow-up data; OR 0.91; 95% CI: 0.69 to 1.19 in studies for which we included six month follow-up data; OR 0.49; 95% CI: 0.09 to 2.74 in a study with three month follow up data), despite increased use (single use: OR 2.52; 95% CI 1.72 to 3.70; multiple use: OR 4.13; 95% CI 1.77 to 9.63) and faster use (weighted mean difference (WMD) -14.6 hours; 95% CI -16.77 to -12.4 hours). Advance provision did not lead to increased rates of sexually transmitted infections (OR 0.99; 95% CI 0.73 to 1.34), increased frequency of unprotected intercourse, nor changes in contraceptive methods. Women who received emergency contraception in advance were equally as likely to use condoms as other women. **AUTHORS' CONCLUSIONS:** Advance provision of emergency contraception did not reduce pregnancy rates when compared to conventional provision. Advance provision does not negatively impact sexual and reproductive health behaviors and outcomes. Women should have easy access to emergency contraception, because it can decrease the chance of pregnancy. However, the interventions tested thus far have not reduced overall pregnancy rates in the populations studied.

Need for emergency contraception in urgent care settings.**Contraception. 2007 Apr;75(4):285-8. Epub 2007 Jan 16.**

Schwarz EB, Gerbert B, Gonzales R.

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BACKGROUND: Emergency contraceptive (EC) pills are safe and effective in preventing pregnancy up to 5 days after unprotected sex. **OBJECTIVE:** This study was conducted to determine the proportion and characteristics of women seeking urgent care who might benefit from receiving EC. **METHODS:** We used a computerized survey to assess desire for pregnancy and frequency of sex without contraception among 360 fertile women aged 18 to 45 years, who were seeking urgent care at two clinics in San Francisco, CA. Medical records were abstracted to assess whether clinicians discussed contraception. **RESULTS:** At both clinics, 11% (95% confidence interval, 8-15%) of women seeking urgent care might have benefited from immediately using EC. Few (8%) women reported a personal objection to EC, but few (7%) women had used EC in the prior 6 months. Chart review showed no evidence that any participants discussed EC with a clinician during their visit. **CONCLUSIONS:** Many women presenting for urgent care might benefit from EC.

Regarding "knowledge, attitudes, and use of emergency contraception among rural western North Carolina women".

South Med J. 2007 Apr;100(4):412-3.

Comment on:

South Med J. 2006 Aug;99(8):806-10.

Clark RA, Madhere M, Serice H.

Study examines effects of advance access to emergency contraception.

JAMA. 2007 May 16;297(19):2067-8.

Hampton T.

Postovulatory effects of levonorgestrel in emergency contraception (LNG-EC).

Contraception. 2007 May;75(5):402. Epub 2007 Mar 9.

Comment on:

Contraception. 2007 May;75(5):401-2; author reply 402-3.

Croxatto H.

Postovulatory effects of levonorgestrel in emergency contraception.

Contraception. 2007 May;75(5):401-2; author reply 402-3. Epub 2007 Mar 2.

Comment in:

Contraception. 2007 May;75(5):402.

Comment on:

Contraception. 2006 Jan;73(1):107; author reply 108-9.

Valenzuela CY.

Effect of single administration of levonorgestrel on the menstrual cycle.**Contraception. 2007 May;75(5):372-7. Epub 2007 Mar 29**

Okewole IA, Arowojolu AO, Odusoga OL, Oloyede OA, Adeleye OA, Salu J, Dada OA. Department of Obstetrics and Gynaecology, Olabisi Onabanjo University Teaching Hospital, Sagamu, P.M.B. 2001, Sagamu, Ogun State, Nigeria. idrisokewole@yahoo.com

BACKGROUND: Levonorgestrel (LNG) 1.5 mg administered within 72 h of unprotected coitus is an established method of emergency contraception. Currently, there is some, although incomplete, knowledge about the mechanism of action. **METHODS:** We administered 1.5 mg LNG peri-ovulatory to determine the effects on serum gonadotrophins, estradiol and progesterone levels. Fourteen women were studied in a pretreatment and treatment cycle; eight women (Group A) took LNG 3 days before the expected day of ovulation, while 6 (Group B) took LNG a day before the expected day of ovulation. **RESULTS:** The women in Group A had a significant delay in their LH peak and onset of the next menses compared with their pretreatment cycles (26.4 vs. 39.1 days, $p < .05$). Those in Group B had no significant changes in the endocrine parameters but there was a significant shortening of the mean cycle length in comparison with their pretreatment cycles (25.1 vs. 20.2 days). **CONCLUSION:** Levonorgestrel 1.5 mg acts as an emergency contraception by delaying the LH surge and interfering with ovulation. It may also disrupt corpus luteum formation causing premature luteinization of unruptured follicles.

Study examines effects of advance access to emergency contraception.

JAMA. 2007 May 16;297(19):2067-8.

Hampton T.

Danazol-beta-cyclodextrin binary system: a potential application in emergency contraception by the oral route.

AAPS PharmSciTech. 2007 May 11;8(2):Article 35.

Jadhav GS, Vavia PR, Nandedkar TD.

Pharmaceutical Division, Mumbai University Institute of Chemical Technology, Matunga, Mumbai, India.

This study explored the potential of beta-cyclodextrin to improve the aqueous solubility and dissolution of danazol, investigated a simple and less expensive method for preparation of a danazol-beta-cyclodextrin binary system, and explored the potential application of a danazol-beta-cyclodextrin binary system as a single-dose emergency contraceptive. Phase solubility analysis indicated formation of a first-order soluble complex with stability constant 972.03 M^{-1} , while Job's plot affirmed 1:1 stoichiometry. The hyperchromic shift in the UV-Vis spectrum of danazol in the presence of beta-cyclodextrin indicated solubilization capability of beta-cyclodextrin for danazol. The extrinsic Cotton effect with a negative peak at 280.7 nm confirmed the inclusion of danazol in the asymmetric locus of beta-cyclodextrin. ^1H -nuclear magnetic resonance analysis suggested that the protons of the steroidal skeleton of danazol display favorable interactions with the beta-cyclodextrin cavity. The danazol-beta-cyclodextrin binary system was prepared by kneading, solution, freeze-drying, and milling methods. The extent of the enhancement of dissolution rate was found to be dependent on the preparation method. Dissolution studies showed a similar relative dissolution rate (2.85) of the danazol-beta-cyclodextrin binary system prepared by the freeze-drying and milling (in the presence of 13% moisture) methods. In a mouse model, the danazol-beta-cyclodextrin binary system at 51.2 mg/kg (equivalent to a 400-mg human dose) showed 100% inhibition of implantation when given postcoitally. Moreover, the danazol-beta-cyclodextrin binary system is safe up to 2000 mg/kg in the mouse (15.52 g/70 kg human) as a single oral dose. Thus, the danazol-beta-cyclodextrin binary system could serve as a new therapeutic application: an oral emergency contraceptive at a physiologically acceptable single dose.

Pharmacokinetics of a single oral dose of 1.5-mg levonorgestrel when administered as 750-mug tablets or as 30-mug minipills.

Fertil Steril. 2007 May 2; [Epub ahead of print]

Devoto L, Espinoza A, Muñoz A, Fuentes A, von Hertzen H.

Instituto de Investigaciones Materno Infantil and Departamento de Obstetricia y Ginecología, Universidad de Chile, Santiago, Chile.

We examined the pharmacokinetics of a single dose of 1.5 mg of levonorgestrel when administered orally in two different formulations: two tablets of 0.75 mg or 50 minipills of 30 mug of levonorgestrel. Bioavailability of levonorgestrel with minipills was comparable to that with levonorgestrel tablets. These findings suggest that levonorgestrel-containing minipills can be considered as an alternative to standard levonorgestrel tablets for use in emergency contraception.

Emergency contraception provision: a survey of Michigan physicians from five medical specialties.

J Womens Health (Larchmt). 2007 May;16(4):489-98.

Xu X, Vahratian A, Patel DA, McRee AL, Ransom SB.

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OBJECTIVE: Despite the controversy over expanding delivery options for emergency contraceptive pills (ECP), little is known about physicians' attitudes toward over-the-counter (OTC) provision of ECP, and prior research on physicians' practices often has focused on a single specialty. This study examined the attitudes and practices regarding advance provision and OTC status of ECP among physicians in five medical specialties likely to encounter patients in need of ECP. **METHODS:** A mail survey of a random sample of 850 Michigan physicians in family/general medicine, internal medicine, obstetrics/gynecology, pediatrics, and emergency medicine was conducted. Respondents' ECP-related attitudes and practices were assessed, and differences by physician characteristics were examined using chi-square tests and multivariable logistic regression analyses. **RESULTS:** Two hundred seventy-one physicians responded to the survey (response rate = 32%), with 42% of them favoring OTC provision of ECP and 40% opposing it. Half of respondents never routinely initiated discussions about ECP with their sexually active, female patients, and 77% of respondents did not routinely offer advance prescriptions. After adjusting for other factors, including medical specialty, older physicians ($>$ or $=50$ years) were significantly more likely than their younger counterparts to support OTC provision of ECP (OR = 2.9, 95% CI 1.7-4.9) or offer advance prescriptions (OR = 2.5, 95% CI 1.1-5.8). Physicians with a specialty in obstetrics/gynecology were 3.5 times (95% CI 1.3-9.8) as likely as physicians in family/general medicine to offer advance prescriptions for ECP, and female physicians were 2.5 (95% CI 1.05-6.0) times as likely as male physicians to offer advance prescriptions. Graduation from a medical school within the United States and practicing in a private practice were marginally associated with a lower likelihood of supporting OTC status of ECP (OR = 0.5, 95% CI: 0.2-1.0; and OR equals; 0.6, 95% CI 0.3-1.1, respectively). **CONCLUSIONS:** Certain physician characteristics were significantly associated with their ECP-related attitudes and practices. The majority of physicians surveyed in this study did not offer advance prescriptions for ECP, and few had initiated discussions on ECP with patients, which may pose critical barriers to patients' timely access.

Emergency contraception in Peru: shifting government and donor policies and influences.**Reprod Health Matters. 2007 May;15(29):139-48.**

Chavez S, Coe AB.

Executive Director, Centro de Promocion y Defensa de los Derechos Sexuales y Reproductivos, Lima, Peru.

Inclusion of emergency contraception in national family planning programmes is consistent with international agreements that countries should strive to ensure access to a wide range of contraceptive methods and promote voluntary, informed choice. Yet in 2005, USAID/Peru requested that its NGO grantees in Peru take a "neutral" position on emergency contraception in activities or materials that involve its funds. For many decades, donor countries have viewed conservative religious forces in low-income countries as an obstacle to expanding family planning programmes. Today, however, far-right organisations in the United States are having an unprecedented influence on US public policy, including in countries such as Peru. This article analyses shifts in USAID/Peru's policy on emergency contraception in Peru since 1992. In Peru today, there is widespread official and public support for making emergency contraception available. Given USAID's long support for family planning internationally and in Peru, the current policy appears to be the result of attacks by US far-right organisations carried out in synergy with sympathetic US public officials and anti-choice Peruvian allies.

Emergency contraception under attack in Latin America: response of the medical establishment and civil society.

Reprod Health Matters. 2007 May;15(29):130-8.

Faundes A, Tavara L, Brache V, Alvarez F.

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The concept that it is possible to prevent a pregnancy after coitus is not new, but has gained prominence over the last 10-15 years. It provides a second chance to women who do not want to get pregnant and who, voluntarily or not, have had unprotected intercourse. Emergency contraception has been under strong attack by the Catholic church and anti-choice organisations in Latin America, who claim that the interference with implantation of the fertilised ovum is equivalent to an early abortion. The accumulation of evidence, however, is that the mechanism of action of emergency contraception is to prevent ovulation and that it does not interfere with implantation. This has been ignored by the anti-choice movement. The pattern of opposition to emergency contraception has been the same all over the Latin America region. The medical establishment and civil society, including the International Consortium for Emergency Contraception, have played a key role in defending access to emergency contraception throughout the region. A positive consequence of the public opposition of the Catholic church is that the concept and the method have become better known, and emergency contraception has become widely used. The cases of Peru, Brazil and Chile are described as examples.

Emergency contraception.

S D Med. 2007 May;60(5):186-7.

Fisher A.

Moral disagreement and providing emergency contraception: a pluralistic alternative.

Am J Bioeth. 2007 Jun;7(6):35-6.

Comment on:

Am J Bioeth. 2007 Jun;7(6):8-14.

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Conscientious objection the morning after.

Am J Bioeth. 2007 Jun;7(6):32-4.

Comment on:

Am J Bioeth. 2007 Jun;7(6):8-14.

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Levonorgestrel pharmacokinetics in plasma and milk of lactating women who take 1.5 mg for emergency contraception.

Hum Reprod. 2007 Jun;22(6):1578-84. Epub 2007 Mar 2.

Gainer E, Massai R, Lillo S, Reyes V, Forcelledo ML, Caviedes R, Villarroel C, Bouyer J. Laboratoire HRA Pharma, Paris 75003, France. e.gainer@hra-pharma.com

BACKGROUND: Progestin-only methods are among the contraceptive options available for breastfeeding women, however the doses of progestin used in emergency contraception (EC) have not been evaluated in nursing mothers. We therefore investigated the pharmacokinetics of 1.5 mg levonorgestrel (LNG) in lactating women. **METHODS:** Twelve healthy exclusively breastfeeding volunteers received 1.5 mg LNG. Women refrained from nursing for 72 h after dosing and fed their infants with milk frozen beforehand. Serial blood and milk samples were collected for 120h and assayed for LNG and sex hormone binding globulin. **RESULTS:** LNG concentrations peaked in plasma and in milk 1-4 h and 2-4 h after dosing, respectively. Concentrations in milk (M) paralleled those in plasma (P) but were consistently lower (mean M:P ratio 0.28). Estimated infant exposure to LNG is 1.6 microg on the day of dosing (1 microg in the first 8 h), 0.3 microg on the second day and 0.2 microg on the third day. **CONCLUSIONS:** Nursing mothers may need EC. These results suggest that to limit infant exposure to the period of maximum LNG excretion in milk, mothers should discontinue nursing for at least 8 h, but not more than 24 h, after EC.

Conscientious objection and emergency contraception.**Am J Bioeth. 2007 Jun;7(6):8-14.**

Comment in:

Am J Bioeth. 2007 Jun;7(6):15-6. Am J Bioeth. 2007 Jun;7(6):16-7. Am J Bioeth. 2007 Jun;7(6):18-9. Am J Bioeth. 2007 Jun;7(6):19-20. Am J Bioeth. 2007 Jun;7(6):21-2. Am J Bioeth. 2007 Jun;7(6):23-4. Am J Bioeth. 2007 Jun;7(6):25-6. Am J Bioeth. 2007 Jun;7(6):27-8. Am J Bioeth. 2007 Jun;7(6):28-30. Am J Bioeth. 2007 Jun;7(6):30-2. Am J Bioeth. 2007 Jun;7(6):32-4. Am J Bioeth. 2007 Jun;7(6):35-6.

Card RF.

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This article argues that practitioners have a professional ethical obligation to dispense emergency contraception, even given conscientious objection to this treatment. This recent controversy affects all medical professionals, including physicians as well as pharmacists. This article begins by analyzing the option of referring the patient to another willing provider. Objecting professionals may conscientiously refuse because they consider emergency contraception to be equivalent to abortion or because they believe contraception itself is immoral. This article critically evaluates these reasons and concludes that they do not successfully support conscientious objection in this context. Contrary to the views of other thinkers, it is not possible to easily strike a respectful balance between the interests of objecting providers and patients in this case. As medical professionals, providers have an ethical duty to inform women of this option and provide emergency contraception when this treatment is requested.

Misinformation about emergency contraception.

Am J Health Syst Pharm. 2007 Jun 1;64(11):1136; author reply 1137, 1142.

Comment on:

Am J Health Syst Pharm. 2007 Feb 1;64(3):238, 241.

Hardman JL, Cowett AA.

Ectopic pregnancy following emergency contraception with ethinyloestradiol-levonorgestrel: a case report.

Eur J Contracept Reprod Health Care. 2007 Jun;12(2):184-6.

Matsushita H, Takayanagi T, Ikarashi H.

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BACKGROUND: Emergency contraception with ethinyloestradiol-levonorgestrel is effective, and ectopic pregnancy following its failure is rare. **CASE:** A 21-year-old nulligravid Japanese woman with regular menstrual periods took ethinyloestradiol-levonorgestrel pills for emergency contraception (EC) 36 and 48 hours after a coitus complicated by retention of the condom in the vagina. She started bleeding vaginally 24 days after that intercourse. As the bleeding continued for three weeks she consulted a gynaecologist. The pregnancy test was positive. Two weeks later she complained of lower abdominal pain, and transvaginal ultrasonography suggested a pelvic blood collection. At emergency surgery, she was found to have a left tubal pregnancy. **CONCLUSION:** Although ectopic pregnancy after failure of EC is rare, one should be alert to its possible occurrence.

Emergency contraception in Cuba with 10 mg of mifepristone.**Eur J Contracept Reprod Health Care. 2007 Jun;12(2):162-7.**

Esteve JL, Garcia R, Breto A, Llorente M.

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BACKGROUND: Mifepristone in a dose of 10 mg is an effective emergency contraceptive when administered up to 120 hours after unprotected coitus. **METHODS:** Between May 2003 and February 2005, we conducted in Cuba a single-arm trial to evaluate the effectiveness of 10 mg mifepristone for emergency contraception up to 6 days after unprotected coitus. A total of 635 women who requested emergency contraception after a single act of unprotected intercourse were included in the study. **RESULTS:** After treatment there were 7/635 (1.1%) pregnancies (95% CI 0.4-2.3%). Pregnancy that might have occurred was prevented in 88.0% of the cases (95% CI 77.1-95.1%). The most common side effects reported by participants were fatigue (10.7%), dizziness (6.1%) and nausea (4.9%); vomiting was only reported by 0.6%. In 38/635 (6.0%) women menstruation was delayed more than 7 days. **CONCLUSIONS:** Mifepristone 10 mg administered is an effective emergency contraceptive with an acceptable profile of side effects up to five days, but greater studies are necessary to verify its efficacy up to 6 days after unprotected intercourse.

Levonorgestrel pharmacokinetics in plasma and milk of lactating women who take 1.5 mg for emergency contraception.

Hum Reprod. 2007 Jun;22(6):1578-84. Epub 2007 Mar 2.

Gainer E, Massai R, Lillo S, Reyes V, Forcelledo ML, Caviedes R, Villarroel C, Bouyer J.

Laboratoire HRA Pharma, Paris 75003, France. e.gainer@hra-pharma.com

BACKGROUND: Progestin-only methods are among the contraceptive options available for breastfeeding women, however the doses of progestin used in emergency contraception (EC) have not been evaluated in nursing mothers. We therefore investigated the pharmacokinetics of 1.5 mg levonorgestrel (LNG) in lactating women. **METHODS:** Twelve healthy exclusively breastfeeding volunteers received 1.5 mg LNG. Women refrained from nursing for 72 h after dosing and fed their infants with milk frozen beforehand. Serial blood and milk samples were collected for 120 h and assayed for LNG and sex hormone binding globulin. **RESULTS:** LNG concentrations peaked in plasma and in milk 1-4 h and 2-4 h after dosing, respectively. Concentrations in milk (M) paralleled those in plasma (P) but were consistently lower (mean M:P ratio 0.28). Estimated infant exposure to LNG is 1.6 microg on the day of dosing (1 microg in the first 8 h), 0.3 microg on the second day and 0.2 microg on the third day. **CONCLUSIONS:** Nursing mothers may need EC. These results suggest that to limit infant exposure to the period of maximum LNG excretion in milk, mothers should discontinue nursing for at least 8 h, but not more than 24 h, after EC.

Awareness of emergency contraception among female college students in Chandigarh, India.

Indian J Med Sci. 2007 Jun;61(6):338-46.

Puri S, Bhatia V, Swami HM, Singh A, Sehgal A, Kaur AP.

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SUMMARY: Adolescents and young women are at the greatest risk of unintended pregnancy because they are unlikely to see a family planning provider before or immediately after the sexual activity. Therefore, preventing unintended pregnancy among them is the important concern. Sexually active young women are clients with special needs for contraception. They are eligible to use a variety of the available contraceptives. Introduction of emergency contraception (EC) in the recent past can help them avoid such unintended pregnancies. **OBJECTIVE:** To investigate the awareness of emergency contraception in female college students. **STUDY DESIGN:** Cross-sectional, questionnaire-based study. **MATERIALS AND METHODS:** This study was conducted among college-going undergraduate and graduate female students of Punjab University, Chandigarh. Systematic random sampling was used to select the respondents. **RESULTS:** Of the 1,017 college students included in the study, 507 (49.9%) knew about different contraceptive methods. Maximum awareness was regarding oral contraceptive pills (239, 47.1%). Only 74 (7.3%) had knowledge about emergency contraceptive pills (ECP). Of them, 10 (14.7%) students knew the correct time for use of ECP and the side effects of ECP were known to 48 (88.9%) respondents. **CONCLUSIONS:** Awareness about ECP was very low among female college students of Chandigarh, especially regarding correct timing of its use and its side effects. Appropriate awareness programs on EC are needed for them.

Hormonal emergency contraception: increasing awareness and access.

Indian J Med Sci. 2007 Jun;61(6):323-4.

Ball D.

Expanding access to emergency contraception.**Int J Gynaecol Obstet. 2007 Jun;97(3):235-7. Epub 2007 Apr 19.**

Westley E, von Hertzen H, Faundes A.

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Emergency contraception (EC) is safe and has the potential to prevent unwanted pregnancies. However, use remains low in most settings, due to a range of barriers to access. This paper reviews key issues related to EC and describes recommendations reached during the Women's Health Alliance pre-Congress workshop, held in advance of the FIGO 2006 World Congress. The working group concluded that national societies of obstetrics and gynecology can play an important role in increasing access to this unique contraceptive method.

An update on emergency contraception use in adolescents.**J Pediatr Nurs. 2007 Jun;22(3):186-95.**

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Changing circumstances regarding access to emergency contraception (EC) warrant nurses' review of its current status. Nurses have the potential to improve adolescents' awareness of and access to EC so that adolescents may prevent pregnancy. Research suggests that adolescents lack awareness of EC methods that prevent pregnancy following an unprotected act of intercourse. Many pregnancies occurring in adolescence could be prevented with appropriate EC use. Studies show that adolescents are capable of using EC correctly and safely, and that access to EC is not associated with increased rates of unprotected intercourse or with higher rates of pregnancy or sexually transmitted infections.

Can emergency contraception help to reduce teen pregnancy?

JAAPA. 2007 Jun;20(6):42-6.

