**Original Research Article in *Contraception*—Author Version**

**Commentary**

# Renewed Interest in Intrauterine Contraception in the United States: Evidence and Explanation

David Hubacher[a], Lawrence B. Finer[b], Eve Espey[c]

[a]Senior Epidemiologist, Family Health International

[b]Director of Domestic Research, Guttmacher Institute

[c]Professor, Ob-Gyn, University of New Mexico

Received 25 August 2010; revised 3 September 2010; accepted 7 September 2010

doi: 10.1016/j.contraception.2010.09.004

Abstract is available from *Contraception* through Science Direct here.

**Corresponding author**:

David Hubacher
Family Health International
PO Box 13950
Research Triangle Park, NC 27709 USA
Phone: 919-544-7040 x223
Fax: 919-544-7261
E-mail address: dhubacher@fhi.org

# Renewed Interest in Intrauterine Contraception in the United States: Evidence and Explanation

## Introduction

For nearly 50 years, American women have used the intrauterine device (IUD) for contraception [1, 2]. Many products of different shapes and materials have come and gone [3, 4]. Today, U.S. women can use the Copper T380A (CuT380A) IUD, approved by the U.S. Food and Drug Administration in 1984 and first marketed in 1988, and a levonorgestrel-releasing intrauterine system (LNG IUS) that was approved in December 2000 and first marketed in 2001. Both products are safe and easy to use, and provide highly effective, reversible contraception approved for five years (LNG IUS) or 10 years (copper IUD) of continuous protection from pregnancy.

New findings from the 2006–08 National Survey of Family Growth (NSFG) show that approximately 2.1 million American women use an IUD [5], which is the highest level of use since the early 1980s. Use reached a low point in 1995, when only 1.3% of women using contraception were using an IUD. Since then, prevalence has increased consistently, to 2.0% in 2002 and 5.5% in 2006–08. The rise and fall in IUD use in the United States in the late 20th century (Figure 1) reflects a complex series of well-documented events [6]; here we focus on the IUD renaissance over the past 15 years.

**Who Uses IUDs and Changes Over Time**

The prevalence of IUD use in different subgroups of women has changed considerably over the last 15 years (Table 1). In the youngest age group (15–19), IUD use as a percentage of total contraceptive use increased from virtually nil in 1995 and 2002 to 3.6% in 2006–08. In the 20–24 age group, use in 2006–08 was almost 6%, which is similar to older age groups. These use patterns suggest that an entire generation of women did not consider the IUD for their contraceptive needs. Today, however, younger women appear more likely to give the method due consideration.

Parity continues to account for major differences in IUD use. In the 2006–08 NSFG, 11% of women with two children are using an IUD, whereas prevalence is lower among women with three or more children, likely due to use of sterilization (data not shown). Women who want more children in the future use IUDs at rates similar to women who do not want more children. In 2002, lower-income women used IUDs at a higher rate than higher-income women; the latest NSFG shows that this difference has disappeared. Women of Hispanic origin continue to have the highest level of IUD use in the United States.

**Important Events Since 1995**

Since 1995, many events and factors may have contributed to the rise in use of IUDs in the United States. Below we list several.

*Product-related factors*

- The FDA approved the LNG IUS in 2000, and marketing began in 2001.
- The FDA approved a CuT380A label change in 2005, removing a section titled "recommended patient profile" and deleting language that stated, "T380A is recommended for women who have had at least one child…"
- New medical research has demonstrated higher safety with today's modern devices [7-11].
- Unlike events in the 1970s [12], no widespread medico-legal controversies or negative media attention have affected these methods.

*Provider-related factors*

- A greater number of clinicians are trained and competent in insertion and removal.
- U.S. providers have become more aware of the higher level of IUD use in other countries [13-15].

- More U.S. providers recognize the noncontraceptive benefits of IUDs, such as the LNG IUS's role in treating heavy menstrual bleeding and as an alternative to hysterectomy [16-19].
- Evidence and expert opinion suggest that increased voluntary uptake of intrauterine contraception, which is highly efficacious and requires minimal user involvement, may help alleviate the national problem of unintended pregnancy and high rates of abortion [20, 21].
- U.S.-based organizations (e.g., the Association of Reproductive Health Professionals and the Society of Family Planning) have assisted in the dissemination of evidence-based information on the safety and efficacy of IUDs.