Waller L, Bryson W.

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Moral disagreement and providing emergency contraception: a pluralistic alternative.

Am J Bioeth. 2007 Jun;7(6):35-6.

Comment on:

Am J Bioeth. 2007 Jun;7(6):8-14.

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Preventing pregnancy: a girls' issue. Seventeen-year-old Swedish boys' perceptions on abortion, reproduction and use of contraception.

Eur J Contracept Reprod Health Care. 2007 Jun;12(2):111-8.

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OBJECTIVE: To gain deeper understanding of how teenage males view abortion, adolescent fatherhood, sexual behavior, and use of contraception. **METHOD:** We conducted six focus-group interviews with 17-year-old boys (n = 40). The interviews were tape-recorded, transcribed verbatim, and analyzed using manifest content analysis. **RESULTS:** Adolescent fatherhood was considered to be a catastrophe and abortion a moral dilemma. Most participants agreed that the unrestricted right to decide on abortion rests upon the girl, but some were frustrated by not having any legal right to influence the decision. Contraceptive failure was viewed as common and mainly due to the influence of alcohol or in relation to unplanned sex. Boys perceived girls as having a greater responsibility in avoiding pregnancy, and they often put a blind trust in the girls' use of hormonal contraceptives or initiation of emergency contraception. Several groups had insufficient knowledge about fetal development and other aspects of reproduction. Many were unsatisfied with the sex education they had received at school, but still considered it to be an important counterweight to other sources of information concerning sex, such as pornography. **CONCLUSION:** Equal responsibility among boys and girls regarding reproductive issues is still a challenge, but nevertheless an important key to the prevention of unwanted pregnancies.

A survey of knowledge, attitudes and practice of emergency contraception among university students in Cameroon.

BMC Emerg Med. 2007 Jul 17;7:7.

Kongnyuy EJ, Ngassa P, Fomulu N, Wiysonge CS, Kouam L, Doh AS.

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BACKGROUND: Unsafe abortion is a major public health problem in low-and-middle income countries. Young and unmarried women constitute a high risk group for unsafe abortions. It has been estimated that widespread use of emergency contraception may significantly reduce the number of abortion-related morbidity and mortality. The purpose of this study was to evaluate the knowledge, attitudes and experiences on emergency contraceptive pills by the university students in Cameroon in order to develop and refine a national health programme for reducing unwanted pregnancies and their associated morbidity and mortality. **METHODS:** A convenient sample of 700 students of the University of Buea (Cameroon) was selected for the study. Data was collected by a self-administered, anonymous and pre-tested questionnaire. **RESULTS:** The response rate was 94.9% (664/700). General level of awareness of emergency contraceptive pills was 63.0% (418/664). However, knowledge of the general features of emergency contraceptive pills was low and misinformation was high among these students. Knowledge differed according to the source of information: informal source was associated with misinformation, while medical and informational sources were associated with better knowledge. Although the students generally had positive attitudes regarding emergency contraceptive pills, up to 65.0% (465/664) believed that emergency contraceptive pills were unsafe. Those with adequate knowledge generally showed favourable attitudes with regards to emergency contraceptive pills (Mann-Whitney U = 2592.5, p = 0.000). Forty-nine students (7.4%) had used emergency contraceptive pills themselves or had a partner who had used them. **CONCLUSION:** Awareness of emergency contraception pills by Cameroonian students is low and the method is still underused. Strategies to promote use of emergency contraception should be focused on spreading accurate information through medical and informational sources, which have been found to be reliable and associated with good knowledge on emergency contraceptive pills.

Is the faculty of family planning and reproductive health care guidance on emergency contraception being followed in general practice? An audit in the West Midlands, UK.

J Fam Plann Reprod Health Care. 2007 Jul;33(3):195-8.

Bannister L, Macve J, Pinkey B, Webberley H.

University of Birmingham Medical School, Birmingham, UK.

BACKGROUND AND METHODOLOGY: In 2003, the Faculty of Family Planning and Reproductive Health Care (FFPRHC) of the Royal College of Obstetricians and Gynaecologists published guidance on emergency contraception (EC). A literature search revealed no published work describing doctors' actions when prescribing EC. In order to assess the extent to which the FFPRHC Guidance is being followed in general practice, an audit of the medical notes of women requesting EC between January 2003 and December 2004 in six general practice surgeries located in the West Midlands, UK was conducted. From the medical notes, discussions between health care professionals and patients requesting EC regarding ongoing contraceptive needs, the risk of sexually transmitted infections (STIs) and the availability of the emergency intrauterine device (IUD) were recorded. **RESULTS:** A total of 718 emergency contraceptive pill consultations were analysed. The median age for presentation was 24 years. The 20-24 years age group accounted for the most consultations (30.9%). In 40% of consultations there was no evidence of future contraceptive needs having been discussed. Only 20 (2.8%) consultation notes contained evidence that STIs had been discussed. Chlamydia tests were undertaken in only 15/718 (1.7%) consultations. In only 10 (1.4%) of the consultations was the IUD discussed with the patient as an alternative form of EC. **DISCUSSION AND CONCLUSIONS:** This audit suggests that the FFPRHC Guidance on EC is not being followed in general practice, and therefore patients requesting EC may not be receiving the highest standard of care.

Effectiveness of levonorgestrel emergency contraception given before or after ovulation - a pilot study.

J Fam Plann Reprod Health Care. 2007 Jul;33(3):145.

Rowlands S.

Warwick Medical School, Warwick, Uk.

Talking straight about emergency contraception.

J Fam Plann Reprod Health Care. 2007 Jul;33(3):139-42.

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Women seeking emergency contraceptive pills by using the internet.**Obstet Gynecol. 2007 Jul;110(1):44-52.**

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OBJECTIVE: To assess barriers and attitudes related to emergency contraception access among women seeking emergency contraceptive pills by using the Internet. **METHODS:** We conducted quantitative surveys and qualitative interviews of 200 women seeking emergency contraceptive pills from The Emergency Contraceptive Website (<http://ec.princeton.edu>). Main outcome measures included barriers to and attitudes toward emergency contraception access. **RESULTS:** Participants were predominately white, college-educated, urban residents. Women most frequently cited structural barriers to obtaining emergency contraceptive pills, such as inconvenient office hours. Although women supported advanced prescription of emergency contraceptive pills, there was less enthusiasm for nonprescription access because of concerns that others (but not they) would engage in risky sexual behavior. Women valued the consultation with a health professional; 42% stated they would still speak with a clinician even if nonprescription access was available. **CONCLUSION:** The Internet as a resource for emergency contraception appears limited to women of high socioeconomic status in our sample. There is a need to address beliefs that increased access to emergency contraception promotes risky sexual behavior because current evidence refutes this concern. Clinicians should still be prepared to discuss emergency contraception with patients, despite the fact that emergency contraceptive pills are now available to most (but not all) women without a prescription.

Community pharmacists' opinions regarding emergency contraception: a survey in Rhode Island.

J Am Pharm Assoc (2003). 2007 Jul-Aug;47(4):504-7.

Orr KK, Kachur SG.

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Emergency contraception among Finnish adolescents: awareness, use and the effect of non-prescription status.

BMC Public Health. 2007 Aug 9;7(1):201 [Epub ahead of print]

Falah-Hassani K, Kosunen E, Shiri R, Rimpela A.

ABSTRACT: BACKGROUND: Adolescents need to be aware that there is a method of preventing pregnancy even after an unprotected intercourse. Limited information is available on the awareness of young adolescents and the effects of selling emergency contraception (EC) over-the-counter, and the findings are controversial. The aims of this study were to investigate awareness and use of EC among Finnish girls aged 12-18 years in 1999-2003, and to assess the effect of the 2002 non-prescription status on the use. **METHODS:** A self-administered questionnaire was sent to a population-based sample of 12-18-year-olds girls in 1999, 2001, and 2003. Response rate was 83% in 1999 (N=4,369), 79% in 2001 (N=4,024) and 77% in 2003 (N=3,728), altogether N=12,121. Logistic regression model was used to examine the association of unawareness and use of EC with socio-economic background and health behaviour. **RESULTS:** In 2001, nearly all 14-18-year-olds and a majority of 12-year-olds were aware of EC. Among 12-14-year-olds, a slight increase in awareness between 1999 and 2003 was observed but this was not related to non-prescription status. Health-compromising behavior (alcohol use, smoking), dating and having good school achievement were related to higher awareness of EC. Nine percent of 14-18-year-olds had used EC once and 1% three times or more. No statistically significant change in EC use was found after non-prescription status. EC use increased with increasing alcohol consumption, particularly at age 14. Smoking, dating, and poor school achievement were related to increased use as well as not living in nuclear family. A lower use was observed if living in rural area or father's education was high. Mother's education was not related to use. **CONCLUSIONS:** Adolescent girls were well aware of the existence of emergency contraception even before the non-prescription status. Over-the-counter selling did not increase the use.

Unintended Childbearing and Knowledge of Emergency Contraception in a Population-Based Survey of Postpartum Women.

Matern Child Health J. 2007 Aug 7; [Epub ahead of print]

Goldsmith KA, Kasehagen LJ, Rosenberg KD, Sandoval AP, Lapidus JA.

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OBJECTIVES: We examined the relationship between unintended childbearing and knowledge of emergency contraception. **METHODS:** The Oregon Pregnancy Risk Assessment Monitoring System (PRAMS) is a population-based survey of postpartum women. We analyzed data from the 2001 PRAMS survey using logistic regression to assess the relationship between unintended childbearing and emergency contraception while controlling for maternal characteristics such as age, race/ethnicity, education, marital status, family income, and insurance coverage before pregnancy. **RESULTS:** In 2001, 1,795 women completed the PRAMS survey (78.1% weighted response proportion). Of the women who completed the survey, 38.2% reported that their birth was unintended and 25.3% reported that they did not know about emergency contraception before pregnancy. Unintended childbearing was associated with a lack of knowledge of emergency contraception (OR 1.43, 95% CI 1.00, 2.05) after controlling for marital status and age. **CONCLUSIONS:** Women in Oregon who were not aware of emergency contraception before pregnancy were more likely to have had an unintended birth when their marital status and age were taken into account. Unintended birth was more likely among women who were young, unmarried, lower income, and uninsured. Given that emergency contraception is now available over-the-counter in the US to women who are 18 years of age or older, age- and culturally-appropriate public health messages should be developed to expand women's awareness of, dispel myths around, and encourage appropriate use of emergency contraception as a tool to help prevent unintended pregnancy and birth.

Effect of a single vaginal administration of levonorgestrel in Carraguard(R) gel on the ovulatory process: a potential candidate for "dual protection" emergency contraception.

Contraception. 2007 Aug;76(2):111-6. Epub 2007 Jun 13.

Brache V, Croxatto H, Sitruk-Ware R, Maguire R, Montero JC, Kumar N, Salvatierra AM, Tejada AS, Cochán L, Forcelledo ML, Lahteenmaki P, Alvarez F, Faundes A.

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OBJECTIVE: The study was conducted to evaluate the effect of Carraguard vaginal gel containing 0.75 mg of levonorgestrel (CARRA/LNG gel) administered in a single dose at different stages of follicle development over subsequent follicle rupture and hormonal levels. **METHOD:** Randomized, blinded, cross-over study comparing the effects of a single administration of CARRA/LNG gel or Carraguard (CARRA) gel. Twenty-four healthy women were enrolled in two centers. The gels were administered when the follicle had reached diameters of 12-14, 15-17 and ≥ 18 mm in eight women each. Volunteers were followed for one treatment, one washout cycle and a second treatment cycle. Follicle rupture or nonrupture was assessed by transvaginal ultrasound. Luteinizing hormone, estradiol and progesterone levels were measured daily for 5 days following treatment, and three times per week until menses. **RESULTS:** No follicular rupture within the 5-day period following administration was observed in 74% and 30% of the CARRA/LNG and CARRA gel treatment cycles, respectively, while ovulation was documented in 4% and 61%, respectively. The overall proportion of cycles with lack of follicular rupture or ovulatory dysfunction (follicle rupture preceded by an inadequate LH surge) was 96% for CARRA/LNG and 39% in the CARRA gel cycles. **CONCLUSION:** Single vaginal administration of 0.75 mg LNG in CARRA gel in the late follicular phase is effective for interfering with the ovulatory process.

In vivo assessment of the human sperm acrosome reaction and the expression of glycodeilin-A in human endometrium after levonorgestrel-emergency contraceptive pill administration.

Hum Reprod. 2007 Aug;22(8):2190-5. Epub 2007 May 30.

do Nascimento JA, Seppala M, Perdigao A, Espejo-Arce X, Munuce MJ, Hautala L, Koistinen R, Andrade L, Bahamondes L.

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BACKGROUND The objectives were firstly to assess acrosome reaction (AR) status of spermatozoa following uterine flushing, secondly to measure levonorgestrel (LNG) levels in serum and in uterine flushing fluid and finally to measure endometrial glycodeilin-A expression after administration of LNG as a form of emergency contraception (EC). **METHODS** Forty-eight experiments were conducted on 15 regularly menstruating women. Four groups were formed based on different intercourse to treatment interval and treatment to recovery of spermatozoa and the biopsies. **RESULTS** Twenty-four and forty-eight hours after treatment, there were $14.5 \pm 3.9 \times 10^6$ and $17.3 \pm 6.8 \times 10^6$ sperm recovered from the uterus, respectively. There were no differences between the AR rate and the endometrial glycodeilin-A staining intensity in an LNG or placebo treated cycles. The LNG in uterine flushing medium represented 1.38% of the values observed in serum 24 h after the LNG intake. **CONCLUSIONS** Twenty-four and forty-eight hours after administration of EC, neither the proportion of AR sperm, nor the glycodeilin-A level was influenced by 1.5 mg of LNG. LNG did not impair the cervical mucus either because viable spermatozoa were found in the genital tract 36-60 h after coitus and 24-48 h after LNG intake. The mechanism of action of LNG as EC remains unknown.

How does a Belgian health care provider deal with a request for emergency contraception?**Eur J Contracept Reprod Health Care. 2007 Aug 14;:1-9 [Epub ahead of print]**

Peremans L, Verhoeven V, Philips H, Denekens J, Van Royen P. Department of General Practice, University of Antwerp, Antwerp, Belgium.

Objective To evaluate how Belgian health care providers deal with a request for emergency contraception. **Method** In 2002-2003 we conducted 12 focus groups with pharmacists, general practitioners and school physicians. A skilled moderator accompanied by an observer conducted the focus groups using a semi-structured screenplay. **Results** All these health care providers agree with the free access to emergency contraception (EC), but experience considerable frustration with regard to the practical aspects and the legal framework. General practitioners (GPs) claim to spend a lot of time on requests for EC and they are concerned about the quality of the counselling provided in pharmacies. Pharmacists are creative when giving counselling in the pharmacy, but there is, nevertheless, a problem with a lack of privacy. School physicians are frustrated that there is no legal possibility to respond to a request for EC when they feel they are ideally placed to advise adolescents. **Conclusion** The over-the-counter sale of EC offers women better access, but many barriers still interfere with optimal care. Pharmacists experience a lack of skills to communicate with adolescents and a lack of privacy to give counselling. GPs have good intentions, but are confronted with a lack of willingness on the part of the patients and also financial barriers. School physicians want more possibilities to help adolescents.

Emergency contraception--lack of awareness among women presenting for termination of pregnancy.

S Afr Med J. 2007 Aug;97(8):584-5.

Moodley J, Morroni C.

When 'emergency contraception' is neither.

Am J Bioeth. 2007 Aug;7(8):W7.

Comment on: Am J Bioeth. 2007 Jun;7(6):8-14.

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Knowledge and use of emergency contraception among women in the Western Cape province of South Africa: a cross-sectional study.

BMC Womens Health. 2007 Sep 12;7:14.

Myer L, Mlobeli R, Cooper D, Smit J, Morroni C.

Infectious Diseases Epidemiology Unit, School of Public Health & Family Medicine, University of Cape Town, Cape Town, South Africa. landon.myer@uct.ac.za

BACKGROUND: Emergency contraception (EC) is widely available free of charge at public sector clinics in South Africa. At the same time, rates of teenage and unintended pregnancy in South Africa remain high, and there are few data on knowledge of EC in the general population in South Africa, as in other resource-limited settings. **METHODS:** We conducted a cross-sectional, interviewer-administered survey among 831 sexually active women at 26 randomly selected public sector clinics in the Western Cape province. **RESULTS:** Overall, 30% of the women had ever heard of EC when asked directly, after the method was described to them. Only 15% mentioned EC by name or description spontaneously. Knowledge of EC was independently associated with higher education, being married, and living in an urban setting. Four percent of women had ever used EC. **DISCUSSION:** These data suggest that knowledge of EC in this setting is more common among women of higher socioeconomic status living in urban areas. For EC to play a role in decreasing unintended pregnancy in South Africa, specific interventions are necessary to increase knowledge of the method, where to get it, and the appropriate time interval for its use before the need for EC arises. Future health promotion campaigns should target rural and low socioeconomic status communities.

Advance provision for emergency oral contraception.

Am Fam Physician. 2007 Sep 1;76(5):654.

Kripke C.

A single intrauterine injection of the serine protease inhibitor 4-(2-aminoethyl)benzenesulfonyl fluoride hydrochloride reversibly inhibits embryo implantation in mice.

Contraception. 2007 Sep;76(3):250-5. Epub 2007 Jul 5.

Sun ZG, Shi HJ, Gu Z, Wang J, Shen QX.

National Population and Family Planning Key Laboratory of Contraceptives and Devices, Shanghai Institute of Planned Parenthood Research, Shanghai 200032, China.

BACKGROUND: The study was conducted to investigate the inhibitory effect of 4-(2-aminoethyl)benzenesulfonyl fluoride hydrochloride (AEBSF) on embryo implantation in mice with a view to identifying whether it might be a suitable agent for postcoital contraception. **STUDY DESIGN:** The anti-implantation efficacy of AEBSF was determined by counting the number of visible implanted embryos on Day 8 of pregnancy following a single intrauterine injection of AEBSF at doses of 30, 300 and 3000 microg per mouse uterine horn on Day 3 of pregnancy. The reversibility of the inhibitory effect of AEBSF on implantation was further evaluated by observing the outcome of a subsequent pregnancy without AEBSF treatment. **RESULTS:** A dose-dependent inhibitory effect of AEBSF on embryo implantation in vivo was observed. Morphological analysis revealed no significant cytotoxicity of AEBSF on the mouse uterine epithelia. Furthermore, the anti-implantation effect of AEBSF was reversible. **CONCLUSION:** Intrauterine administration of AEBSF at an appropriate dose might provide a basis for the development of novel contraception.

Mechanism of emergency contraception with gestrinone: a preliminary investigation.**Contraception. 2007 Sep;76(3):221-7. Epub 2007 Jul 26.**

Gao X, Wu E, Chen G.

Department of Obstetrics and Gynecology, Peking University Third Hospital, Beijing 100083, China.

BACKGROUND: A previous investigation showed that among 120 healthy women treated with a single oral dose of gestrinone for emergency contraception (EC), there was only one pregnancy. The effect of a single oral dose of gestrinone given for EC on ovarian function and endometrial development was studied. **STUDY DESIGN:** Healthy fertile women were randomly assigned to Group A (n=8) or Group B (n=7). Gestrinone 5 mg was orally administered to each woman before (Group A) or after (Group B) ovulation. The day of ovulation was determined by transvaginal ultrasound and by urinary luteinizing hormone (LH) measured by enzyme immunoassay (One Step LH Ovulation Test). An endometrial biopsy was performed during implantation. Endometrial maturation and expression of markers of endometrial receptivity were analyzed. The tested markers were integrins alpha(1)beta(1), alpha(4)beta(1) and beta(3). Serum estradiol (E(2)) and progesterone (P) levels in serum were determined by radioimmunoassay, and estradiol receptors and progesterone receptors (PRs) in the endometrium were assessed by immunohistochemistry. **RESULTS:** Gestrinone administered during the periovulatory period did not affect follicular development, ovulation, menstrual cycle length and E(2) and P levels but decreased the expression of PR in the endometrium. Integrin alpha(4)beta(1) tended to increase after treatment with gestrinone without reaching statistical significance. **CONCLUSION:** The mode of action of gestrinone used for EC is probably inhibition of implantation by acting on the endometrium rather than inhibition of ovulation.

Levonorgestrel emergency contraception: a joint analysis of effectiveness and mechanism of action.

Fertil Steril. 2007 Sep;88(3):565-71. Epub 2007 Feb 22.

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OBJECTIVE: To model the effectiveness that can be obtained if levonorgestrel-only emergency contraception (EC) acts only through disrupting ovulation, in relation to other effects that may occur before or after fertilization and accounting for delays in administration. **DESIGN:** We modeled follicular growth as a function of follicular size, using known day-specific probabilities of conception and known disruption of ovulation by levonorgestrel-only EC, to estimate the expected effectiveness of EC. **SETTING:** Combined data from multiple clinical studies. **PATIENT(S):** Simulation models. **INTERVENTION(S):** Disruption of ovulation. **MAIN OUTCOME MEASURE(S):** Effectiveness in the form of proportion of pregnancies prevented. **RESULT(S):** With disruption of ovulation alone, the potential effectiveness of levonorgestrel EC ranged from 49% (no delay) to 8% (72-hour delay). With complete inhibition of fertilization before the day of ovulation, the potential effectiveness of levonorgestrel EC ranged from 90% (no delay) to 16% (72 hour delay). **CONCLUSION(S):** The gap between effectiveness of levonorgestrel EC estimated from clinical studies and what can be attributed to disruption of ovulation may be explained by overestimation of actual effectiveness and supplementary mechanisms of action, including post fertilization effects. Additional data with follicular ultrasound and precise measures of delay between intercourse and EC administration would yield greater insight into effectiveness and mechanisms of action.

Emergency contraception: does improved access reduce the pregnancy rate?

Gynecol Endocrinol. 2007 Sep;23(9):497-8.

Ho PC.

Knowledge, attitudes and practices in a group of pharmacists in Puerto Rico regarding emergency contraception.

P R Health Sci J. 2007 Sep;26(3):191-7.

Fuentes EC, Azize-Vargas Y.

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BACKGROUND: The recent FDA approval of non-prescription sales of Plan B, an emergency contraceptive method to those 18 years old and over, gives a prominent role to pharmacists in providing timely access to emergency contraception (EC). While this decision affects Puerto Rico, no studies on non-prescription EC in Puerto Rico have been conducted. The purpose of this study is to identify the knowledge, attitudes and practices of a group of pharmacists in Puerto Rico regarding emergency contraceptive pills. **METHODS:** A cross-sectional descriptive study of a group of pharmacists' knowledge, attitudes, and practices regarding EC was conducted among those who attended the annual convention of the College of Pharmacists of Puerto Rico on August 24-26, 2006. **RESULTS:** Slightly more than half of pharmacists surveyed (51.4%) supported a law that allows them to dispense EC without a prescription. Yet, overall EC knowledge was low given that the average number of knowledge questions answered correctly was 1.8 (SD+/-1.36) out of 6. Pharmacists who correctly answered knowledge questions about EC, whose pharmacy dispensed EC, and who felt comfortable giving information to a client about EC were significantly more likely to support the non-prescription EC law. **CONCLUSION:** Knowledge about EC was low among the pharmacists that were surveyed, but there was support for a non-prescription EC policy in Puerto Rico. Increased education efforts are needed in this important group of allied health professionals.

Characteristics associated with emergency contraception use by family planning patients: a prospective cohort study.

Perspect Sex Reprod Health. 2007 Sep;39(3):158-66.

Whittaker PG, Berger M, Armstrong KA, Felice TL, Adams J. Family Planning Council, Philadelphia, PA, USA. paulw@familyplanning.org

CONTEXT: Little is known about how written family planning clinic policy regarding emergency contraception, as well as personal characteristics, behaviors and attitudes, may influence a woman to use emergency contraception. **METHODS:** Between June 2001 and July 2002, women attending publicly funded family planning clinics in Pennsylvania were enrolled in an 18-month longitudinal study. Half attended clinics with a policy of offering emergency contraception in advance; the remainder had only emergent access to the drug. After providing baseline data, women completed monthly automated phone surveys about recent sexual activity, contraceptive use and attitudes toward pregnancy. Characteristics associated with recent use of emergency contraception were examined using multivariate logistic regression. **RESULTS:** Responses to 3,700 phone surveys from 729 women showed that 25% of those who attended clinics offering advance access used emergency contraception at least once during the study, compared with 8% who attended emergent access clinics. Women attending advance access clinics had significantly elevated odds of having used emergency contraception in the past month (odds ratio, 2.6). Other characteristics positively associated with the likelihood of recent emergency contraception use were familiarity with the drug, having a new sex partner and having unprotected sex at least once (2.0 each); negative feelings toward pregnancy (1.4); and using condoms as one's main contraceptive method (1.8). **CONCLUSIONS:** In addition to discussing and offering advance emergency contraception, providers should further explore specific behaviors and attitudes associated with emergency contraception use.

Characteristics associated with emergency contraception use by family planning patients: a prospective cohort study.

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CONTEXT: Little is known about how written family planning clinic policy regarding emergency contraception, as well as personal characteristics, behaviors and attitudes, may influence a woman to use emergency contraception. **METHODS:** Between June 2001 and July 2002, women attending publicly funded family planning clinics in Pennsylvania were enrolled in an 18-month longitudinal study. Half attended clinics with a policy of offering emergency contraception in advance; the remainder had only emergent access to the drug. After providing baseline data, women completed monthly automated phone surveys about recent sexual activity, contraceptive use and attitudes toward pregnancy. Characteristics associated with recent use of emergency contraception were examined using multivariate logistic regression. **RESULTS:** Responses to 3,700 phone surveys from 729 women showed that 25% of those who attended clinics offering advance access used emergency contraception at least once during the study, compared with 8% who attended emergent access clinics. Women attending advance access clinics had significantly elevated odds of having used emergency contraception in the past month (odds ratio, 2.6). Other characteristics positively associated with the likelihood of recent emergency contraception use were familiarity with the drug, having a new sex partner and having unprotected sex at least once (2.0 each); negative feelings toward pregnancy (1.4); and using condoms as one's main contraceptive method (1.8). **CONCLUSIONS:** In addition to discussing and offering advance emergency contraception, providers should further explore specific behaviors and attitudes associated with emergency contraception use.

**Response to commentators on "Conscientious objection and emergency contraception":
sex, drugs and the rocky role of levonorgestrel.**

Am J Bioeth. 2007 Oct;7(10):4-6.

Comment on:

Am J Bioeth. 2007 Jun;7(6):30-2.

Card RF.

Intrauterine pregnancy after salpingectomy for tubal pregnancy due to emergency contraception: a case report.

Clinics. 2007 Oct;62(5):641-2.

Cabar FR, Pereira PP, Zugaib M.

Review: advance provision of emergency contraception increases its use but does not reduce unplanned pregnancies.

Evid Based Nurs. 2007 Oct;10(4):106.

Comment on: Cochrane Database Syst Rev. 2007;(2):CD005497.

Quinn S.

Camden Primary Care Trust and Middlesex University, London, UK.

Pharmacokinetics of a single oral dose of 1.5-mg levonorgestrel when administered as 750-mug tablets or as 30-microg minipills.

Fertil Steril. 2007 Oct;88(4):976-7. Epub 2007 May 4.

Devoto L, Espinoza A, Muñoz A, Fuentes A, von Hertzen H. Instituto de Investigaciones Materno Infantil and Departamento de Obstetricia y Ginecologia, Universidad de Chile, Santiago, Chile. ldevoto@med.uchile.cl

We examined the pharmacokinetics of a single dose of 1.5 mg of levonorgestrel when administered orally in two different formulations: two tablets of 0.75 mg or 50 minipills of 30 microg of levonorgestrel. Bioavailability of levonorgestrel with minipills was comparable to that with levonorgestrel tablets. These findings suggest that levonorgestrel-containing minipills can be considered as an alternative to standard levonorgestrel tablets for use in emergency contraception.

[Contraception in French teenage girls in 2007]**[Article in French]****Gynecol Obstet Fertil. 2007 Oct;35(10):951-67. Epub 2007 Sep 12.**

Robin G, Massart P, Letombe B.

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The two main objectives of adolescence contraception are the eviction of involuntary pregnancies and the prevention of sexually transmitted infections. In France, in spite of our rich contraceptive arsenal and a widely spread information, the rate of voluntary termination of pregnancy keeps growing among the teenagers population--and this, probably because the gap between theoretical effectiveness and practice of contraception is particularly wide among the young people. Every contraceptive means can be used by teenagers; the best option being, it seems, the "double DUTCH", which consists of concomitant use of condoms and hormonal contraception. Most often, the consultation for contraception is the first gynaecological consultation. That is the reason why it is usually stressful for teenagers who dread undergoing a gynaecological examination. If this examination is not necessary for most of young patients, it is essential to create a trustful relationship and to make explicit the several contraceptive methods. During this consultation it is interesting to look for common teenage troubles like addiction to smoking and eating disorders. For any prescription of hormonal contraception, it is important to explain the benefits and the possible side effects, to stress the observance and to tell the teenager about the recommendations in case of forgetting. Concerning condom - the only efficient way of preventing sexually transmitted infections--, it is useful to talk about it in concrete and straightforward terms, to show its handling and to inform about risks of tearing. With this state of mind, an emergency contraception can be prescribed straightaway in order to make its use easier. Also, without any moralizing speech, the need for maturity must be emphasized as well as taking care of one's body with the aim of avoiding a premature pregnancy or any sexually transmitted infection. This consultation must be coupled with a close follow-up, availability and mutual confidence which are the main elements vouching for a good observance and consequently an efficient contraception.

Pharmacy access to emergency contraception in rural and frontier communities.**J Rural Health. 2007 Autumn;23(4):294-8.**

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CONTEXT: Timely access to emergency contraception (EC) has emerged as a major public health effort in the prevention of unintended pregnancies. The recent FDA decision to allow over-the-counter availability of emergency contraception for adult women presents important rural health implications. American women, especially those living in rural and frontier areas, have one of the highest rates of unintended and teen pregnancy among developed countries. **PURPOSE:** This study, conducted prior to the recent FDA ruling, evaluated the participation among California pharmacies in the pharmacy access program in December 2005, specifically comparing rural/frontier and urban pharmacies. **METHODS:** The sample consisted of 862 California pharmacies, including 50 in rural/frontier areas, which were randomly selected and surveyed by telephone. **FINDINGS:** The results indicated that similar proportions of rural/frontier pharmacies and urban pharmacies provided direct pharmacy access services (28% vs 22%, $P = 0.32$). However, of the 13 rural/frontier counties included in the survey, eight (62%) emergency contraception pharmacies. The rural/frontier pharmacies that provided emergency contraception services tended to be small, independent pharmacies in the most remote areas of the state. Among rural/frontier pharmacies that did not participate in the program, the primary reasons included lack of training or demand for emergency contraception. Only one rural/frontier pharmacist cited moral or religious opposition to providing emergency contraception. **CONCLUSIONS:** In light of the current limited over-the-counter status of emergency contraception, the role of rural and frontier pharmacies in ensuring access to emergency contraception will increase in the future.

Modelling costs and outcomes of expanded availability of emergency contraceptive use in British Columbia.

Can J Clin Pharmacol. 2007 Fall;14(3):e326-38. Epub 2007 Nov 30.

Soon JA, Meckley LM, Levine M, Marciante KD, Fielding DW, Ensom MH. Faculty of Pharmaceutical Sciences, University of British Columbia, Vancouver, BC, Canada. jason@interchange.ubc.ca

BACKGROUND: Emergency contraception (EC) can potentially reduce unwanted pregnancies and abortions. However, these agents are underused due to lack of awareness and barriers to utilization. While earlier economic evaluations have indicated that use of EC is potentially cost-effective, recent evidence of a lower risk of pregnancy following unprotected intercourse than previously reported suggest prior studies may have over-estimated cost savings. **OBJECTIVES:** To model cost savings and pregnancy-related outcomes associated with the policy change authorizing pharmacist provision of EC in British Columbia, and to estimate the costs of initiatives to further women's awareness and utilization of EC that would result. **METHODS:** Three decision analytic models were developed evaluating current EC utilization (physician-only), EC utilization following pharmacist provision and potential expanded EC awareness and utilization following a public awareness initiative. Models were developed from the Ministry of Health perspective for 2001 using cost and event data from the Ministry supplemented by data from the literature. **RESULTS:** Current EC utilization saved the Ministry \$2.20 million (95% CR: \$0.15 million, \$4.90 million) in medical costs the first year, and incremental savings from pharmacist provision was \$0.64 million (95% CR: \$0.24 million, \$1.28 million). A public awareness initiative costing less than \$2.57 million (95% CR: \$0.22 million, \$5.75 million) annually is potentially cost saving. **CONCLUSIONS:** Pharmacist provision of EC was cost saving to the Ministry, even when the estimated risk of pregnancy in the population is less than assumed in previous studies. Increasing EC availability directly from pharmacists and increasing EC awareness have the potential to reduce health care costs.

Emergency contraception knowledge after a community education campaign.**Contraception. 2007 Nov;76(5):366-71. Epub 2007 Sep 21.**

Gee RE, Delli-Bovi LC, Chuang CH.

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BACKGROUND: This study evaluates the effectiveness of a community education campaign in the Boston community of Jamaica Plain conducted by the Massachusetts Emergency Contraception (EC) Network aimed at improving public knowledge of EC. **STUDY DESIGN:** Pre- and postintervention surveys of reproductive-age women were conducted to evaluate the effectiveness of the community education campaign. Knowledge of EC was compared before and after the intervention using surveys of community-based samples of women. **RESULTS:** One hundred eighty-eight and 290 women participated in the preintervention and postintervention surveys, respectively. Following the intervention, women were significantly more likely to have heard of EC (91% vs. 82%, $p=.007$), know the mechanism of action of EC (49% vs. 39%, $p=.04$), have discussed EC with a health care provider (38% vs. 25%, $p=.003$) and have received an advance prescription for EC (22% vs. 12%, $p=.004$), as well as were more likely to use EC in the future if needed (79% vs. 63%, $p=.0002$). **CONCLUSION:** This grassroots-based community education campaign on EC was effective in improving EC knowledge in this Boston community.

Patients' emergency contraception comprehension, usage, and view of the emergency department role for emergency contraception.

J Emerg Med. 2007 Nov;33(4):367-75. Epub 2007 Jul 5.

Merchant RC, Casadei K, Gee EM, Bock BC, Becker BM, Clark MA.

Department of Emergency Medicine, Brown Medical School, Providence, Rhode Island, USA.

Female Emergency Department (ED) patients were surveyed to determine their comprehension of the concept of emergency contraception (EC), to assess how often they had used EC in comparison to other forms of contraception, and to learn which patients want the ED to provide EC services. Most of the 761 respondents were aged < 35 years (62.1%), never married (42.9%), had been pregnant at least once (70.2%), had never had an abortion (76.1%), had never used EC (90.6%), and had sex with a man within the past month (70.7%). Respondents were 2.5 times more likely to have had an abortion than to have used EC; 85.3% could not correctly answer two questions that assessed comprehension of the concept of EC; 43.1% wanted the ED to offer EC, 55.6% to provide information about EC, and 52.6% to refer patients for EC. Younger patients, those who attended religious services infrequently, patients who had ever used EC, and those at risk of pregnancy were more likely to want the ED to provide EC services.

Student pharmacist knowledge and attitudes regarding oral emergency contraception.**J Am Pharm Assoc (2003). 2007 Nov-Dec;47(6):711-6.**

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OBJECTIVES: To describe student pharmacist knowledge and attitudes regarding oral emergency contraceptives (OECs) and identify factors affecting student pharmacists' knowledge of and attitudes towards OECs. **DESIGN:** Cross-sectional survey. **SETTING:** United States, May through June 2006. **PARTICIPANTS:** Students enrolled in a U.S. school/college of pharmacy with an American Pharmacists Association Academy of Student Pharmacists chapter. **INTERVENTION:** 33-item electronic survey containing 9 questions evaluating knowledge, 16 questions assessing attitudes, and 8 questions requesting demographic information. **MAIN OUTCOME MEASURES:** Overall scores for the knowledge and attitudes sections were calculated for each student. Statistical analyses were then performed to determine the relationships between knowledge and attitude scores and the different demographic variables. **RESULTS:** 752 students participated in the survey. On the knowledge portion of the survey, respondents correctly answered a mean of 5.9 of 9 items. Factors affecting total knowledge scores included the student's academic year ($P < 0.0001$), previous participation in a course that covered contraception ($P < 0.0001$), and having covered OECs specifically in that course ($P = 0.039$). The average attitude score was 56.5 (range 20-80). The attitude scores of students with higher knowledge scores were more favorable toward OECs ($P = 0.05$). Political beliefs and religious affiliation also had a significant effect on total attitude scores ($P < 0.0001$ for both). **CONCLUSION:** Personal factors such as religious affiliation and political viewpoints play a considerable role in student pharmacist attitudes toward OECs. However, students who have more knowledge of OECs are more supportive of them and have fewer concerns about their use. Based on these data, inclusion of this topic in pharmacy school curricula is important in helping students to develop fully informed opinions regarding OECs.

Pharmacy access to emergency contraception: Perspectives of pharmacists at a chain pharmacy in San Francisco.

J Am Pharm Assoc (2003). 2007 Nov-Dec;47(6):702-10.

El-Ibiary SY, Raine T, McIntosh J, Darney PD, Harper CC.

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OBJECTIVE: To assess pharmacists' perception of their role in dispensing emergency contraception (EC) in San Francisco. **DESIGN:** Cross-sectional study. **SETTING:** Community chain pharmacies in San Francisco during summer 2002. **PARTICIPANTS:** 76 Walgreens community pharmacists. **INTERVENTIONS:** Self-administered survey mailed to all pharmacists (n = 122) working in all Walgreens units (n = 49) in San Francisco. **MAIN OUTCOME MEASURES:** Pharmacists' attitudes regarding EC provision. Variations in sociodemographic, training, and practice characteristics were tested using chi-square statistics for categorical variables and Student t test for continuous variables. **RESULTS:** 76 pharmacists (62%) responded to the survey (approximately 50% women and 74% Asian). Knowledge among the pharmacists was very high; most knew the timing of the first dose (95%), the adverse effect of nausea (99%), the effectiveness compared with oral hormonal contraception (92%), that EC offers no protection from sexually transmitted infections (99%), differences from medical abortion (100%), and that EC does not increase the risk of birth defects (100%). Most pharmacists (91%) reported that participation in a direct pharmacy-access program would make them feel more important in their pregnancy prevention role, and nearly all (99%) supported pharmacy-access legislation for EC. Knowledge and attitudes did not differ by highest degree earned, position, age, or sex. **CONCLUSION:** An assessment of pharmacist experiences in the San Francisco area showed high capability and support for an enhanced professional role regarding EC.

[Postcoital contraception or abortion? A longitudinal study of young women] [Article in Norwegian]

Tidsskr Nor Laegeforen. 2007 Dec 13;127(24):3206-8.

Pedersen W.

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BACKGROUND: The use of postcoital contraception or emergency contraception has increased in many countries. This has been linked to an expected reduction in the abortion rates, but so far there is no evidence of such an association. A possible explanation could be that women who are in the risk zone for abortion typically do not use emergency contraception. The aim of study was to investigate possible differences between the two groups. **MATERIAL AND METHODS:** 768 Norwegian women (a representative sample) were followed up from they were 15 to 27 years. Data were collected through surveys on; emergency contraception and induced abortion, sociodemographic characteristics, family relationships, and individual aspects previously reported to be associated with an increased risk of induced abortion (education level, conduct problems and depression). **RESULTS:** Women who use emergency prevention are recruited (more often than expected) from families with a high income (OR 2.0; 95 % CI 1.3 - 2.9), but otherwise have no characteristics that discriminate them from the rest of the population. Induced abortion was however associated with risk factors such as depression (OR 3.2; 95% CI 1.7 - 6.0) and deviant peer groups (OR 2.5; 95 % CI 1.3 - 4.8), and they rarely have education at a university- or college level (OR 0.2; 95 % CI 0.1 -0.7). **INTERPRETATION:** Emergency contraception appears to be used by others than those with typical risk factors for abortion. One should consider targeted preventive interventions to increase the use of emergency contraception in groups at-risk for induced abortion.

Emergency contraception for sexual assault victims in North Carolina emergency departments.

N C Med J. 2007 Nov-Dec;68(6):399-403.

Woodell AT, Bowling JM, Moracco KE, Reed ML. NARAL Pro-Choice North Carolina, USA. awoodell@ProChoiceNorthCarolina.org

INTRODUCTION: One in 5 women is a victim of sexual assault. This study examines the administration of emergency contraception to victims of sexual assault in North Carolina hospital emergency departments. **METHODS:** One hundred seventeen surveys were mailed to hospital emergency departments across the state to determine their emergency contraception practices for victims of sexual assault. The survey contained 11 questions about emergency contraception practices for victims. **RESULTS:** Of the 117 surveys, 103 were returned revealing that just over 50% of the hospitals in North Carolina treated victims with emergency contraception without exception. Both dispensing emergency contraception and providing information about emergency contraception were significantly associated with having a sexual assault nurse examiner program. **CONCLUSION:** Results from this study demonstrate inconsistent provision of emergency contraception to victims of sexual assault; however, there is greater consistency of emergency contraception use by emergency departments using sexual assault nurse examiners.

Emergency contraception.

Aust Fam Physician.

2007 Dec;36(12):982.

Hobbs M, Taft A, Amir LH.

Emergency contraception: a clinical review.**Clin Obstet Gynecol. 2007 Dec;50(4):927-36.**

Allen RH, Goldberg AB.

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Emergency contraception is defined as a drug or device used to prevent pregnancy after unprotected sexual intercourse (including sexual assault) or after a recognized contraceptive failure. In the United States, 1.5 mg of levonorgestrel, packaged as Plan B, and the Copper T 380A intrauterine device are the most common emergency contraceptives available to women and are effective up to 5 days after unprotected sexual intercourse. In August 2006, Plan B was approved for over-the-counter sale to women aged 18 and older in the United States. It is not yet known whether the increased availability of emergency contraception will decrease unintended pregnancy and induced abortion rates.

Jamaican and Barbadian health care providers' knowledge, attitudes and practices regarding emergency contraceptive pills.

Int Fam Plan Perspect. 2007 Dec;33(4):160-7.

Yam EA, Gordon-Strachan G, McIntyre G, Fletcher H, Garcia SG, Becker D, Ezcurra E. Abt Associates Inc., Bethesda, MD, USA. eileen_yam@abtassoc.com

CONTEXT: Little is known about health care providers' knowledge of, attitudes toward and provision of emergency contraceptive pills in the English-speaking Caribbean, where sexual violence and unplanned pregnancies are persistent public health problems. **METHODS:** We conducted interviewer-administered surveys of 200 Barbadian and 228 Jamaican pharmacists, general practitioners, obstetrician-gynecologists and nurses in 2005-2006. For each country, Pearson's chi-square tests were used to assess differences in responses among the four provider groups. **RESULTS:** Nearly all respondents had heard of emergency contraceptive pills, and large majorities of Barbadian and Jamaican providers had dispensed the method. However, about half had ever refused to dispense it; frequently cited reasons were medical contraindications to use, recent use, method unavailability, safety concerns and being uncomfortable prescribing it. Only one in five providers knew that the method could be safely used as often as needed, and few knew that it was effective if taken within 120 hours of unprotected sexual intercourse. About a quarter of Barbadian and half of Jamaican providers thought the method should be available without a prescription, and half of all providers believed that its use encourages sexual risk-taking and leads to increased STI transmission. Nonetheless, most respondents believed the method was necessary to reduce rates of unintended pregnancy and were willing to dispense it to rape victims, women who had experienced condom failure and women who had not used a contraceptive. **CONCLUSIONS:** Future educational efforts among Jamaican and Barbadian health care providers should emphasize the safety and proper use of emergency contraceptive pills, as well as the need to increase the availability of the method.

Nurs Womens Health. 2007 Dec;11(6):546-56.

Adolescents and contraception: the nurse's role as counselor.

Fuller JM. Allegany County Department of Health, Reproductive Health Services, Belmont, NY, USA.

Harm reduction or women's rights? Debating access to emergency contraceptive pills in Canada and the United States.

Stud Fam Plann. 2007 Dec;38(4):253-67.

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This article compares the ethical pivot points in debates over nonprescription access to emergency contraceptive pills in Canada and the United States. These include women's right to be informed about the contraceptive method and its mechanism of action, pharmacists' conscientious objection concerning the dispensing of emergency contraceptive pills, and rights and equality of access to the method, especially for poor women and minorities. In both countries, arguments in support of expanding access to the pills were shaped by two competing orientations toward health and sexuality. The first, "harm reduction," promotes emergency contraception as attenuating the public health risks entailed in sex. The second orientation regards access to pills as a question of women's right to engage in nonprocreative sex and to choose from among all reproductive health-care options. The authors contend that arguments for expanding access to emergency contraceptive pills that frame issues in terms of health and science are insufficient bases for drug regulation; ultimately, women's health is also a matter of women's rights.

Advance provision of emergency contraception for pregnancy prevention: a meta-analysis.**Obstet Gynecol. 2007 Dec;110(6):1379-88.**

Polis CB, Schaffer K, Blanchard K, Glasier A, Harper CC, Grimes DA.

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OBJECTIVE: Advance provision of emergency contraception can circumvent some obstacles to timely use. We performed a meta-analysis to summarize randomized controlled trials evaluating advance provision of emergency contraception to explore effects on pregnancy rates, sexually transmitted infections, and sexual and contraceptive behaviors. **DATA SOURCES:** In August 2006, we searched CENTRAL, EMBASE, POPLINE, MEDLINE, a specialized emergency contraception article database, and contacted experts to identify published or unpublished trials. **METHODS OF STUDY SELECTION:** We included randomized controlled trials comparing advance provision to standard access, defined as any of the following: counseling (with or without information about emergency contraception) or provision of emergency contraception on request at a clinic or pharmacy. **TABULATION, INTEGRATION AND RESULTS:** Two reviewers independently assessed study quality. We performed a meta-analysis using Review Manager software. Eight randomized controlled trials met inclusion criteria, representing 6,389 patients in the United States, China, and India. Advance provision did not decrease pregnancy rates, despite increased use (single use, odds ratio [OR] 2.52, 95% confidence interval [CI] 1.72-3.70; multiple use: OR 4.13, 95% CI 1.77-9.63) and faster use (weighted mean difference -14.6 hours, 95% CI -16.77 to -12.4 hours). Advance provision did not increase rates of sexually transmitted infections (OR 0.99, 95% CI 0.73-1.34), unprotected intercourse, or changes in contraceptive methods. Women who received emergency contraception in advance were as likely to use condoms as other women. **CONCLUSION:** Advance provision of emergency contraception did not reduce pregnancy rates and did not negatively affect sexual and reproductive health behaviors and outcomes compared with conventional provision. **LEVEL OF EVIDENCE:** III.

Emergency contraception: a reasonable personal choice or a destructive societal influence?**Clin Pharmacol Ther. 2008 Jan;83(1):17-9.**

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A 2003 petition to the US Food and Drug Administration by the manufacturer to move levonorgestrel emergency contraception from prescription status to over-the-counter sale embroiled the Agency in politics and remains controversial in some circles. This essay addresses the current remaining main points of controversy about the medication and the Agency's decision.

Emergency contraception update: a Canadian perspective.**Clin Pharmacol Ther. 2008 Jan;83(1):177-80. Epub 2007 Nov 28.**

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Barriers to hormonal emergency contraceptive (EC) access in Canada and the United States led professional and lay groups to lobby for levonorgestrel (LNG) (PLAN B, Barr Pharmaceuticals, Pomona, New York) to be made available over-the-counter. In December 2000, British Columbia, Canada, granted EC prescriptive authority to pharmacists, followed by Quebec in December 2001 and Saskatchewan in September 2003. In April 2005, Health Canada placed LNG on non-prescription, behind-the-pharmacy-counter status with no age restriction. After much controversy, in August 2006, the Food and Drug Administration (FDA) approved over-the-counter access to LNG by adults in the United States. Results of our experience in Canada and recent information regarding mechanisms of action, effectiveness, adverse effects, and the effect of increased availability on reproductive health outcomes are presented here to help inform clinical practice.

Emergency contraception: overestimated effectiveness and questionable expectations.

Clin Pharmacol Ther. 2008 Jan;83(1):19-21.

Stanford JB.

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Physicians' intention to educate about emergency contraception.**Fam Med. 2008 Jan;40(1):40-5.**

Kelly PJ, Sable MR, Schwartz LR, Lisbon E, Hall MA.

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BACKGROUND AND OBJECTIVES: Our objective was to examine the intention of academic primary care physicians to educate women about emergency contraception (EC) and whether differences in their intention varies with patient situation, knowledge and attitudes about EC, gender, or specialty. **METHODS:** As part of a larger cross-sectional survey about intention to prescribe EC with 96 faculty physicians from one Southern and three Midwestern universities, we analyzed factors associated with intention to educate patients about EC. Physicians were from departments of family medicine, obstetrics-gynecology, and pediatrics. **RESULTS:** The main outcome variable was intention to educate about EC. Attitudes and perceived peer expectations on educating about EC predicted physicians' intentions to provide EC education to their patients. Neither knowledge about EC nor physician demographics predicted intention to educate. Almost one in five respondents were reluctant to provide education to sexually active adolescents. Physicians who had high intention to educate were more likely than others to believe that educating about EC enhances a woman's reproductive options and that EC education reduces unintended pregnancy and abortion. Providers with low intention to educate were more likely to consider EC education to be inconvenient and to take too much clinic time. **CONCLUSIONS:** To maximize training programs, physicians' attitudes, beliefs, and professional expectations should be examined when designing and initiating educational interventions.

Emergency contraception: Profiles of women using Plan B in a small Midwestern U.S. community.

J Am Acad Nurse Pract. 2008 Jan;20(1):35-9.

Ahonen KA, Buchman D.

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Purpose: The purpose of this study was to describe (a) a population of emergency contraceptive (EC) users, (b) frequency of use of EC in a calendar year, and (c) frequency of follow-up visits to establish routine contraception. **Data sources:** Retrospective chart review of 436 women aged 12-50 years visiting a Midwestern family planning clinic for EC services during 2004-2005. **Conclusions:** Users were primarily Caucasian (94.2%), single or single with a significant other (95.1%), young (68.1% aged 19 and under), and nulligravidas (89.4%). Few (10.4%) returned for repeat use of EC within the same calendar year. One third returned for a follow-up visit to establish routine contraceptive use. No significant differences in the occurrence of a follow-up visit were found among age, income, or education groups. **Implications for practice:** The youth of the sample underscores the need for providers to discuss EC with adolescents, who continue to need a prescription to access EC. The low repeat use of EC is consistent with international data and supports the use of EC as a back-up method for routine, ongoing contraceptive users. It is important for nurse practitioners to provide accurate information and access to EC, proactively, as part of ongoing health and wellness education to all reproductive-aged women.

Ethical, religious and factual beliefs about the supply of emergency hormonal contraception by UK community pharmacists.

J Fam Plann Reprod Health Care. 2008 Jan;34(1):47-50.

Cooper RJ, Bissell P, Wingfield J. Division of Social Research in Medicines and Health, The School of Pharmacy, University of Nottingham, Nottingham, UK. richard.cooper@nottingham.ac.uk

BACKGROUND AND METHODOLOGY: Community pharmacists' role in the sale and supply of emergency hormonal contraception (EHC) represents an opportunity to increase EHC availability and utilise pharmacists' expertise but little is known about pharmacists' attendant ethical concerns. Semi-structured qualitative interviews were undertaken with 23 UK pharmacists to explore their views and ethical concerns about EHC. **RESULTS:** Dispensing EHC was ethically acceptable for almost all pharmacists but beliefs about selling EHC revealed three categories: pharmacists who sold EHC, respected women's autonomy and peers' conscientious objection but feared the consequences of limited EHC availability; contingently selling pharmacists who believed doctors should be first choice for EHC supply but who occasionally supplied and were influenced by women's ages, affluence and genuineness; non-selling pharmacists who believed EHC was abortion and who found selling EHC distressing and ethically problematic. Terminological/factual misunderstandings about EHC were common and discussing ethical issues was difficult for most pharmacists. Religion informed non-selling pharmacists' ethical decisions but other pharmacists prioritised professional responsibilities over their religion. **DISCUSSION AND CONCLUSIONS:** Pharmacists' ethical views on EHC and the influence of religion varied and, together with some pharmacists' reliance upon non-clinical factors, led to a potentially variable supply, which may threaten the prompt availability of EHC. Misunderstandings about EHC perpetuated lay beliefs and potentially threatened correct advice. The influence of subordination and non-selling pharmacists' dispensing EHC may also lead to variable supply and confusion amongst women. Training is needed to address both factual/terminological misunderstandings about EHC and to develop pharmacists' ethical understanding and responsibility.

Direction générale de la santé.

Rev Prat. 2008 Jan 15;58(1):68.

[Emergency contraception]

[Article in French]

[Emergency contraception]**Rev Prat. 2008 Jan 15;58(1):50-3.**

[Article in French]

Aubény E. Association Française pour la Contraception, cabinet médical, 37 bis rue Ponthieu, 75008 Paris. aubeny@orange.fr

Emergency contraception is indicated when no birth control is used or in case of contraception failure. To day, two methods of emergency contraception are available. The hormonal method consists in taking a tablet of levonorgestrel 1.5 mg (NorLevo), as soon as possible following the contraceptive failure since its efficiency decreases rapidly as time goes by. No contraindication is associated with this contraceptive; however, it cannot be used as a regular contraception method since it is not 100% efficient (from 95.5 to 89% according to the authors). Apparently, this contraceptive acts by delaying ovulation. Mechanical contraceptives, such as intra-uterine devices, are extremely efficient (99.5%) and can be used up to 5 days after the estimated ovulation date. However, surveys conducted by the Inserm have revealed that in France, women are not aware of or lack of knowledge about emergency contraception and have many misconceptions. Moreover, many of them do not use emergency contraception since they do not feel concerned by the risk of pregnancy following contraception failure.

Study Shows Need to Dispel Myth That Availability of Emergency Contraception Promotes High-risk Behaviors.

J Midwifery Womens Health. 2008 Jan-Feb;53(1):95.

Bond S.

[Knowledge and attitudes about using emergency contraceptives among young college students]

Rev Med Inst Mex Seguro Soc. 2008 Jan-Feb;46(1):33-41.

[Article in Spanish]

Tapia-Curiel A, Villaseñor-Farias M, Nuño-Gutiérrez BL. Centro Universitario de Ciencias de la Salud, Universidad de Guadalajara, Unidad de Investigación Epidemiológica y en Servicios de Salud del Adolescente, Instituto Mexicano del Seguro Social, Guadalajara, Jalisco. **OBJECTIVE:** to identify the knowledge and attitudes regarding the use of emergency contraceptives (the day-after pill) with a gender viewpoint, among young college students affiliated to Instituto Mexicano del Seguro Social. **METHOD:** a cross-sectional survey was applied to 583 freshmen college students at the Health Sciences University Center of the University of Guadalajara. The quantitative probe included: knowledge about emergency contraceptives (EC) and attitudes concerning the use of EC. The qualitative probe included reasons for taking or not taking EC. **RESULTS:** 95 % of the population had heard about EC, and 80 % considered it as a useful contraceptive method. The knowledge about the correct use of EC as well as its acceptance was greater in men than in women. Women proved to be more reflexive when mentioning a number of reasons to justify the need for further information about EC. The reasons not to take EC were linked to moral criteria aspects. Men were more knowledgeable and more prone to using it. **CONCLUSIONS:** the knowledge and attitudes concerning the use of EC were different among men and women. Almost all had heard about EC, half of them knew how to use it correctly and 25% showed unfavorable attitudes about taking it due to ethical and moral concerns.

Attitudes and beliefs about emergency contraception among patients at academic family medicine clinics.

Ann Fam Med. 2008 Jan-Feb;6 Suppl 1:S23-7.

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PURPOSE: The possible mechanisms of action of emergency contraception (EC) include preventing ovulation, fertilization, or implantation of an embryo. Differences in the use of terminology between medical personnel and the general public could be misleading to patients who would use EC. This cross-sectional survey evaluated women's beliefs regarding pregnancy and EC's possible mechanisms of actions. **METHODS:** An anonymous questionnaire was developed and pilot tested for an appropriate reading level and ease of analysis. It collected information on demographics and beliefs about pregnancy and EC. During an 8-week period, the questionnaire was given to a convenience sample of female patients aged 18 to 50 years visiting 2 academic family medicine clinics in the southeastern United States. Descriptive statistics and logistic regression models were used for analysis. **RESULTS:** A total of 178 women completed questionnaires. Nearly one-half (47%) of respondents believed that pregnancy begins with fertilization; however, less than one-third (30%) believed that life begins with fertilization. Thirty-eight percent of respondents stated that they would use EC only if they believed it worked before fertilization or implantation. Generally similar proportions thought that EC works before fertilization (24%) and before implantation (36%), or were unsure about when it works (34%). Younger age was associated with higher odds of believing that EC works before fertilization; none of the other demographic factors studied conferred either higher or lower odds. **CONCLUSIONS:** Many women are uninformed about the possible mechanisms of action of EC, and we found no reliable predictors for those who were better informed. This study raises questions regarding women's understanding of EC and demonstrates the need to better educate them about its possible mechanisms of action.

College students' perceptions of emergency contraception provision.**J Womens Health (Larchmt). 2008 Jan-Feb;17(1):103-11.**

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BACKGROUND AND OBJECTIVE: The authors examined college students' perceptions regarding emergency contraception (EC) provision in light of the then pending U.S. Food and Drug Administration (FDA) decision about the over-the-counter (OTC) status of EC. **METHODS:** We randomly sampled 7000 male and female students who were enrolled full-time at the University of Michigan during the winter 2006 semester. A total of 1585 (22.6%) students responded to our web-based survey and were included in these descriptive analyses. **RESULTS:** Nearly all (94%) respondents knew of EC. When asked whether EC should be made available OTC, 60% of respondents agreed, 23% disagreed, and 17% were unsure. If EC were to be made available OTC, 34% of respondents indicated that they (or their partner) would purchase EC in advance of need, and 44% stated that they would purchase it only after unprotected sexual intercourse or contraceptive failure. Advance discussion and provision of EC is underused. Only 10% of all female respondents indicated that their current healthcare provider had spoken to them about EC in a routine health visit, and just 5% of female respondents were offered a supply of EC in advance of need. **CONCLUSIONS:** Continued efforts are needed to ensure timely access to EC in this population.

Advance provision of emergency contraceptive pills reduces treatment delay: a randomised controlled trial among Swedish teenage girls.

Acta Obstet Gynecol Scand. 2008;87(3):354-9.

Ekstrand M, Larsson M, Darj E, TydÅ©n T. Department of Women's and Children's Health, Uppsala University, Uppsala, Sweden. maria.ekstrand@kbh.uu.se

OBJECTIVE: To evaluate an intervention involving advance provision of emergency contraceptive pills (ECP) to Swedish teenage girls. **MATERIAL AND METHODS:** Some 420 girls aged 15-19, requesting ECP at a local youth clinic were randomly assigned to intervention group (IG) (n=214) or control group (CG) (n=206). Both groups received ECP on request. The IG received one extra dose of ECP, condoms and an information leaflet regarding ECP and condom use. Main outcome measures were differences between IG and CG regarding ECP use, time span between unprotected intercourse and ECP intake, contraceptive use, and sexual risk taking. Questionnaires were completed at the initial visit, and the girls were followed up by structured telephone interviews 3 and 6 months later. **RESULTS:** At the 3-month follow-up, girls in the IG were almost twice as likely to have used ECP compared to girls in the CG (IG: 24.0%, CG: 13%, p=0.02), and they used it sooner after unprotected intercourse (mean time IG: 13.61 h, CG: 25.47 h, p=0.007). Significant differences persisted 6 months after the intervention (ECP use IG: 31%, CG: 19%, p=0.01; and mean time IG: 15.59 h, CG: 26.38 h, p=0.006). No significant differences were found in the use of regular hormonal contraceptives or condoms at either follow-up. About 40% of the girls in both groups had risked pregnancy during the follow-up period, but only half of these had used ECP. **CONCLUSIONS:** This intervention shortened the time interval from unprotected intercourse to pill intake without jeopardising contraceptive use and without increasing sexual risk taking.

Emergency contraception: why the absent effect on abortion rates?

Acta Obstet Gynecol Scand. 2008;87(2):132-3.

Comment in: Acta Obstet Gynecol Scand. 2008;87(3):258-9.

Pedersen W.

[Emergency contraception knowledge among students in Medical University of Plovdiv]

Akush Ginekol (Sofia). 2008;47(4):23-7.

[Article in Bulgarian]

Pekhlivanov B, Malinova M, Dimitrakova E.

OBJECTIVE: The purpose of this study was to evaluate the knowledge on emergency contraception (EC) by the students in Medical University of Plovdiv. **METHODS:** This is a cross-sectional study. Data was collected from 200 students from University of Plovdiv (Bulgaria) by a self-administered, anonymous questionnaire. **RESULTS:** One-hundred seventy-seven (85.5%) of participants respond that they are aware about EC as a method for preventing unwanted pregnancy after unprotected sexual intercourse. The main source for information is public media. Women are more informed than men; there is no difference in knowledge in the beginning and at the end of the study. A big part of the students have used EC. **CONCLUSIONS:** Students from Medical University are well informed about EC which is due mainly to media. In order to improve awareness and knowledge on the matter changes in teaching process are needed and also spreading of accurate information through medical and informational sources.

Emergency contraception: when and how to use it.

J Fam Pract. 2008 Feb;57(2 Suppl Emergency):S25-36.

Sanfilippo J, Downing D. Department of Obstetrics, Gynecology, and Reproductive Sciences, University of Pittsburgh School of Medicine, Pittsburgh, Pennsylvania, USA.

Feasibility of recruitment for an efficacy trial of emergency contraceptive pills.**Contraception. 2008 Feb;77(2):118-21. Epub 2007 Dec 21.**

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BACKGROUND: The efficacy of emergency contraceptive pills (ECPs) is currently uncertain. The best way to obtain a robust efficacy estimate would be to conduct a placebo-controlled randomized trial. We aimed to assess the feasibility of identifying women eligible for such a trial. **STUDY DESIGN:** We conducted a survey of women aged 18-35 years in five sexually transmitted disease clinics and urgent care centers in Kenya and the United States in 2006. **RESULTS:** Of 177 women surveyed, only 10 (6%) reported no reasons for exclusion from a potential efficacy trial. Of the rest, 149 (83%) had not recently had sex that conferred a substantial risk of pregnancy. At all sites combined, the rate of identification of potentially eligible women was 0.6 per day of interviewing. **CONCLUSION:** A placebo-controlled efficacy trial of ECPs would likely require several thousand participants. Recruitment for such a trial in these types of sites would be prolonged.

Availability of emergency contraception after its deregulation from prescription-only status: a survey of Ontario pharmacies.

CMAJ. 2008 Feb 12;178(4):423-4.

Dunn S, Brown TE, Alldred J.

In 2005 the emergency contraception formulation of levonorgestrel (Plan B) became available in Ontario pharmacies without a prescription. We surveyed 239 pharmacies 1 month before the regulatory change and 14-17 months after the change to determine whether availability of the drug increased. The response rates were 79% and 70% before and after the change in status. The proportion of pharmacies that had an in-stock supply of Plan B increased from 78% to 92% ($p < 0.001$). After the regulatory change, 87% of the surveyed pharmacies (95% confidence interval 82%-92%) reported that they had the drug in stock and were willing to dispense it behind the counter. Availability was similar for urban and rural pharmacies, but rural pharmacies had more restricted hours (e.g., 15% closed on weekends). Thus, as a result of the regulatory change, emergency contraception is more widely available, but access in rural areas is still limited by restricted pharmacy hours.

Provision of emergency contraception: a pilot study comparing access through pharmacies and clinical settings.

Contraception. 2008 Mar;77(3):181-5. Epub 2008 Jan 30.

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OBJECTIVE: The study was conducted to compare the provision of emergency hormonal contraception (EHC) through pharmacies and clinical services to determine whether aspects of client satisfaction and subsequent sexual health outcomes vary significantly between these services. **STUDY DESIGN:** A pilot observational study was conducted in South London. Participants were recruited from pharmacies and clinical services when they presented requesting EHC and met with the researcher to complete a structured questionnaire 4 months later. **RESULTS:** One hundred thirty-three women were enrolled in the study, 50 of whom accessed a community pharmacy for EHC plus 83 women who obtained EHC from a clinical service. Seventy percent of women who went to a pharmacy and 43.9% who went to a clinical service obtained EHC within 24 h ($p=.004$). A greater proportion of women attending a clinical service felt at least quite comfortable asking for EHC, compared to those who went to a pharmacy ($p=.007$). Those who obtained EHC from a clinic also felt significantly better informed about both EHC ($p=.015$) and their future contraceptive options ($p=.000$), compared to the women who attended a pharmacy. **CONCLUSIONS:** This pilot study found that women who went to a pharmacy had more rapid access to EHC compared to those who chose to attend a clinical service. Other aspects of provision and client satisfaction seem to favor attendance at a clinical setting over a pharmacy as a venue for obtaining EHC.

Emergency contraception: a review.**Eur J Contracept Reprod Health Care. 2008 Mar;13(1):9-16.**

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Emergency contraception (EC), also known as 'the morning after pill', or post-coital contraception, is a modality of preventing the establishment of a pregnancy after unprotected intercourse. Both a hormonal and an intrauterine form are available. Modern hormonal EC, with low side effects, was first proposed by Yuzpe in 1974. More recently, a new regimen, consisting of levonorgestrel administered alone, was introduced and found in clinical trials to be more effective (if taken as early as possible), and associated with less side effects than the Yuzpe regimen, which it has gradually replaced. The WHO developed another regimen based on the use of the selective progesterone receptor modulator (antiprogestin) mifepristone and conducted trials with different dosages. Intrauterine EC was first proposed by Lippes in 1976. It has the advantage of being applicable for almost a week and the disadvantage of a greater complexity. In addition, this modality is solely interceptive, acting by preventing implantation. Pregnancy rates reported following EC using an intrauterine device with more than 300 mm² of copper are consistently low (0.1-0.2%).

Emergency contraception knowledge, attitudes, practices, and barriers among providers at a military treatment facility.

Mil Med. 2008 Mar;173(3):305-12.

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The safety and efficacy of postcoital administration of oral contraceptives, commonly called "emergency contraception pills" (ECPs), have been well documented; nonetheless, this method of preventing pregnancy is underused in the United States. Through the use of surveys, the current study assessed providers' knowledge, prescribing practices, attitudes, and barriers regarding ECPs at a military treatment facility in the southwest United States. Results showed a lack of knowledge of ECP provision, with 34% believing treatment had to be initiated in 48 or fewer hours, and 60% believing two doses must be taken within 24 hours or more of each other. Slightly more than one-half (54.4%) of the providers reported having prescribed an ECP; those who had prescribed had more positive attitudes about ECPs. Perceived barriers included women not asking for ECPs, concerns about safety of ECPs, and issues regarding liability. A discrepancy between providers' perceived and actual knowledge about ECPs supports the need for better education for all providers who care for women.

Interventions for emergency contraception.

Cochrane Database Syst Rev. 2008 Apr 16;(2):CD001324.

Comment in: ACP J Club. 2008 Nov-Dec;149(4):9.

Update of: chrane Database Syst Rev. 2004;(3):CD001324.

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BACKGROUND: Emergency contraception is using a drug or copper intrauterine device (Cu-IUD) to prevent pregnancy shortly after unprotected intercourse. Several interventions are available for emergency contraception. Information on the comparative efficacy, safety and convenience of these methods is crucial for reproductive health care providers and the women they serve. **OBJECTIVES:** To determine which emergency contraceptive method following unprotected intercourse is the most effective, safe and convenient to prevent pregnancy. **SEARCH STRATEGY:** The search included the Cochrane Controlled Trials Register, Popline, MEDLINE, PubMed, Biosis/Embase, Chinese biomedical databases and UNDP/UNFPA/WHO/World Bank Special Programme on Human Reproduction (HRP) emergency contraception database (December 2006). Content experts and pharmaceutical companies were contacted. **SELECTION CRITERIA:** Randomised controlled trials and controlled clinical trials including women attending services for emergency contraception following a single act of unprotected intercourse were eligible. **DATA COLLECTION AND ANALYSIS:** Data on outcomes and trial characteristics were extracted in duplicate and independently by two reviewers. Quality assessment was also done by two reviewers independently. Meta-analysis results are expressed as relative risk (RR) using a fixed-effects model with 95% confidence interval (CI). In the presence of statistically significant heterogeneity a random-effect model was applied. **MAIN RESULTS:** Eighty-one trials with 45,842 women were included. Most trials were conducted in China (70/81). There were more pregnancies with levonorgestrel compared to mid-dose (25-50 mg) (15 trials, RR: 2.01; 95% CI: 1.27 to 3.17) or low-dose mifepristone (<25 mg) (9 trials, RR: 1.43; 95% CI: 1.02 to 2.01). Low-dose mifepristone was less effective than mid-dose (20 trials, RR: 0.67; 95% CI: 0.49 to 0.92), but this effect was no longer statistically significant when only high quality trials were considered (6 trials, RR: 0.75; 95% CI: 0.50 to 1.10). Single dose levonorgestrel (1.5 mg) administration seemed to have similar effectiveness as the standard 12 hours apart split-dose (0.75 mg twice) (2 trials, 3830 women; RR: 0.77, 95% CI: 0.45 to 1.30). Levonorgestrel was more effective than the Yuzpe regimen in preventing pregnancy (2 trials, RR: 0.51; 95% CI: 0.31 to 0.83). CDB-2914 (a second-generation progesterone receptor modulator) may be as effective as levonorgestrel (1 trial, 1549 women; RR: 1.89; 95% CI: 0.75 to 4.64) but the confidence interval is wide and the result compatible with higher or lower effectiveness. Delay in the onset of subsequent menses was the main unwanted effect of mifepristone and seemed to be dose-related. **AUTHORS' CONCLUSIONS:** Mifepristone middle dose (25-50 mg) was superior to other hormonal regimens. Mifepristone low dose (<25 mg) could be more effective than levonorgestrel 0.75 mg (two doses) but this was not conclusive. Levonorgestrel proved more effective than the Yuzpe regimen. The copper IUD was another effective emergency contraceptive that can provide ongoing contraception.

Over-the-counter access to emergency contraception for teens.**Contraception. 2008 Apr;77(4):230-3. Epub 2008 Mar 4.**

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This synopsis of teens and OTC access is part of a series of briefs on emergency contraception, which address the following issues as they relate to EC: Is emergency contraception safe? Is emergency contraception effective at preventing pregnancy? Does emergency contraception promote sexual risk-taking? Is emergency contraception cost-effective? Does emergency contraception cause abortion? The full series can be found at <http://crrp.ucsf.edu>.

Awareness of emergency contraception: a follow-up report.**J Fam Plann Reprod Health Care. 2008 Apr;34(2):111-3.**

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BACKGROUND AND METHODOLOGY: This study aimed to ascertain whether recent campaigns aimed at increasing awareness and use of progestogen-only emergency contraception (POEC) have been effective, by comparing the understanding and awareness of POEC in those attending the termination of pregnancy (TOP) clinic in 2006 to an earlier cohort studied in 2003. Questionnaires were handed to all women attending the TOP clinic during a 4-week period in September/October 2006. Questionnaires were collected before women left the clinic.

RESULTS: All women (n= 77) attending the clinic received questionnaires; 72 were returned. Most (96%) of the women were familiar with POEC, compared with 78% of the 2003 cohort. 79% of the women felt confident about the ease of availability of POEC compared to 60% in 2003. More (51%) had used POEC in the past compared with 37% of the 2003 group. Only 46% knew the correct time limit for effectiveness of POEC compared to 59% in 2003. Time limit awareness was lower among the 16-20-year-old age group compared to the 21-25-year-old group. Most respondents (89%) said that they would consider using POEC in the future.

DISCUSSION AND CONCLUSIONS: Awareness and use of POEC have improved since 2003 but accurate knowledge has not. There is confusion regarding the correct time limit for effectiveness of POEC, especially amongst the 16-20-year-old age group. Public awareness campaigns appear to have been effective in increasing awareness and availability of POEC in Fife, Scotland. More emphasis is needed on the appropriate and effective use of POEC, especially targeted to the 16-20-year-old age group.

The varied circumstances prompting requests for emergency contraception at school-based clinics.

J Sch Health. 2008 May;78(5):258-63.

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BACKGROUND: Little is known about the circumstances that prompt teenagers to request emergency contraception (EC). This evaluation was designed to refine the EC clinical protocol and improve pregnancy prevention efforts in high school-based clinics by analyzing information on EC use and subsequent contraception use of EC patients. **METHODS:** Sites included 5 clinics located at mainstream, racially diverse, and urban high schools. Nursing staff documented all EC-related visits during the 2002-2003 school year on a standardized form. These forms and additional information were collected from chart reviews. **RESULTS:** EC was requested in 113 instances involving 91 students and dispensed in all but 4 instances. The most frequently reported circumstance prompting an EC request was the use of no protection (37.2%), followed by a condom mishap (27.4%) and questionable protection from a hormonal method (23.9%). Anxiety despite adequate protection from a hormonal method (9.7%) or a condom (1.8%) accounted for the remaining cases. Although the clinical protocol included a follow-up appointment 2 weeks after receipt of EC, 39.5% of EC users failed to keep this appointment. The chart review revealed that hormonal contraception was eventually initiated following two thirds (68.0%) of the EC instances that involved either no protection or only a condom. **CONCLUSIONS:** Because young EC seekers vary considerably in terms of sexual experience, contraceptive use consistency, and pregnancy risk, individualized risk assessment and counseling are essential. The EC visit may be an optimal time to encourage initiation or reinstatement of hormonal methods of birth control.

Unintended childbearing and knowledge of emergency contraception in a population-based survey of postpartum women.

Matern Child Health J. 2008 May;12(3):332-41. Epub 2007 Aug 7.

Goldsmith KA, Kasehagen LJ, Rosenberg KD, Sandoval AP, Lapidus JA.

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OBJECTIVES: We examined the relationship between unintended childbearing and knowledge of emergency contraception. **METHODS:** The Oregon Pregnancy Risk Assessment Monitoring System (PRAMS) is a population-based survey of postpartum women. We analyzed data from the 2001 PRAMS survey using logistic regression to assess the relationship between unintended childbearing and emergency contraception while controlling for maternal characteristics such as age, race/ethnicity, education, marital status, family income, and insurance coverage before pregnancy. **RESULTS:** In 2001, 1,795 women completed the PRAMS survey (78.1% weighted response proportion). Of the women who completed the survey, 38.2% reported that their birth was unintended and 25.3% reported that they did not know about emergency contraception before pregnancy. Unintended childbearing was associated with a lack of knowledge of emergency contraception (OR 1.43, 95% CI 1.00, 2.05) after controlling for marital status and age. **CONCLUSIONS:** Women in Oregon who were not aware of emergency contraception before pregnancy were more likely to have had an unintended birth when their marital status and age were taken into account. Unintended birth was more likely among women who were young, unmarried, lower income, and uninsured. Given that emergency contraception is now available over-the-counter in the US to women who are 18 years of age or older, age- and culturally-appropriate public health messages should be developed to expand women's awareness of, dispel myths around, and encourage appropriate use of emergency contraception as a tool to help prevent unintended pregnancy and birth.

Use of emergency contraceptive pills and condoms by college students: a survey.**Int J Nurs Stud. 2008 May;45(5):775-83. Epub 2007 Mar 8.**

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OBJECTIVES: This study examined the intentions, knowledge, and attitudes of college students regarding the use of emergency contraceptive pills (ECPs) and condoms. **DESIGN AND SETTING:** A cross-sectional descriptive study was conducted at 16 Korean colleges. **METHODS:** Data were collected from March 15 to June 10, 2006 from a convenience sample of 1046 college students using a survey questionnaire. The survey included measures of demographic variables, intention to use ECPs (one item) and condoms (one item), knowledge about ECPs (12 items), and attitudes toward using ECPs (12 items) and condoms (16 items). All items except knowledge were rated on a 5-point Likert-type response format, with higher scores indicating greater intentions, more positive attitudes, and greater knowledge. **RESULTS:** Of the 1046 participants, 76.3% had heard of ECPs and 13.2% of the sexually active participants (n=190) had used them. Participants showed a general lack of knowledge about ECPs and misconceptions about their safety. The intentions of using ECPs and condoms were positively correlated with each other and with attitude such that the more positive the attitude, the greater their intention to use both ECPs and condoms. There were significant gender differences on many of the variables, in that female students had higher knowledge about ECPs, intention of using ECPs and condoms, and more positive attitude toward condoms than male students who had more positive attitudes toward ECPs. Females had more concerns about the safety of ECPs than males. **CONCLUSIONS:** The findings suggest that college students must be better informed about ECPs, and reassured about their safety. Additionally, promoting ECPs would not negatively affect condom use. Efforts are needed to disseminate up-to-date information to the general public and to develop educational and awareness programs to empower young people to make informed decisions about the use of ECPs and condoms.

Canada's drug advisory committee says emergency contraception should be available over the counter.

BMJ. 2008 May 3;336(7651):982.

Kermode-Scott B.

Effect of an emergency contraceptive pill intervention on pregnancy risk behavior.**Contraception. 2008 May;77(5):333-6. Epub 2008 Mar 21.**Comment in: *Contraception*. 2008 Oct;78(4):347; author reply 347-8.

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OBJECTIVE: Previous trials of emergency contraceptive pills (ECPs) found that in menstrual cycles ending in pregnancy, ECP use was more common among women exposed to interventions that enhanced access to the medication than among women with standard access. We examined data from one such trial to explore whether this finding has implications regarding the effect of the intervention on pregnancy risk behavior. **METHODS:** In our recent randomized trial, the intervention group received unlimited free ECPs in advance of need, whereas control participants obtained the medication when needed at usual cost. Participants were followed up for 1 year. In this secondary analysis, we examined ECP and contraceptive use in the cycles ending in pregnancy in that trial. **RESULTS:** Pregnancies in the intervention group appeared to have been more likely than those in the control group to be classified as "probably" or "possibly" ECP failures (12/74 in the intervention group vs. 1/74 in the control group; $p=.012$) and more likely to have occurred in the context of use of less efficacious contraceptives. **CONCLUSION:** Unrestricted access to ECPs in this trial may have increased the frequency of coital acts with the potential to lead to pregnancy.

Levonorgestrel administration in emergency contraception: bleeding pattern and pituitary-ovarian function.

Contraception. 2008 May;77(5):328-32. Epub 2008 Mar 18.

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BACKGROUND: This study was conducted to evaluate the effects of levonorgestrel administration for emergency contraception (EC) on bleeding pattern and pituitary-ovarian function. **STUDY DESIGN:** In 69 women with a reported stable menstrual cycle length of 24-34 days, we investigated bleeding patterns following EC administration in the follicular (n=26), periovulatory (n=14) and luteal (n=29) phase. In a subgroup of 8 women, hormonal evaluation and ultrasonography were performed. **RESULTS:** EC taken in the follicular, but not in the periovulatory or luteal phase, significantly shortened cycle length by 10.9±1 days. The subsequent cycle was not affected. EC taken in the late preovulatory phase, prior to the gonadotrophin surge, suppressed ovulation (n=7), while ovulation was not blocked when EC was given during an ongoing luteinizing hormone (LH) pulse (n=1). **CONCLUSIONS:** Our data indicate that EC given before the onset of the luteinizing hormone (LH) surge inhibits ovulation and hastens the end of the current menstrual cycle. Subsequently, the length of the following menstrual cycle returned as prior to treatment. By contrast, levonorgestrel administered after the expected ovulation has no effect on menstrual cycle length.

Emergency contraception availability in New Mexico: impact of direct pharmacy access.**J Am Pharm Assoc (2003). 2008 May-Jun;48(3):388-92.**

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OBJECTIVES: To assess the impact of direct pharmacy access to emergency contraception (EC) and availability of EC in Albuquerque and rural New Mexico and to compare availability of EC in Albuquerque with that estimated in a 2002 study. **DESIGN:** Investigational study. **SETTING:** Albuquerque and rural New Mexico, between March and September 2005. **PARTICIPANTS:** 121 community pharmacies (94 in Albuquerque and 27 in rural New Mexico). **INTERVENTIONS:** Research assistants visited pharmacies and followed a predetermined script during interviews with pharmacy staff. **MAIN OUTCOME MEASURES:** Availability of EC with and without an advance prescription; other factors related to EC access. **RESULTS:** EC was available in 50% of both Albuquerque and rural pharmacies. EC was available without an advance prescription in 13% of pharmacies. The medication was more likely to be in stock at pharmacies with an EC-certified pharmacist on staff (92%) than in those without an EC-certified pharmacist (39%) ($P < 0.001$). A study performed in 2002 reported that EC was in stock during 11% of visits to Albuquerque pharmacies, whereas the current study reported EC being available during 50% of visits. **CONCLUSION:** At the time of this study, EC availability was similar in both Albuquerque and rural New Mexico pharmacies, and pharmacies with trained pharmacists on staff were more likely to stock EC medications.

Effectiveness of levonorgestrel given after or before ovulation.

Contraception. 2008 Jun;77(6):463-4; author reply 464-5. Epub 2008 Apr 24.

Comment on: Contraception. 2007 Feb;75(2):112-8.

Ventura-Junco P, Besio M, Santos M.

Computer-assisted provision of emergency contraception a randomized controlled trial.**J Gen Intern Med. 2008 Jun;23(6):794-9. Epub 2008 Apr 9.**

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BACKGROUND: Emergency contraception (EC) can prevent unintended pregnancy. However, many women continue to lack information needed to use EC effectively and clinician time to counsel women about EC is limited. **OBJECTIVE:** To evaluate whether computer-assisted provision of EC can increase knowledge and use of EC among women able to access EC without a prescription. **DESIGN:** We conducted a randomized controlled trial in which the intervention group received a 15-minute computerized educational session and 1 pack of EC. The control group received education about periconception folate supplementation, but no information about EC. Participants were contacted 7 months after enrollment. **PARTICIPANTS:** Four hundred forty-six women recruited from 2 urgent care clinics in San Francisco in 2005. **MEASUREMENTS:** Knowledge of EC, use of EC, and self-reported pregnancy. **RESULTS:** At follow-up, women in the intervention group answered an average of 2 more questions about EC correctly than they had at baseline, whereas women in the control group answered only 1 more item correctly (2.0 vs 1.2, $p < .001$). There was a trend toward more use of EC during the study period in the intervention group (10% vs 4% of women followed, $p = .06$; 6% vs 3%, $p = .09$ of women enrolled). Fewer women in the intervention group were pregnant at the time of follow-up (0.8% vs 6.5%, $p = .01$ of women followed; 0.5% vs 4.0%, $p = .01$ of women enrolled). **CONCLUSIONS:** Computer-assisted provision of EC in urgent care waiting areas increased knowledge of EC in a state where EC had been available without a prescription for 3 years.

Male university students' views, attitudes and behaviors towards family planning and emergency contraception in Turkey.

J Obstet Gynaecol Res. 2008 Jun;34(3):392-8.

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AIM: To determine male university students' views, attitudes and behavior towards family planning and emergency contraception as an important aspect of reproductive health. **METHODS:** This descriptive study was carried out with 278 men who were chosen using the convenience sampling method at several universities in Istanbul during the spring semester of 2005. Data were obtained through interviews with men by means of a 32 item self-administered questionnaire. Data analyses were made with the Statistical Package for the Social Sciences (SPSS). **RESULTS:** Almost all of the men (96.6%) were single. Students' (n = 200) average age at their first sexual intercourse experience was 17.4 years. Seventy-three percent of the students used a family planning (FP) method in their first sexual experiences (69.5% used a condom). The male condom is the most well known (95.8%) and commonly used (70.1%) FP method. The number of students taking a shared responsibility for FP was 79.4%. One third of the students had negative attitudes towards vasectomy and 1/5 of them were against the use of condoms. The percentage of the students who had heard about emergency contraception (EC) was 4.5%. **CONCLUSION:** Male university students who are sexually active generally do not have enough knowledge about FP and EC. They tend to engage in high-risk behavior. It is imperative that education and counseling in reproductive and sexual health must be offered to all young men. In addition, men's attitudes toward contraceptive methods should be evaluated in other cultures and useful comparisons made with Turkey.

Emergency contraception: are pediatric residents counseling and prescribing to teens?**J Pediatr Adolesc Gynecol. 2008 Jun;21(3):129-34.**

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STUDY OBJECTIVES: (1) To assess pediatric residents' attitudes and practices related to counseling about and prescribing emergency contraceptive pills (ECPs) for teens. (2) To determine whether attitudes, counseling, and prescribing practices vary among different levels of residency training. **DESIGN:** Questionnaire. **SETTING:** Two large inner-city academic medical centers in New York City. **PARTICIPANTS:** Pediatric residents (PGY 1-3). **MAIN OUTCOME MEASURES:** Attitudes, counseling and prescribing patterns of ECPs by the pediatric residents **RESULTS:** 101/120 residents participated in the survey; 35% PGY1, 38% PGY2, 28% PGY3. Less than a third (26%) reported counseling teens about the availability of ECPs during routine non-acute care visits and just over half (56%) provided ECP counseling during visits for contraception. Only 6% of pediatric residents reported that they prescribed ECPs often, while 42% never prescribed ECPs. The majority of the residents did not think that prescribing ECPs would encourage teens to practice unsafe sex or would discourage compliance with other contraceptive methods (70% and 68%, respectively). However, the majority (67%) also reported that they did not think that ECPs should be available over the counter, without prescription. Further analysis by year of training showed that more junior and senior residents than interns counseled adolescents about ECPs at both routine health care maintenance visits and at visits for contraception (32% vs 15%; 62% vs 42%, respectively), would provide adolescent girls with ECPs to have on hand prior to an episode of unprotected sex (52% vs 31%), and thought that ECPs should be available over the counter (39% vs 20%), $P < 0.05$. **CONCLUSIONS:** Pediatric residents are missing opportunities to prevent unintended teenage pregnancy but they become more likely to counsel about and prescribe ECPs as they progress through residency training.

Counseling about and use of emergency contraception in the United States.**Perspect Sex Reprod Health. 2008 Jun;40(2):81-6.**

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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.

Emergency contraception.

Emerg Nurse. 2008 Jul;16(4):22-4.

Godding J. Ludlow Hospital.

Emergency contraception: legal consequences of medical classification.

J Law Med Ethics. 2008 Summer;36(2):428-31.

Gerber E. Harvard Law and Health Care Society, MA, USA.

Characteristics of women who seek emergency contraception and family planning services.**Am J Obstet Gynecol. 2008 Aug;199(2):111.e1-5. Epub 2008 Mar 20.**

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OBJECTIVE: The purpose of this study was to compare the demographic characteristics and sexual risk behaviors of women who seek emergency contraception (EC) and general family planning (FP) services. **STUDY DESIGN:** This cross-sectional study included 227 women aged 17-43 years who were being evaluated for either EC or FP in an outpatient setting from 2003-2004. Descriptive statistics and odds ratios were included. **RESULTS:** The EC group, compared with the FP group, had higher proportions of women with education beyond high school (62% vs 52%; $P = .02$), and not married (79% vs 42%; $P < .01$). The groups also differed by age, race, and income. The EC group was more likely to have been unprotected at their last intercourse (odds ratio, 5.56; 95% CI, 2.22, 14.29) and less likely to have a previous sexually transmitted infection (odds ratio, 0.41; 95% CI, 0.17, 0.96). **CONCLUSION:** The development of EC education programs for women is important for increasing awareness for diverse groups of women and their healthcare providers.

Emergency contraception.

Aust Fam Physician. 2008 Aug;37(8):599.

Barker S.

An intervention to improve advance emergency contraceptive prescribing practices among academic primary care physicians.

Contraception. 2008 Aug;78(2):131-5. Epub 2008 May 21.

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BACKGROUND: Primary care physicians care for reproductive-aged women, yet do not routinely counsel women about or prescribe contraceptives, including emergency contraception (EC). **STUDY DESIGN:** We used a pre-/post-study to design to assess whether the proportion of primary care physicians who counseled women about and prescribed EC increased 6 months after a peer-led intervention with educational and reminder components. Participants included 36 residents and attending physicians at an academically affiliated internal medicine practice from July 2004 to June 2005 (when prescription was required for EC in New York). Data were collected by self-administered questionnaire. **RESULTS:** At baseline, 37% of participants had counseled women about EC and 34% had prescribed EC in the prior month. After the intervention, 80% of participants had counseled women about EC ($p<.001$) and 66% had prescribed EC ($p=.03$) in the prior month. **CONCLUSION:** Six months after a peer-led intervention including educational and reminder components, the proportion of primary care physicians who had counseled women about and prescribed EC in the past month increased significantly.

Emergency contraception: when the pharmacist conscience clause restricts access.

Nurs Womens Health. 2008 Aug;12(4):343-6.

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Assessing attitudes about emergency contraception among urban, minority adolescent girls: an in-depth interview study.

Pediatrics. 2008 Aug;122(2):e395-401.

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OBJECTIVE: The purpose of this work was to explore the knowledge, attitudes, and beliefs of urban, minority adolescent girls about intention to use emergency contraception pills and to identify barriers to emergency contraception pill use. **PATIENTS AND METHODS:** We conducted an in-depth, semistructured interview study of healthy, urban-dwelling, English-speaking 15- to 19-year-old black adolescents seeking care in a children's hospital emergency department. Purposive sampling was used to recruit sexually active and nonsexually active adolescents and those with and without a history of pregnancy. Enrollment continued until saturation of key themes was achieved. Participants returned after their emergency department visit for a 1-hour interview. The interview consisted of semistructured questions based on the theory of planned behavior constructs: attitudes (including knowledge), subjective norms, and perceived behavioral control, as well as demographic data collection. Interviews were recorded and transcribed. Transcripts were coded by 2 members of the study team by using a modified grounded-theory method. **RESULTS:** Thirty interviews were required for saturation. Mean participant age was 16.4 years; 53% reported being sexually active, and 17% reported a history of pregnancy. Specific knowledge gaps exist about emergency contraception pills, including misconceptions about the recommended time frame for taking the medication. Several major themes were noted for each of the constructs. Intention to use emergency contraception pills is affected by the conflicting attitudes that the emergency contraception pill works faster than birth control pills and that those who use emergency contraception pills are irresponsible; family and friends are important influences and have uninformed but generally supportive opinions; and adolescents have a perception of limited behavioral control because of their young age and concerns about confidentiality. **CONCLUSIONS:** Urban, minority adolescent girls have misconceptions about emergency contraception pills, are affected by the opinions of those close to them, and express concern about specific barriers. These findings can inform specific interventions aimed at addressing the barriers to emergency contraception pill use that are of most importance to this population of young women.

Effectiveness of web-based education on Kenyan and Brazilian adolescents' knowledge about HIV/AIDS, abortion law, and emergency contraception: findings from TeenWeb.

Soc Sci Med. 2008 Aug;67(4):628-37. Epub 2008 Jun 14.

Halpern CT, Mitchell EM, Farhat T, Bardsley P. University of North Carolina, Chapel Hill, NC, USA. carolyn_halpern@unc.edu

Little evidence is available about the utility of web-based health education for students in low resource settings. This paper reports results from an evaluation of the TeenWeb project, a multi-year, web-based health education intervention implemented in two urban settings: Nairobi, Kenya (N=1178 school students) and Rio de Janeiro, Brazil (N=714 school students). A quasi-experimental, school-based pre-test/post-test design was implemented at each study site to determine if easy access to web-based reproductive health information, combined with intellectual "priming" about reproductive health topics, would result in improved knowledge and attitudes about topics such as condom use, access to HIV testing, emergency contraception and abortion laws. Students in web-access schools completed one web-based module approximately every 6-8 weeks, and in return, had access to the Internet for at least 30 min after completing each module. Although students were encouraged to access project-supplied web-based health information, freedom of web navigation was an incentive, so they could choose to access other Internet content instead. Most measures showed statistically significant differences between students in "web" and "comparison" conditions at post-test, but only about half of the differences were in the hypothesized direction. Results of an embedded experiment employing more directed feedback tripled the likelihood of correctly reporting the duration of emergency contraception effectiveness. Review of URL logs suggests that the modest results were due to inadequate exposure to educational materials. Future intervention should focus on teen's purposeful searching for health information when they are in personal circumstances of unmet health needs.

The impact of over-the-counter availability of "Plan B" on teens' contraceptive decision making.

Soc Sci Med. 2008 Aug;67(4):618-27. Epub 2008 Jun 5.

Krishnamurti T, Eggers SL, Fischhoff B. Carnegie Mellon University, Social and Decision Sciences, 208 Porter Hall, 5000 Forbes Avenue, Pittsburgh, PA 15213, United States. tamar@cmu.edu

In ruling on the over-the-counter status (OTC) of the emergency contraceptive, "Plan B", the US Food and Drug Administration (FDA) questioned whether younger adolescent females could adequately self-select and self-medicate. That determination requires a judgment of fact, regarding how increased emergency contraceptive availability would affect adolescents' behavior, and a judgment of values, regarding the acceptability of different outcomes. We present a general approach to such problems, using analytical and empirical methods grounded in behavioral decision research. We illustrate it with findings from 30 in-depth interviews and follow-up surveys, with adolescent females aged 13-19 in the Pittsburgh area reporting how Plan B availability would affect three decisions (having sex, choosing contraceptives, using Plan B). Although the FDA expressed concern about younger teens using Plan B as their primary form of contraception, neither younger nor older teens revealed such an intention. However, teens preferred easier availability, should emergency contraceptive be needed. Incorporating an understanding of teens' decision-related perspectives can make such policies more predictable and transparent.

Emergency contraception encourages young people to have unprotected sex.

Nurs Times. 2008 Sep 2-8;104(35):9.

Gough M. Harlow Walk-in Centre.

[Emergency contraception and voluntary termination of pregnancy in Spain. A time for reflection]

Aten Primaria. 2008 Sep;40(9):478-9.

[Article in Spanish]

Buñel Alvarez JC.

Implementing an advance emergency contraception policy: what happens in the real world?

Perspect Sex Reprod Health. 2008 Sep;40(3):162-70.

Whittaker PG, Armstrong KA, Adams J. Family Planning Council, Philadelphia, USA. paulw@familyplanning.org

CONTEXT: Advance provision of emergency contraception increases the likelihood of its use, yet little is known about the factors that influence successful implementation of an advance provision policy in publicly funded family planning clinics. **METHODS:** Data on knowledge of, attitudes toward and use of emergency contraception were collected from 211 patients attending four Title X-funded clinics in Pennsylvania in 2001-2002. In addition, 22 staff from the four clinics were interviewed regarding barriers to and facilitators of advance provision in 2004-2005, and 111 staff from 46 clinics completed related surveys in 2005. Qualitative data underwent content analysis, and frequencies and bivariate associations between variables were calculated for the survey data. **RESULTS:** Most patients said they would use emergency contraception (80%) and believed it should be easy to obtain (93%), although 46% thought it is a form of abortion. Patients' familiarity with the method, attitudes toward it and self-efficacy regarding its use were not associated with most demographic or reproductive health characteristics. While nearly all interviewed staff endorsed routine advance provision, only about half of survey respondents offered it "very often" at patients' initial or annual visits. Barriers to advance provision included staff prejudgment of patients' needs and ability to use the method, time constraints and inefficiencies in clinic procedures. **CONCLUSIONS:** Strategies that may facilitate advance provision of emergency contraception include emphasizing the need for staff to offer it during all patient visits, providing patient-friendly information and streamlining clinic procedures.

Knowledge and opinions of emergency contraceptive pills among female factory workers in Tijuana, Mexico.

Stud Fam Plann. 2008 Sep;39(3):199-210.

Garcia SG, Becker D, de Castro MM, Paz F, Olavarrieta CD, Acevedo-Garcia D. Reproductive Health for Latin America and the Caribbean, Population Council, Escondida 110, Col. Villa Coyoacan, Mexico DF. sgarcia@popcouncil.org.mx

Workers in Mexico's maquiladoras (assembly plants) are mainly young, single women, many of whom could benefit from emergency contraceptive pills (ECPs). Because ECPs are readily available in Mexico, women who know about the therapy can obtain it easily. Do maquiladora workers know about the method? Could worksite programs help increase awareness? To investigate these questions, we conducted a five-month intervention during which workers in three maquiladoras along the Mexico-United States border could attend educational talks on ECPs, receive pamphlets, and obtain kits containing EC supplies. Among the workers exposed to our intervention, knowledge of ECPs increased. Reported ECP use also increased. Although our intervention apparently increased workers' knowledge and use, the factory proved to be a difficult intervention setting. Problems we experienced included a factory closure and management/staff opposition to certain project elements. Future studies should continue to investigate work-site interventions and other strategies to reach workers.

Who is using emergency contraception? Awareness and use of emergency contraception among California women and teens.

Womens Health Issues. 2008 Sep-Oct;18(5):360-8.

Baldwin SB, Solorio R, Washington DL, Yu H, Huang YC, Brown ER. Office of Health Assessment and Epidemiology, Los Angeles County Department of Public Health, Los Angeles, California 90012, USA. sbaldwin@ph.lacounty.gov

INTRODUCTION: Emergency contraception (EC) reduces women's risk for pregnancy after unprotected intercourse, and women's awareness of the method is increasingly important for expanding access. However, knowledge of EC alone does not predict use, and few population data exist to describe EC use among those aware of the method. **METHODS:** Using data from the 2003 California Health Interview Survey, we measured EC awareness among 11,392 women ages 15-44, and EC use among 7,178 respondents who were aware of EC and at risk for pregnancy. Using chi(2) analyses and multivariable logistic regression, we examined population characteristics that epidemiologically predict EC awareness and use, including age, race/ethnicity, income, health insurance status, usual source of health care, immigration status, languages spoken at home, and urban versus rural residence. **RESULTS:** Nearly 76% of respondents had heard of EC, but awareness was lower among teens, women of color, poor women, women with publicly funded health insurance, those without a usual source of care, immigrants, non-English-language speakers, and rural residents. Among women aware of EC, about 4% reported having used the method in the previous year; young age, low income, attending a community/government clinic for care or not having a source of care, and living in an urban area significantly increased the odds for using EC. **CONCLUSIONS:** Among California women in 2003, awareness and use of EC remained low. However, similar rates of use were reported among racial, ethnic, and linguistic subgroups. Those most likely to report use of the method included population groups at high risk for unintended pregnancy.

Effect of an emergency contraceptive pill intervention on pregnancy risk behavior--an erroneous conclusion.

Contraception. 2008 Oct;78(4):347; author reply 347-8. Epub 2008 Jul 31.

Comment on: Contraception. 2008 May;77(5):333-6.

Raine T.

No such thing as an easy (or EC) fix.

Contraception. 2008 Nov;78(5):351-4. Epub 2008 Sep 18.

Comment in: Contraception. 2009 May;79(5):403.

Trussell J, Schwarz EB, Guthrie K, Raymond E.

Emergency contraception in South Africa: a literature review.**Eur J Contracept Reprod Health Care. 2008 Dec;13(4):351-61.**

Maharaj P, Rogan M. School of Development Studies, University of KwaZulu-Natal, Durban, South Africa. Maharajp7@ukzn.ac.za

OBJECTIVES: Since emergency contraception (EC) products became available over the counter in South Africa in 2000 a number of studies have emerged. This paper reviews the growing body of literature on EC in that country. **METHODS:** Standard computer database searches identified published articles and reports on EC in South Africa. **RESULTS:** The level of awareness of EC is fairly low, especially among public sector clients. Most studies suggest that very few people have even heard of it. Several studies also indicate that provider knowledge of and attitude towards EC vary greatly. While many providers are aware of the indications and efficacy of the method, not all health care professionals are sufficiently knowledgeable and misperceptions persist. The limited knowledge of EC among health professionals may, in turn, prevent them from discussing it with clients. **CONCLUSION:** The existing literature suggests that the greater availability of EC is not sufficient to increase uptake and that interventions are needed to ensure that women become aware of this option.

Awareness and usage of emergency contraception among teenagers seeking abortion: a Shanghai survey.

Eur J Obstet Gynecol Reprod Biol. 2008 Dec;141(2):143-6. Epub 2008 Oct 1.

Xu J, Cheng L. School of Public Health, Fudan University, 138 Yixueyuan Road, Shanghai 200032, People's Republic of China. xujieshuang@hotmail.com

OBJECTIVE: The objective was to determine the level of awareness and usage of emergency contraception (EC) among pregnant teenagers. **STUDY DESIGN:** A cross-sectional survey was conducted through face-to-face interviews using a structured questionnaire, which was distributed to 600 pregnant teenagers with an unwanted pregnancy who requested an abortion at the MCH and general hospitals in Shanghai. Before the interview, the interviewer provided a short explanation of the purpose of the study and of EC, and then collected information on the respondent's previous awareness, usage, and reason for failure. **RESULTS:** The average age of the participants was 17.86+/-0.99 years. Almost half (49.1%; 290/591) had experienced contraception failure and almost all (99.3%; 587/591) had already had sex without any contraception in the past. Backup "methods" previously used included EC in 36.1% (110/305), urinating in 32.1% (98/305), showering in 15.4% (47/305), vaginal douching in 10.5% (32/305), and jumping up and down in 5.9% (18/305). Almost half (47.7%; 282/591) of the girls had heard of EC; among them 44.0% (124/282) had already used it at least once within the 6 months before the pregnancy. Almost all (91.4%; 540/591) of the girls had used no contraception, 8.6% (51/591) had experienced contraception failure within the pregnancy cycle, but only 8.3% (49/591) had actually used EC. Among the latter, 81.6% (40/49) correspond to user failure, the other 18.4% (9/49) to method failure. Girls who were aware of EC were more likely to use a contraceptive method, and were less likely to have sex without any contraception ($P < 0.01$), but were not more likely to use unreliable contraception ($P > 0.05$). **CONCLUSIONS:** Both advocacy of EC and the awareness of the risk of unprotected sex should be improved through sex education programs in schools in China. Pharmacists, being the main EC providers in direct contact with sexually active adolescents, should receive systematic training and take the responsibility for offering information about the correct usage of EC and other, more reliable contraceptive methods.

Emergency contraceptive knowledge and practice among unmarried women in Enugu, southeast Nigeria.

Niger J Clin Pract. 2008 Dec;11(4):296-9.

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BACKGROUND: With a high incidence of unwanted pregnancies and unsafe abortion especially among unmarried women in developing countries, there is need to promote emergency contraception (EC). **OBJECTIVE:** To assess the unmarried women's knowledge, attitude and practice of EC. **METHODS:** A random sample of a cross-section of 594 unmarried women in Enugu, southeast Nigeria, was surveyed with questionnaire between January and April 2004. **RESULTS:** Of the 1,160 unmarried women interviewed initially, 51% had heard of EC. One hundred (16.9%) knew the correct meaning of EC and these were mainly those with higher educational qualification, previous unwanted pregnancy, or had used modern contraception ($p < 0.05$). Other respondents mentioned vaginal douching, application of traditional remedies to the vagina as effective emergency contraceptives. Although sixty percent ($n=354$) of respondents had used regular modern contraception, only 20% ($n=119$) had ever used EC. Few respondents knew correctly how EC function and the recommended timeframe for use. The two most common sources of information about EC were mass media (49.2%) and friends (28.8%). Seventy three percent ($n=87$) of emergency contraceptive users had some difficulties obtaining EC due to non-availability ($n=42$), attitude of health service providers to unmarried women demanding contraception ($n=28$) and cost ($n=17$). The attitude of the health service providers may have accounted for the dearth of information on EC even among users. Sixty-seven percent of respondents favored the use of EC by unmarried women. Opposition to the use of EC by unmarried women is because of belief that it has some health effect ($n=72$), induces abortion ($n=80$) and for religious reasons ($n=42$). **CONCLUSION:** Provision of appropriate information and access to EC, better service providers' attitude towards unmarried women is advocated.

Knowledge, attitudes, and use of emergency contraception among Hispanic women of North Carolina.**South Med J. 2009 Jan;102(1):17-20.**

Comment in: South Med J. 2009 Jan;102(1):3-4. South Med J. 2009 Jan;102(1):5-7. South Med J. 2009 May;102(5):551.

Galvin SL, Fagan EB. Department of Obstetrics and Gynecology and Division of Family Medicine, MAHEC, Asheville, NC 28801, USA. shelley.galvin@mahec.net

INTRODUCTION: This project was designed to determine the knowledge, attitudes and self-reported use of emergency contraception (EC) of Spanish-speaking women of western North Carolina. **MATERIALS AND METHODS:** Using a cross-sectional survey, a convenience sample of patients completed the survey in exam or interview rooms of an obstetric and gynecology residency program in western North Carolina. Participants included 213 Spanish-speaking women of childbearing age (18 to 44-years-old) presenting for routine care between August 2004 and October 2006. **RESULTS:** Seventy percent of the sexually active respondents (N = 196) reported inconsistent use of birth control. Only 22% reporting knowing about EC; an additional 26% knew about the morning after pill. Overall, 12% reported previous use of EC. Very few (15%) reported a moral or religious objection to EC. Only 21% reported having discussed EC with a care provider. **DISCUSSION:** Considerable opportunity exists to expand patient education about all contraceptive options, including EC with Hispanic women of western North Carolina.

Science, ideology, and the public good: the precarious state of emergency contraception in America.

South Med J. 2009 Jan;102(1):3-4.

Comment in: South Med J. 2009 Jan;102(1):5-7.

Comment on: South Med J. 2009 Jan;102(1):17-20.

Kauffman RP.

Why emergency contraception remains controversial.

South Med J. 2009 Jan;102(1):5-7.

Comment in: South Med J. 2009 May;102(5):551.

Comment on: South Med J. 2009 Jan;102(1):17-20. South Med J. 2009 Jan;102(1):3-4.

Jones DA, Stammers T.

Attitude and behavior effects in a randomized trial of increased access to emergency contraception.

Obstet Gynecol. 2009 Jan;113(1):107-16.

Weaver MA, Raymond EG, Baecher L. Family Health International, Research Triangle Park, North Carolina, USA.

OBJECTIVE: To explore the effects of providing unrestricted access to emergency contraception in advance of need on various psychosocial outcomes and pregnancy. **METHODS:** In the trial, women were randomly assigned to either increased access to emergency contraception (two free packs at enrollment with unlimited free resupply) or standard access. Participants were evaluated for 1 year for pregnancy and other outcomes. Psychosocial data were collected at enrollment and at 6 and 12 months. We applied exploratory factor analysis for data reduction. We compared the resulting psychosocial factors (including factors related to "aversion to pregnancy" and to the perceived "relative benefit" and "accessibility" of emergency contraception), two items directly assessing substitution, and pregnancy between randomization groups over time. **RESULTS:** On average, women in the increased access group had significantly stronger perceptions of both the "relative benefit" and "accessibility" of emergency contraception ($P < .001$ for each). Women in the increased access group were significantly more likely to report that they had ever used emergency contraception because they did not want to use either condoms or another contraceptive method ($P < .001$). Regarding pregnancy, we noted a significant interaction between randomization group and "aversion to pregnancy" ($P = .010$): among the least "averse" women, increased access had a protective effect (hazard ratio 0.64, 95% confidence interval 0.39-1.04); among the most "averse" women, increased access had a deleterious effect (hazard ratio 1.73, 95% confidence interval 1.01-2.98). **CONCLUSION:** As a result of having unrestricted access, some women substituted emergency contraception for their usual contraceptive methods. **CLINICAL TRIAL REGISTRATION:** ClinicalTrials.gov, www.clinicaltrials.gov, NCT00060463 **LEVEL OF EVIDENCE:** I.

Trends in levonorgestrel emergency contraception use, births, and abortions: the Utah experience.

Medscape J Med. 2009;11(1):30. Epub 2009 Jan 29.

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CONTEXT: Published reports to date have failed to demonstrate a decrease in abortion rates with increased dispersal of levonorgestrel emergency contraception (LNG EC). **OBJECTIVE:** To evaluate whether there is an association between statewide increases in LNG EC use and birth, fertility, and abortion rates. **DESIGN:** Ecological study. The number of LNG EC doses dispensed at all Planned Parenthood Association of Utah (PPAU) sites ($n = 6$) were obtained for 2000-2006. For this time period, birth and abortion data were obtained from the Utah Department of Health. **SETTING:** State of Utah. **PATIENTS:** Women of childbearing age. **MAIN OUTCOME MEASURES:** Birth rates were calculated as the number of live births per 1000 population; general fertility rates, abortion rates, and LNG EC rates were calculated per 1000 women of childbearing age (15-44 years). **RESULTS:** Between 2000 and 2006, yearly distribution of LNG EC increased from 11,263 to 52,083 doses. Over this period, the rate of Plan B use per 1000 women age 15-44 years increased from 21.30 doses/1000 to 87.82 doses/1000, an increase of 312%. During the same period, there were corresponding changes in the statewide birth rate (-2.94%), general fertility rate (0.73%), and abortion rate (-6.36%). Pearson correlation coefficients were statistically significant for the association between the LNG EC rate and the birth rate (-0.9053; $P = .0050$) and the abortion rate (-0.8749; $P < .001$), but not between the Plan B rate and the general fertility rate (0.2446; $P = .5970$). **CONCLUSION:** This ecological study represents, to the authors' knowledge, the first statistically significant association between increasing rates of LNG EC distribution and decreasing abortion rates.

Is emergency contraception murder?**Reprod Biomed Online. 2009;18 Suppl 1:37-42.**Purdy L. Wells College, Ithaca, New York 14850, USA. purdy@wells.edu

Hormonal emergency contraception (EC) is engendering fierce moral disagreement that is bleeding over into politics and policy. This paper considers Catholic positions on this issue, as they are the fullest and best developed. Its most extreme opponents, such as representatives of the Vatican, hold that EC is an abortifacient that should be banned. Moderates like Sulmasy believe that it should be available to women who have been raped when a negative pregnancy test suggests that fertilization has not yet taken place, and liberals, like Catholics for Free Choice, believe that it should be available to all women regardless of its mode of action. These positions depend in part on underlying philosophical presuppositions about when valuable life begins and scientific assumptions about how EC works. I argue that there are good reasons for rejecting the criterion of fertilization, and that the best current evidence strongly suggests that EC has no post-fertilization effects. These points by themselves undermine key objections to EC. I also show that none of the remaining considerations are sufficiently compelling to warrant overriding women's right to exercise religious, moral, and political agency in preventing undesired pregnancies.

Emergency contraception: how does it work?**Reprod Biomed Online. 2009;18 Suppl 1:32-6.**

Baird DT. Centre for Reproductive Biology, University of Edinburgh, Simpson Centre for Reproductive Health, Edinburgh, UK. dtbaird@ed.ac.uk

Emergency (or post-coital) contraception is any substance or device that is used to prevent pregnancy after unprotected intercourse. Currently used hormonal methods of emergency contraception (high-dose combined oral contraceptive pill or levonorgestrel) prevent about 50-80% of pregnancies. Research has demonstrated that these methods inhibit the midcycle surge of LH from the pituitary and, if given at least 2 days before ovulation, ovulation is delayed or prevented. Ovulation still occurs if administration is delayed until ovulation is imminent. Biological data that suggest that the most likely mode of action is by preventing fertilization are supported by the clinical observation that the greater the interval between coitus and administration the greater the chance of pregnancy. There are no data supporting the view that levonorgestrel can impair the development of the embryo or prevent implantation. In contrast, other very effective methods of emergency contraception, such as mifepristone and intrauterine devices, can also inhibit implantation.

Emergency contraception: the state of the art.**Reprod Biomed Online. 2009;18 Suppl 1:28-31.**

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Emergency contraception, otherwise known as post-coital contraception, is part of the continuum of contraceptive methods that women and couples can use for pregnancy prevention. Although emergency contraception should not be used as a regular, plan-ahead contraceptive method, it gives a woman one last-ditch effort to prevent unwanted pregnancy. This paper reviews the history of emergency contraception, the need for further studies, and results of studies conducted at the World Health Organization. Various methods used for emergency contraception are discussed, as well as their efficacies and side effects.

Pharmacist interest in and attitudes toward direct pharmacy access to hormonal contraception in the United States.

J Am Pharm Assoc (2003). 2009 Jan-Feb;49(1):43-50.

Landau S, Besinque K, Chung F, Dries-Daffner I, Maderas NM, McGhee BT, Foster DG. Pacific Institute for Women's Health, Los Angeles, CA, USA. slandau@piwh.org

OBJECTIVES: To assess pharmacist interest, comfort level, and perceived barriers regarding providing pharmacist-initiated access to hormonal contraceptives (i.e., tablets, patches, rings, injectables, emergency contraception [EC]). **DESIGN:** Descriptive, nonexperimental, cross-sectional study. **SETTING:** United States between November 2004 and January 2005. **PARTICIPANTS:** 2,725 pharmacists working in community chain pharmacies (64%), community independent pharmacy (31%), and other practice settings, including hospitals and home care facilities (5%). **INTERVENTION:** Survey sent electronically by the American Pharmacists Association to a random sample of 14,142 of its 50,000 pharmacist members nationally. **MAIN OUTCOME MEASURES:** Pharmacist interest and comfort level in providing pharmacy access to hormonal contraception (HC), perceived barriers and training needs, and familiarity with and provision of EC. **RESULTS:** 2,725 survey responses (19% response rate) were received. Pharmacists reported being very familiar with HC. The majority of respondents were comfortable and interested in providing direct access to HC in the pharmacy. Perceived barriers to providing HC in the pharmacy included lack of time, no mechanism of reimbursement for the service, and possible resistance from physicians. **CONCLUSION:** Strong interest, comfort level, and capability from pharmacists, combined with a documented demand for direct pharmacy access from patients, indicate that pharmacy access to HC has the potential to meet patient needs and increase access to HC. Education about current clinical practice recommendations-which no longer require pelvic examinations and Papanicolaou (Pap) smears before hormonal contraception is initiated-may increase pharmacist support for providing hormonal methods directly.

Ectopic pregnancy following levonorgestrel emergency contraception: a case report.**Contraception. 2009 Feb;79(2):155-7. Epub 2008 Oct 9.**

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Use of levonorgestrel as emergency contraception is a safe and effective measure to prevent unwanted pregnancy. However, ectopic gestation in case of failure is a known risk. Access to levonorgestrel without a prescription in many countries has made it impossible to estimate the exact incidence of this potential adverse event. Thus, spontaneous reporting of cases serves to alert physicians to this possibility. We present a case of ectopic pregnancy following use of levonorgestrel emergency contraception. To our knowledge, this is the first case report from India following introduction of levonorgestrel emergency contraception in 2001.

Migrainous cerebral infarction after postcoital contraception.

Cephalalgia. 2009 Feb 18. [Epub ahead of print]

Caballero PE.

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Low-dose fentanyl and midazolam in outpatient surgical abortion up to 18 weeks of gestation.

Contraception. 2009 Feb;79(2):122-8. Epub 2008 Oct 9.

Wilson LC, Chen BA, Creinin MD.

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BACKGROUND: We investigated the safety of a conscious sedation protocol using intravenous fentanyl and midazolam by direct venous injection in women who underwent outpatient surgical abortion up to 18 weeks of gestation. **STUDY DESIGN:** This retrospective cohort study evaluated 1433 abortion procedures performed on women who received intravenous conscious sedation between April 1, 2001, and December 31, 2006. Women were allowed oral intake before the procedure. De-identified data were abstracted from charts using a standardized extraction form. Primary outcomes evaluated were need for reversal agents, need to obtain emergency intravenous access, pulmonary aspiration, need for oxygen supplementation and hospitalization for any reason. **RESULTS:** Of the 1433 procedures, 410 women received sedation with continuous intravenous access, and 1023 women received sedation by direct venous injection. More than 95% of women received fentanyl 100 mcg combined with 1-2 mg of midazolam. We identified four (0.3%) instances of adverse events, none of which occurred as a result of oversedation. No women experienced oral content aspiration. **CONCLUSIONS:** Intravenous conscious sedation with fentanyl and midazolam is safe for outpatient surgical abortion in women without cardiovascular compromise up to 18 weeks of gestation. The risk of aspiration or oversedation requiring reversal agents is rare and does not warrant universal direct venous access or restriction of oral intake.terminology used in public health campaigns, non-evidence-based medical protocols and confusion between emergency contraception and medication abortion in the media.

Does readily available emergency contraception increase women's awareness and use?**Eur J Contracept Reprod Health Care. 2009 Feb;14(1):39-45.**

Novikova N, Weisberg E, Fraser IS. Department of Obstetrics and Gynaecology, University of Sydney, Sydney Centre for Reproductive Health Research, Research Division of Family Planning NSW, Sydney, Australia.

BACKGROUND: In Australia just over half of all women of reproductive age have experienced an unplanned pregnancy, many of which could have been avoided by use of emergency contraception. A dedicated emergency contraceptive pill (ECP) pack became available on prescription in Australia in 2002, and over the counter in 2004. **OBJECTIVES:** To determine if availability of a dedicated over the counter ECP pack in Australia increased knowledge and use of emergency contraception (EC). **MATERIAL AND METHODS:** Women attending three free-standing abortion clinics in Sydney answered an anonymous questionnaire on their knowledge and use of the ECP. Group 1 (208 women) was recruited prior to a dedicated ECP pack being available, group 2 (308) after it was available on prescription, and group 3 (202) after it became available over the counter. **RESULTS:** Women who had heard about EC were significantly younger ($p < 0.005$). The mean age of women who had never heard about EC was 29.8 years compared to 26.3 for women who had heard about EC. More women expressed awareness of the ECP after it became available over the counter. Women in group 2 attained a higher educational level than women in the other groups ($p < 0.005$). There was a significant trend to increased use of the ECP in women of higher educational level ($p < 0.005$). The use of EC did not increase significantly with improved availability and access. **CONCLUSIONS:** Among women seeking termination of pregnancy wider availability of the ECP has increased women's awareness of EC but not use.

Emergency contraception services for adolescents: a National Survey of Children's Hospital Emergency Department Directors.

J Pediatr Adolesc Gynecol. 2009 Apr;22(2):111-9.

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STUDY OBJECTIVE: To assess emergency contraception (EC) counseling and prescribing practices of children's hospital emergency department (ED) directors and the use of EC protocols in these settings. **DESIGN:** Cross-sectional study of children's hospital ED directors responding to a 15-minute 44-item semi-structured survey during telephone interviews. **PARTICIPANTS:** 50 of 96 eligible directors of children's hospital EDs in the United States. **MAIN OUTCOME MEASURES:** EC protocols, EC counseling processes, EC prescribing practices. **RESULTS:** Most (80%) ED directors reported always offering EC as part of sexual assault care; 66% were more likely to provide onsite EC in these situations. Only 52% identified the progestin-only regimen as the EC dispensed in their ED, and most (96%) limited provision to fewer than 120 hours after sex. Although 58% of ED directors reported ever prescribing ongoing contraception when providing EC, none had prescribed EC for future use. Written ED protocols for providing EC were more common for sexual assault care (76%) than for non-sexual assault care (14%). Directors who worked at hospitals with a sexual assault program were less likely to discuss all the recommended topics for EC counseling. **CONCLUSIONS:** The recommended standard of care for providing EC to adolescents in children's hospital EDs is not being met. Although risk of pregnancy following sexual assault and consensual unprotected sex is identical, discrepant practices emerged from this survey of pediatric ED directors. Increased education and policy initiatives within children's hospital EDs are needed to standardize EC services for adolescents in this setting.

[Sexual behavior and emergency contraception among adolescents from public schools in Pernambuco State, Brazil]

Cad Saude Publica. 2009 Mar;25(3):551-62.

[Article in Portuguese]

de Araújo MS, Costa LO.

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This study focused on knowledge and use of emergency contraception among 4,210 adolescents (14-19 years) enrolled in public schools in Pernambuco State, Brazil. Information was collected using the Global School-Based Student Health Survey, previously validated. Knowledge, frequency, and form of use of emergency contraception were investigated. Independent variables were classified as socio-demographic and those related to sexual behavior. Most adolescents reported knowing and having received information about the method, but among those who had already used it, only 22.1% had done so correctly. Adjusted regression analysis showed greater likelihood of knowledge about the method among girls (OR = 5.03; 95%CI: 1.72-14.69) and the sexually initiated (OR = 1.52; 95%CI: 1.34-1.75), while rural residents were 68% less knowledgeable. Rural residents showed 1.68 times higher odds (CI95%: 1.09-2.25) of incorrect use, while girls showed 71% lower likelihood of incorrect use. Sexual and reproductive education is necessary, especially among male and rural adolescents.

Emergency contraception--knowledge in medical students.

Indian J Med Sci. 2009 Mar;63(3):115-7.

Sharma JB, Bahadur A, Chadha S, Mehta S, Mittal S.

Exploring emergency contraception knowledge, prescription practices, and barriers to prescription for adolescents in the emergency department.

Pediatrics. 2009 Mar;123(3):765-70.

Goyal M, Zhao H, Mollen C.

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OBJECTIVE: The objective of this study was to assess the proportion of emergency medicine physicians who had prescribed emergency contraception pills to adolescents, to identify potential barriers to emergency contraception pill prescription for adolescents, and to assess physician knowledge of emergency contraception pills. **PARTICIPANTS AND METHODS:** A cross-sectional, anonymous, Internet-based survey of members of the American Academy of Pediatrics Section of Emergency Medicine was conducted. Providers were included in analysis if they were attending physicians caring for children (<22 years of age) in the emergency department setting >30% of the time. Survey questions included demographics, emergency contraception pill prescription rates for adolescents, attitudes toward emergency contraception pills for adolescents, and emergency contraception pill knowledge questions. **RESULTS:** A total of 1005 Section of Emergency Medicine members were contacted; 424 (42%) responded, and 133 did not meet inclusion criteria. Of the 291 eligible respondents, 282 had complete surveys. Eighty-five percent of the respondents stated that they had prescribed emergency contraception pills to adolescents, 71% within the previous year. Of those, 81% prescribed emergency contraception pills <5 times. The 5 most frequently cited barriers were concern for lack of follow-up (72%), time constraints (40%), lack of clinical resources (33%), discouraging regular contraceptive use (29%), and concern about birth defects (27%). Thirty-nine percent of respondents identified ≥ 5 barriers to emergency contraception pill prescriptions for adolescents. Forty-three percent incorrectly answered >50% of the questions. Physicians were more likely to report prescribing emergency contraception pills if they had answered >3 of the knowledge-based questions correctly and were less likely to report prescribing if they identified >5 barriers. **CONCLUSIONS:** Although proportion of emergency department physicians reported prescribing emergency contraception pills to adolescents, the pills were prescribed infrequently. Factors associated with nonprescription were decreased knowledge of emergency contraception pills and identifying >5 barriers. Identification of these potential barriers and education regarding emergency contraception pills may ultimately improve adolescent access to emergency contraception pills in the emergency department.

Delivery of chlamydia screening to young women requesting emergency hormonal contraception at pharmacies in Manchester, UK: a prospective study.

BMC Womens Health. 2009 Mar 26;9:7.

Brabin L, Thomas G, Hopkins M, O'Brien K, Roberts SA. Academic Unit of Obstetrics & Gynaecology, University of Manchester, Manchester, M13 0JH, UK. loretta.brabin@manchester.ac.uk

BACKGROUND: More women are requesting Emergency Hormonal Contraception (EHC) at pharmacies where screening for Chlamydia trachomatis is not routinely offered. The objective of this study was to assess the uptake of free postal chlamydia screening by women under 25 years who requested EHC at pharmacies in Manchester, UK. **METHODS:** Six Primary Care Trusts (PCTs) that had contracted with pharmacies to provide free EHC, requested the largest EHC providers (> or = 40 doses annually) to also offer these clients a coded chlamydia home testing kit. Pharmacies kept records of the ages and numbers of women who accepted or refused chlamydia kits. Women sent urine samples directly to the laboratory for testing and positive cases were notified. Audit data on EHC coverage was obtained from PCTs to assess the proportion of clients eligible for screening and to verify the uptake rate. **RESULTS:** 33 pharmacies participated. Audit data for 131 pharmacy months indicated that only 24.8% (675/2718) of women provided EHC were also offered chlamydia screening. Based on tracking forms provided by pharmacies for the whole of the study, 1348/2904 EHC clients (46.4%) who had been offered screening accepted a screening kit. 264 (17.6%) of those who accepted a kit returned a sample, of whom 24 (9.1%) were chlamydia-positive. There was an increase in chlamydia positivity with age (OR: 1.2 per year; 1.04 to 1.44; $p = 0.015$). **CONCLUSION:** Chlamydia screening for EHC pharmacy clients is warranted but failure of pharmacists to target all EHC clients represented a missed opportunity for treating a well defined high-risk group.

The effect of access to emergency contraceptive pills on women's use of highly effective contraceptives: results from a French national cohort study.

Am J Public Health. 2009 Mar;99(3):441-2. Epub 2008 Aug 13.

Moreau C, Trussell J, Michelot F, Bajos N. Office of Population Research, Princeton University, Princeton, NJ, USA. caroline.moreau@inserm.fr

We examined changes in contraceptive behaviors after emergency contraception (EC) pill use. A nationally representative cohort of 2863 French women was studied to identify 272 instances of EC pill use. In 71% of the cases, we found no changes in contraceptive practices from the time of EC pill use to 6 months later: 41% of women continued use of highly effective methods and 30% continued less effective methods. Only 8.4% switched from highly effective to less effective methods.

Accuracy of information given by Los Angeles County pharmacies about emergency contraceptives to sham patient in need.

Contraception. 2009 Mar;79(3):206-10. Epub 2008 Nov 13.

Nelson AL, Jaime CM.

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BACKGROUND: As emergency contraception (EC) becomes increasingly available without prescription, it is important that women in need be provided accurate information about its use. **STUDY DESIGN:** A telephone survey of all retail pharmacies in Los Angeles County was conducted by women posing as a 23-year-old who wanted to prevent pregnancy after an unprotected act of intercourse. **RESULTS:** One thousand four hundred sixty unduplicated pharmacies listed in the Yellow Pages 2007 were called between October 2007 and April 2008. Sixty-nine percent had EC available on site; 19% referred the caller elsewhere. The remainder said nothing could be done or hung up. Multiple calls and multiple recitations of the situation were needed in over one third of calls. Isolated incidents of inappropriate comments occurred. **CONCLUSION:** While most pharmacies provided information about EC that was consistent with labeling, barriers still exist to both accurate information and timely access to that product.

Comprehension of a prototype emergency contraception package label by female adolescents.

Contraception. 2009 Mar;79(3):199-205. Epub 2008 Nov 12.

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BACKGROUND: We evaluated female adolescents' comprehension of a prototype over-the-counter package label for an emergency contraceptive pill product. **STUDY DESIGN:** Volunteers aged 12-17 years who could read English were recruited at malls and clinics in six United States metropolitan areas. After completing a literacy assessment, subjects examined the prototype package and answered 20 questions that assessed understanding of six key concepts related to appropriate use of the product. **RESULTS:** The analysis population included 335 subjects, 54 to 59 of each year of age between 12 and 17 years. When asked what the product is used for, 264 respondents (79%) specifically indicated contraception. The six key concepts were each understood by 83-96% of subjects. In all 24 population subgroups examined, each key concept was understood by at least 72% of subjects. **CONCLUSION:** Female adolescents aged 17 years and younger understand the prototype package label well enough to enable safe and effective use without assistance from a clinician.

Emergency contraception--knowledge in medical students.

Indian J Med Sci. 2009 Mar;63(3):115-7.

Sharma JB, Bahadur A, Chadha S, Mehta S, Mittal S.

Exploring emergency contraception knowledge, prescription practices, and barriers to prescription for adolescents in the emergency department.

Pediatrics. 2009 Mar;123(3):765-70.

Goyal M, Zhao H, Mollen C. Children's Hospital of Philadelphia, Division of Emergency Medicine, 3400 Civic Center Blvd, Philadelphia PA 19104, USA. goyal@email.chop.edu

OBJECTIVE: The objective of this study was to assess the proportion of emergency medicine physicians who had prescribed emergency contraception pills to adolescents, to identify potential barriers to emergency contraception pill prescription for adolescents, and to assess physician knowledge of emergency contraception pills. **PARTICIPANTS AND METHODS:** A cross-sectional, anonymous, Internet-based survey of members of the American Academy of Pediatrics Section of Emergency Medicine was conducted. Providers were included in analysis if they were attending physicians caring for children (<22 years of age) in the emergency department setting >30% of the time. Survey questions included demographics, emergency contraception pill prescription rates for adolescents, attitudes toward emergency contraception pills for adolescents, and emergency contraception pill knowledge questions. **RESULTS:** A total of 1005 Section of Emergency Medicine members were contacted; 424 (42%) responded, and 133 did not meet inclusion criteria. Of the 291 eligible respondents, 282 had complete surveys. Eighty-five percent of the respondents stated that they had prescribed emergency contraception pills to adolescents, 71% within the previous year. Of those, 81% prescribed emergency contraception pills <5 times. The 5 most frequently cited barriers were concern for lack of follow-up (72%), time constraints (40%), lack of clinical resources (33%), discouraging regular contraceptive use (29%), and concern about birth defects (27%). Thirty-nine percent of respondents identified >=5 barriers to emergency contraception pill prescriptions for adolescents. Forty-three percent incorrectly answered >50% of the questions. Physicians were more likely to report prescribing emergency contraception pills if they had answered >3 of the knowledge-based questions correctly and were less likely to report prescribing if they identified >5 barriers. **CONCLUSIONS:** Although a large proportion of emergency department physicians reported prescribing emergency contraception pills to adolescents, the pills were prescribed infrequently. Factors associated with nonprescription were decreased knowledge of emergency contraception pills and identifying >5 barriers. Identification of these potential barriers and education regarding emergency contraception pills may ultimately improve adolescent access to emergency contraception pills in the emergency department.

The morning-after pill.

Clin Pediatr (Phila). 2009 Apr;48(3):341-2; discussion 342.

Abell S.

Adolescent access to emergency contraception: a comment on the UK context.**Eur J Contracept Reprod Health Care. 2009 Apr;14(2):120-6.**

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The provision of emergency contraception (EC) in the United Kingdom (UK) has been transformed over the past decade through advances in pharmacology and the implementation of governmental measures to reduce teenage pregnancy rates. This paper considers how these issues have developed in the current social and political context with specific reference to adolescent access to EC in the UK. It highlights the concerns caused by increased availability of EC and the tension between adolescent rights to confidential treatment and advice, and professional anxiety about encouraging secrecy or parental deception. It concludes that adolescents, whilst benefiting from increased access to EC may also face a series of challenges as a result.

Expressions of steroid receptors and Ki67 in first-trimester decidua and chorionic villi exposed to levonorgestrel used for emergency contraception.

Fertil Steril. 2009 Apr;91(4 Suppl):1420-3. Epub 2008 Aug 16.

Meng CX, Cheng LN, Lalitkumar PG, Zhang L, Zhang HJ, Gemzell-Danielsson K. Department of Woman and Child Health, Division of Obstetrics and Gynecology, Karolinska University Hospital, Karolinska Institutet, Stockholm, Sweden.

Levonorgestrel (1.5 mg) is commonly used for emergency contraception to prevent an unwanted pregnancy after an unprotected intercourse. We found that postovulatory administration of 1.5 mg of levonorgestrel to women with a subsequent or existing early pregnancy did not affect the immunohistochemical expressions of estrogen receptors (ER(alpha), ER(beta)), P receptors (PR(B),PR(A+B)), androgen receptor (AR), or proliferation index Ki67 in the first-trimester decidua and chorionic villi.

Knowledge of emergency contraception among women of childbearing age at a teaching hospital of Karachi.

J Pak Med Assoc. 2009 Apr;59(4):235-40.

Irfan F, Karim SI, Hashmi S, Ali S, Ali SA. Department of Family Medicine, Aga Khan University Hospital, Karachi, Pakistan.

OBJECTIVES: To assess knowledge and attitudes about Emergency Contraception among women of childbearing age in Karachi, Pakistan. **METHODS:** A questionnaire based survey was conducted on 400 married women, attending the family practice clinics at a teaching hospital in Karachi, Pakistan from July to December 2006. Questionnaire was administered to women at the family practice clinic-seeking level of knowledge of emergency contraception (EC) and attitudes towards its use, Ethical requirements of informed consent and confidentiality were ensured Data was entered into Epi data and analyzed in SPSS. **RESULTS:** Eighty-eight percent of women were not aware of EC. 83% were housewives. Only a small number (11.5%) ever used EC to prevent pregnancy, out of those, the correct timing of effectiveness of post-coital pill was known to only 40% of women while none of these women were aware of the existence of Intra Uterine Contraceptive Device (IUCD) insertion as an option for EC About 50% of women identified general practitioners or family medicine clinics as their main sources of knowledge about EC. Increased advertising was considered desirable by 72% while 37% considered over the counter availability of EC pill desirable and only 36% of women were uncomfortable to use EC because of religious reasons. **CONCLUSION:** EC has a potential to offer women an important option for fertility control. Lack of women's knowledge about EC use and availability may account in part for its limited use. There is a need to improve women's education about EC. The primary health care providers can play a major role in informing their patients about emergency contraception.

Adolescent comprehension of emergency contraception in New York City.**Obstet Gynecol. 2009 Apr;113(4):840-4.**

Cremer M, Holland E, Adams B, Klausner D, Nichols S, Ram RS, Alonzo TA. Department of Obstetrics and Gynecology, New York University School of Medicine, New York, New York 10016, USA. mlcremer@hotmail.com

OBJECTIVE: To estimate comprehension of the over-the-counter emergency contraception label among female adolescents aged 12 through 17 years, and to compare the results with a similar study that focused on adults. **METHODS:** Surveys were administered to female adolescents in New York City in public venues such as malls, movie theaters, and parks. Participants were asked to read the emergency contraception (levonorgestrel) label before answering survey questions. Comparisons were made in SPSS version 13.0 using chi tests of independence and Fisher exact tests for sparse data. **RESULTS:** One thousand eighty-five girls between the ages of 12 and 17 participated in the study. Overall, adolescents demonstrated high comprehension of the key points of emergency contraception: (1) that it is a method of preventing pregnancy 92% (confidence interval [CI] 91-94%); (2) that it has to be taken within the first 72 hours after unprotected intercourse 83% (CI 83-87%); (3) that if you are already pregnant emergency contraception will not be effective 87% (CI 85-89%); (4) that emergency contraception will not protect against human immunodeficiency virus (HIV)/acquired immunodeficiency syndrome (AIDS) 95% (CI 94-96%); and (5) that emergency contraception should not be used as a method of long-term birth control 85% (CI 83-87%). **CONCLUSION:** After reading the emergency contraception (levonorgestrel) label, female adolescents aged 12 to 17 understood the information necessary to use emergency contraception safely and effectively as well as their adult counterparts. **LEVEL OF EVIDENCE:** III.

Interest in intrauterine contraception among seekers of emergency contraception and pregnancy testing.

Obstet Gynecol. 2009 Apr;113(4):833-9.

Schwarz EB, Kavanaugh M, Douglas E, Dubowitz T, Creinin MD.

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OBJECTIVE: To estimate the interest in using intrauterine contraception among women and adolescent girls seeking emergency contraception or walk-in pregnancy testing. **METHODS:** We surveyed 412 women and adolescent girls who requested emergency contraception or pregnancy testing at four family planning clinics in Pittsburgh, Pennsylvania. The 41-item survey assessed knowledge of, attitudes toward, and interest in using an intrauterine device (IUD). Data were analyzed using chi2 and Fisher exact tests and multivariable logistic regression methods. **RESULTS:** The response rate was 85%. Twelve percent (95% confidence interval [CI] 9-15) of women and adolescent girls surveyed expressed interest in same-day insertion of an IUD, and 22% (95% CI 18-26) wanted more information about IUDs. Interest in same-day IUD insertion increased with higher education level, prior unwanted pregnancy, and experience with barriers to use of contraception. **CONCLUSION:** Same-day IUD insertion may be a reasonable way to increase the use of highly-effective contraception among women and adolescent girls seeking emergency contraception or walk-in pregnancy testing. **LEVEL OF EVIDENCE:** II.

Pharmacy students' knowledge, attitudes, and behaviors regarding emergency contraception**Am J Pharm Educ. 2009 Apr 7;73(2):26.****Ragland D, West D.**

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OBJECTIVES: To determine pharmacy students' knowledge, attitudes, and behaviors regarding emergency contraception. **METHODS:** A cross-sectional survey was conducted among a convenience sample of students prior to a regular class period. The 16-item survey instrument included both multiple-choice and true/false questions to assess knowledge and Likert-type scale questions regarding attitudes and behaviors. Frequency and descriptive statistics were calculated for all variables. **RESULTS:** Three hundred one pharmacy students were surveyed. Eighty-seven percent knew that Plan B had been approved by the Food and Drug Administration (FDA) for nonprescription use, yet 33% believed that it worked by disrupting a newly implanted ovum. On a scale from 1-5 on which 5 = strongly agree, the mean item score was 1.5 for whether nonprescription emergency contraception should be available without counseling by a pharmacist, yet only 26.7% believed they were competent instructing patients on the use of emergency contraception. **CONCLUSIONS:** Additional education is needed to prepare pharmacy students to provide informed pharmaceutical care to patients seeking emergency contraception, especially given the passage of legislation making the pharmacy the point of access for some emergency contraception products.

Developments and challenges in emergency contraception

Best Pract Res Clin Obstet Gynaecol. 2009 Apr;23(2):221-31. Epub 2009 Feb 10.

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Emergency contraception (EC) methods, available in oral and intra-uterine forms, seek to prevent pregnancy after unprotected intercourse or contraceptive failure. Levonorgestrel EC is more effective and has fewer side effects than the previously used combined oral hormonal method; the Yuzpe regimen. In recent years, levonorgestrel has increased in use, and has become available over the counter in pharmacies in many countries. Compared with oral methods, the copper intra-uterine device offers greater protection against unplanned pregnancy but requires a clinical consultation. The much hoped for potential of EC methods to reduce unintended pregnancy is yet to be demonstrated at population level.

Young women's perceptions of pregnancy risk and use of emergency contraception: findings from a qualitative study.

Contraception. 2009 Apr;79(4):310-5. Epub 2008 Dec 11.

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BACKGROUND: Advance provision of emergency contraception (EC) has increased use but not impacted on pregnancy or abortion rates. Here we describe young women's EC use and experiences of unprotected sex to explore why this difference occurs. **METHODS:** In-depth interviews with twenty 20-year-old women from eastern Scotland. **RESULTS:** The majority (16) had used EC; 10 reported some experience of unprotected sex. EC use followed contraceptive failure and unexpected or unplanned, but not frequent, unprotected sex. Acknowledging the need for EC requires recognition of pregnancy risk. Those reporting frequent unprotected sex misperceived their pregnancy risk and did not use EC. This group was from socially disadvantaged backgrounds, and all became pregnant. **CONCLUSIONS:** EC remains an important "backup" contraceptive and should continue to be widely available. With high levels of unprotected sex, nonuse of EC and unintended pregnancies, further efforts are required to improve the sexual and reproductive health outcomes of disadvantaged young women.

Usage of emergency contraception between medical related and non-medical related students.

Ir Med J. 2009 Apr;102(4):104-8.

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Teenagers and young adults have the most risk of unplanned pregnancy, due to lack of awareness to see a family planning provider after unprotected sexual intercourse. In addition, nearly one in five physicians is reluctant to provide information regarding Emergency Contraception (EC) to women and this may contribute to their lack of awareness. This study was conducted to assess the knowledge, attitudes and practices regarding the use of EC between medical related students compared to non-medical related students. Data collection was done using questionnaires distributed among students in University College Cork (UCC). 93% of medically related students were aware of EC compared to only 73.5% of non-medically related students. Medical related students also were more aware about the mechanism of action and detailed knowledge of EC compared to the non-medical students. This study has proven that medically related students have more detailed knowledge regarding EC compared to non-medical related students. However, there was no significant difference noted regarding the attitude and practice between the two groups.

The emergency contraceptive pill rescheduled: a focus group study of women's knowledge, attitudes and experiences.

J Fam Plann Reprod Health Care. 2009 Apr;35(2):87-91.

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BACKGROUND AND METHODOLOGY: The levonorgestrel-containing emergency contraceptive pill (ECP), amongst other strategies, has the potential to assist in reducing unintended pregnancy and abortion rates. Since the rescheduling of the ECP in January 2004 to over-the-counter (OTC) status from pharmacies in Australia, there is little information about Australian women's ECP knowledge, attitudes or practice. The aim of the study was to explore Australian women's knowledge of, attitudes towards and experiences of using the ECP, particularly since it has been available OTC. This paper reports a qualitative study using six focus groups, which were conducted between February and June 2007 in four Australian states with 29 women aged 16-29 years. **RESULTS:** Participants had a lack of specific knowledge about the ECP. Most were positive about the ECP being available OTC, however some expressed concerns about younger women misusing it. Women's experiences obtaining the ECP from the pharmacy were both positive and negative. Most women said they would use the ECP again if required and would recommend it to a friend. Pharmacists were seen as important suppliers of the ECP but women felt it was not their role to provide advice about contraception or sexually transmitted infections. **DISCUSSION AND CONCLUSIONS:** The findings from this study confirm views from other studies, which suggest that although women have some concerns in relation to OTC supply of the ECP, they believe that the deregulation of the ECP is a positive step. The data also suggest that women need to be provided with more information and education about the ECP.

Emergency contraception services for adolescents: a National Survey of Children's Hospital Emergency Department Directors.

J Pediatr Adolesc Gynecol. 2009 Apr;22(2):111-9.

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STUDY OBJECTIVE: To assess emergency contraception (EC) counseling and prescribing practices of children's hospital emergency department (ED) directors and the use of EC protocols in these settings. **DESIGN:** Cross-sectional study of children's hospital ED directors responding to a 15-minute 44-item semi-structured survey during telephone interviews. **PARTICIPANTS:** 50 of 96 eligible directors of children's hospital EDs in the United States. **MAIN OUTCOME MEASURES:** EC protocols, EC counseling processes, EC prescribing practices. **RESULTS:** Most (80%) ED directors reported always offering EC as part of sexual assault care; 66% were more likely to provide onsite EC in these situations. Only 52% identified the progestin-only regimen as the EC dispensed in their ED, and most (96%) limited provision to fewer than 120 hours after sex. Although 58% of ED directors reported ever prescribing ongoing contraception when providing EC, none had prescribed EC for future use. Written ED protocols for providing EC were more common for sexual assault care (76%) than for non-sexual assault care (14%). Directors who worked at hospitals with a sexual assault program were less likely to discuss all the recommended topics for EC counseling. **CONCLUSIONS:** The recommended standard of care for providing EC to adolescents in children's hospital EDs is not being met. Although risk of pregnancy following sexual assault and consensual unprotected sex is identical, discrepant practices emerged from this survey of pediatric ED directors. Increased education and policy initiatives within children's hospital EDs are needed to standardize EC services for adolescents in this setting.

Editorial fair play and emergency contraception.

South Med J. 2009 May;102(5):551.

Comment on: South Med J. 2009 Jan;102(1):17-20. South Med J. 2009 Jan;102(1):5-7.

Kauffman RP.

Emergency contraception, efficacy and public health impact.**Curr Opin Obstet Gynecol. 2009 May 30. [Epub ahead of print]**

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PURPOSE OF REVIEW: Emergency contraception in the past two decades had been proven to be effective and well tolerated. Counseling and advance provision and prescription of emergency contraception have been embraced by professional organizations in practice guidelines for its potential to reduce the number of unintended pregnancies and abortions. Has emergency contraception lived up to that promise? **RECENT FINDINGS:** Mifepristone (not available in the USA) is the agent of choice. Emergency contraception has not reduced the number of unintended pregnancies. Acceptance by healthcare providers and the public has not been optimal, and multiple financial and healthcare system barriers to use emergency contraception continue to exist. The public health impact of emergency contraception has been disappointing. **SUMMARY:** Although emergency contraception may continue to be an important component of contraceptive practice, only increased access to more effective methods of contraception will change unintended pregnancy rates. The use of mifepristone for emergency contraception in the USA must be considered.

[Emergency contraception (morning-after pill)]

MMW Fortschr Med. 2009 May 28;151(22):40.

[Article in German]

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Plan B for 17-year olds.

Med Lett Drugs Ther. 2009 May 18;51(1312):40.

[No authors listed]

Characteristics of women who sought emergency contraception at a university-based women's health clinic.

Am J Obstet Gynecol. 2009 May 7. [Epub ahead of print]

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OBJECTIVE: The purpose of this study was to identify unique characteristics for seeking emergency contraception (EC) among sexually active unmarried women who attended a university-based women's health clinic (WHC). **STUDY DESIGN:** Three hundred nine consecutive women who attended the women's health clinic for 3 months of the 2006 spring semester completed an anonymous self-administered questionnaire. Fisher exact and the Student t tests were used to assess bivariate associations, and step-wise regression was used to determine independent associations. **RESULTS:** Women who requested EC were more likely to have previously used EC ($P < .001$), to have had unprotected sex in the past 6 months ($P < .001$), to have experienced an unintended pregnancy in the past year ($P = .009$), and to perceive the need for EC use in the next 3 months ($P < .001$) but were less likely to use hormonal contraception or an intrauterine device ($P < .001$). **CONCLUSION:** Our findings support the need for increased education that would include the use of and access to effective primary contraceptive methods in conjunction with EC awareness.

Compliance with mandated emergency contraception in New Mexico emergency departments.

J Womens Health (Larchmt). 2009 May;18(5):619-23.

Espey E, Ogburn T, Leeman L, Buchen E, Angeli E, Qualls C.

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OBJECTIVE: New Mexico enacted a law in 2003 requiring that emergency departments (EDs) offer emergency contraception (EC) to survivors of sexual assault and that both doses be administered in the ED. This investigation sought to examine practices and knowledge of ED providers about EC in the setting of sexual assault. **METHODS:** We visited hospitals in New Mexico from July 2005 to December 2005 and administered an 18-item questionnaire to three providers—a physician, a nurse, and a clerk—in the ED. The questionnaire included items related to characteristics of the hospital, knowledge of providers about EC and the law, and ED practices relevant to EC for sexual assault survivors as well as for women who had consensual unprotected intercourse. **RESULTS:** Surveys were completed at 33 of 38 hospitals (87%). Overall, 52% of respondents reported that EC was routinely offered to sexual assault survivors, and 33% reported that both doses were administered in the ED. Forty-one percent of RNs, MDs, and clerks reported that EC was offered to sexual assault survivors who were minors regardless of age. Overall, 64% of respondents knew that EC may prevent pregnancy up to 72 hours after unprotected intercourse, and only 12% of respondents reported awareness of any requirements to offer EC to sexual assault survivors. Respondents reported that physicians in the ED more often routinely offered EC to sexual assault survivors (52%) than to women who requested it after consensual sex (20%). Thirty-three percent of respondents indicated parental consent was necessary for minors in the setting of sexual assault, although there is no requirement for parental notification in New Mexico. **CONCLUSIONS:** EDs in New Mexico are not universally complying with the law. Better dissemination of the law and education about EC could improve care of sexual assault survivors in New Mexico.

[Providing emergency contraceptive pills in pharmacies]**Laeknabladid. 2009 May;95(5):343-7.**

[Article in Icelandic]

Heidarsdóttir ML, Almarsdóttir AB, Geirsson RT.

Lyfjafraedideild HÍ, Haga, Reykjavik.

OBJECTIVE: Use of the levonorgestrel emergency contraception (EC) pill has become more common after being made formally available in pharmacies without prescription. It was investigated how pharmacists in the capital area of Reykjavik supply EC to clients. **MATERIAL AND METHODS:** A total of 46 pharmacists of all working ages and both genders were asked to answer a questionnaire concerning how they sold the emergency contraception pill over the counter (84.8% reply rate). **RESULTS:** Four of five used <5 minutes to discuss emergency contraception with the client, but almost all enquired about time from intercourse. While only 20% asked about the woman's health, most considered concomitant drug use and potential interaction with levonorgestrel. Only about 50% pointed out that EC did not protect against sexually transmitted disease, (3/4) pointed out the need for permanent contraceptive use, 95% asked about previous EC use, but only 30% would provide EC again in the same menstrual cycle. One half of the pharmacists sold EC to men/teenage boys and wished to assist them with taking responsibility, while the others only sold the drug to the woman. Of those prepared to give the drug to the men, 55% asked to speak over the telephone with the woman to ensure correct prescription and information. Nearly a third would never or rarely provide consultation in private. **CONCLUSIONS:** Pharmacists agree mostly about main points in supplying EC, but not as regards provision to women through their male partners. Provisions for consultation can be improved.

Emergency contraception and physicians' rights of conscience: a review of current legal standards in Wisconsin.

WMJ. 2009 May;108(3):156-60.

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Recent legislation in Wisconsin mandating provision of emergency contraception to victims of sexual assault may create a conflict of conscience for some health care professionals. Although disputes exist over the exact mechanism of action of emergency contraception, those professionals who espouse a particularly strict stance may be reluctant to dispense the medication for fear that it could prevent a fertilized embryo from implanting in the uterus. While no objection of conscience clause was written into the new law, Wisconsin law has a long tradition of recognizing rights of conscience in matters of religious conflict. This legal tradition both at statutory and common law levels is summarized with application to the recent emergency contraception mandate. A case is made for a potential legal defense should a health care professional abstain from dispensing emergency contraception.

Rights to emergency contraception.**Int J Gynaecol Obstet. 2009 Jun 17. [Epub ahead of print]**

Weisberg E, Fraser IS.

Emergency contraception (EC) provides women with a safe means of preventing pregnancy following unprotected sexual intercourse or potential contraceptive failure, and is accepted as a legitimate method of fertility control. The right of women to access EC, along with other contraceptive methods, needs to be affirmed. The consequences of unintended pregnancy are serious, imposing appreciable burdens on children, women, men, and families. Every child has the right to be a wanted child and not enter this world because its mother was denied access to EC. For maximum effectiveness, barriers to access must be removed. It is essential that EC pills are available over-the-counter with no minimum age for access. There is a tension between the rights of women to access EC without medical or legal intervention and the rights of providers who have a conscientious objection to provision on religious or moral grounds. The principles of autonomy, non-maleficence, and beneficence all weigh in favor of the rights of a woman faced with the possibility of an unintended pregnancy to unrestricted access to EC against providers whose religious views are opposed to this.

Knowledge, practices, and attitudes regarding emergency contraception among students at a university in Ghana.

Int J Gynaecol Obstet. 2009 Jun;105(3):206-9. Epub 2009 Feb 20.

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OBJECTIVES: To investigate the knowledge, practices, and attitudes among students at a university in Ghana regarding emergency contraception (EC). **METHODS:** An anonymous, self-administered, 39-item questionnaire was sent to 3200 students. The sample size was stratified and 2292 students were randomly selected. **RESULTS:** Of the 71.6% of students who responded, 51.4% had heard of EC. Among those, 19.4% thought EC consisted of contraceptive pills, 19.1% of "morning-after pills," and 12.8% of an intrauterine device. Only 4.2% had ever used EC but 73.9% wished it were provided on campus. Of all the respondents, 90.9% called for the establishment of a reproductive health counseling center on campus. **CONCLUSION:** Student knowledge and use of EC were poor, and there is urgent need for reproductive counseling and EC services on campus.

Emergency contraception: knowledge and attitudes of family physicians of a teaching hospital, Karachi, Pakistan.

J Health Popul Nutr. 2009 Jun;27(3):339-44.

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This study was conducted to assess the knowledge of family medicine providers and their attitudes towards emergency contraception in a teaching hospital in Karachi, Pakistan. A 21-item questionnaire containing the demographic profile of respondents and questions concerning knowledge of and attitudes towards emergency contraception was distributed among participants. In total, 45 interviews were conducted, with a response rate of 100%, with faculty physicians (33%), residents (27%), medical officers (40%), 36% male and 64% female physicians; of them, the majority (64%) were married. Although the large majority (71%) of the respondents reported considerable familiarity with emergency contraception, objective assessment revealed deficiencies in their knowledge. About 38% of the participants incorrectly chose menstrual irregularity as the most common side-effect of progestin-only emergency contraception pills, and only 33% answered that emergency contraception was not an abortifacient while 42% were unsure. Forty percent of the physicians prescribed emergency contraception in the past. The large majority (71%) of the physicians were familiar with emergency contraception, yet deficiencies in knowledge inaccuracies were identified. Barriers to its use were identified as 'it will promote promiscuity' (31%), religious/ethical reasons (27%), liability (40%), teratogenicity (44%), and inexperience (40%). Overall attitudes regarding emergency contraception were positive; however, most (82%) physicians were unsatisfied with their current knowledge of emergency contraception, and there was a discrepancy between perceptions of physicians and actual knowledge. Interventions providing education to family physicians regarding emergency contraception is strongly recommended.

Barriers to adolescents' getting emergency contraception through pharmacy access in California: differences by language and region.

Perspect Sex Reprod Health. 2009 Jun;41(2):110-8.

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CONTEXT: In California, emergency contraception is available without a prescription to females younger than 18 through pharmacy access. Timely access to the method is critical to reduce the rate of unintended pregnancy among adolescents, particularly Latinas. **METHODS:** In 2005-2006, researchers posing as English- and Spanish-speaking females-who said they either were 15 and had had unprotected intercourse last night or were 18 and had had unprotected sex four days ago-called 115 pharmacy-access pharmacies in California. Each pharmacy received one call using each scenario; a call was considered successful if the caller was told she could come in to obtain the method. Chi-square tests were used to assess differences between subgroups. In-depth interviews with 22 providers and pharmacists were also conducted, and emergent themes were identified. **RESULTS:** Thirty-six percent of all calls were successful. Spanish speakers were less successful than English speakers (24% vs. 48%), and callers to rural pharmacies were less successful than callers to urban ones (27% vs. 44%). Although rural pharmacies were more likely to offer Spanish-language services, Spanish-speaking callers to these pharmacies were the least successful of all callers (17%). Spanish speakers were also less successful than English speakers when calling urban pharmacies (30% vs. 57%). Interviews suggested that little cooperation existed between pharmacists and clinicians and that dispensing the method at clinics was a favorable option for adolescents. **CONCLUSIONS:** Adolescents face significant barriers to obtaining emergency contraception, but the expansion of Spanish-language services at pharmacies and greater collaboration between providers and pharmacists could improve access.

Emergency contraception: have we come full circle?

Contraception. 2009 Jul;80(1):1-3. Epub 2009 May 9.

Coeytaux F, Wells ES, Westley E.

Emergency contraceptive use among 5677 women seeking abortion in Shanghai, China.**Hum Reprod. 2009 Jul;24(7):1612-8. Epub 2009 Apr 9.**

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BACKGROUND: The increasing use of emergency contraceptive pills (ECPs) does not seem to reduce the number of induced abortions as would be expected, indicating that women use ECPs might also be a strong factor affecting their final efficacy. The study aimed to understand the attitude towards, and use of, ECPs among women seeking an abortion. **METHODS:** A cohort study was conducted via face-to-face questionnaire interview among women seeking abortion in Shanghai, China. Logistic regression analysis and chi(2) test were performed for statistical analysis. **RESULTS:** The response rate was 99.3%. Among all 5677 respondents aged 15-48 years, 48.8% were ECP ever-users. Compared with ever-users, ECP never-users were less likely to have used contraception during the present cycle of conception ($P < 0.001$). In response to the question on the main reason for non-use of contraception, ECP never-users were less likely to realize the risk of pregnancy and had less contraceptive knowledge ($P < 0.001$). Among 2773 ECP ever-users, 72.7% did not use ECPs to prevent the current pregnancy, mainly due to lack of awareness of pregnancy risk. Out of 757 women, 437 (57.7%) repeated unprotected sex after taking ECPs during the current pregnant cycle. A pharmacy was the preferred source to access ECPs, for the reason of convenience. **CONCLUSIONS:** Non-use of ECPs was correlated to less knowledge on fertility and a lower rate of contraceptive use among abortion-seeking women. Women of reproductive age should have access to ECPs and receive sufficient information on their use. Health care providers and pharmacists should also be trained in contraceptive counselling, including ECPs.

Pregnancy outcome after levonorgestrel-only emergency contraception failure: a prospective cohort study.

Hum Reprod. 2009 Jul;24(7):1605-11. Epub 2009 Mar 31.

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BACKGROUND: Levonorgestrel (LNG), as a dedicated emergency contraception (EC) product, has been available over-the-counter in China for 10 years. Until now, only a small number of deliveries after LNG-EC failure have been documented. **METHODS:** This study was a prospective comparative cohort study. A group of 332 pregnant women who had used LNG-EC during the conception cycle was recruited, and matched to a group of 332 pregnant women without the exposure to LNG. Congenital malformations, perinatal complications and delivery circumstances were investigated in this study. **RESULTS:** There were 31 pregnant women in the study group and 28 in the comparison group miscarried within 14 weeks of gestation. In the study and comparison groups, four malformations were found in each group. In the study group, both birthweight (3416 versus 3345 g, $P = 0.040$) and the sex ratio of birth (boys/girls, 1.14 versus 0.90, $P = 0.153$) were higher than in the comparison group. There were no statistically significant differences in the incidence of miscarriage or malformation or in the neonatal outcome between the two groups. **CONCLUSIONS:** There was no association between the use of LNG-EC pills and the risk of major congenital malformations, pregnancy complications or any other adverse pregnancy outcomes in our study.