*Patient-related factors*

- Direct-to-consumer marketing of both the LNG IUS and the CuT380A has likely increased demand.
- In-migration from Mexico, where use and acceptability of the IUD is high, has created additional demand.
- The ARCH Foundation (Access and Resources in Contraceptive Health) provides financial assistance to low-income women who want to use the LNG IUS (this not-for-profit foundation is funded by the manufacturer of the LNG IUS).
- As the number of users has increased, positive word of mouth may play an increasing role in women's receptivity to the method.

In addition, several developments have affected the environment for family planning and contraception in general.

- Ob/gyn and family medicine residencies (i.e., the Ryan residency program) have increased interest and training in family planning.
- Family planning fellowships for post-residency training have also been established at many universities.
- Many states have passed contraceptive equity laws that require insurance plans to cover contraceptive methods, including intrauterine contraception [22]. Equity laws are particularly relevant for IUDs because the products have high initial costs.
- Many states have Medicaid family planning expansion programs ("waivers") that increase the income cutoff below which women can receive benefits, including access to all FDA-approved contraceptives [23].

**Practice Guidelines**

The American College of Obstetricians and Gynecologists (ACOG) has published IUD practice guidelines since 1968. These guidelines have national stature, are consulted frequently by providers, and are a bellwether of opinion and practice. The 1987 and 1992 bulletins [24] clearly reflect the nadir of popularity of the IUD; their language reflects negative attitudes about and low usage of IUDs characteristic of those decades. Both bulletins begin with a statement about product liability and its impact on the IUD. In addition, the bulletins use restrictive language to

describe the ideal candidate for an IUD. The method is described as "especially suited" for older, parous, monogamous women who are not ready for sterilization, have no history of PID or ectopic pregnancy and are not candidates for the "slightly more effective" oral contraceptive pill.

In contrast, the 2005 bulletin [25] was written during the time of resurgence of positive attitudes about IUDs and increasing recognition of their safety and efficacy. A growing focus on the public health aspects of family planning emphasizes critical determinants of true contraceptive efficacy: the difference between perfect use and typical use of methods and the importance of continuation rates. For IUDs, there is little difference between perfect and typical use, and the method can be used for an extended period of time.

Instead of negative language of earlier practice guidelines, the 2005 ACOG bulletin begins with the statement, "Intrauterine devices (IUDs) offer safe, effective, long-term contraception and should be considered for all women who seek a reliable, reversible contraception that is effective before coitus." With this bulletin, ACOG endorsed less restrictive criteria for defining appropriate IUD candidates. In addition, ACOG published a Committee Opinion in 2007, entitled "Intrauterine Device and Adolescents," that suggests IUDs may be an appropriate method in selected nulliparous and multiparous adolescents [26].

The above opinions are echoed by both the World Health Organization's and the U.S. Centers for Disease Control and Prevention's contraceptive use eligibility criteria, which support the use of IUDs among broad populations, including women who are under 18 or nulliparous [27, 28].

## Conclusions

In recent years, intrauterine contraception has become an increasingly important option for pregnancy prevention in the United States; today, more than two million women use it. Many factors have contributed to renewed interest in intrauterine contraception, including modernization of products and improved attitudes, training, access, and awareness.

In comparison to the U.S. prevalence of 5.5%, many regions of the world rely more heavily on intrauterine contraception, including Western Europe (15%), Southern Europe (9%) and Northern Europe (12%) [29]. In contrast, American women rely more heavily on sterilization than European women. While patterns of contraceptive use vary across the globe, no single pattern is optimal. However, the lesson from Europe is that intrauterine contraception can play an important role in reproductive health due to its broad appeal, acceptability and recognized high safety/benefit profile.

Unintended pregnancy in the United States is a stubborn problem. Approximately 48% of women experiencing unintended pregnancies report that they used contraception in the month that the pregnancy occurred [30]. The decision to use any method is a personal one, and depends on many factors. However, intrauterine contraception is in the top tier of contraceptive effectiveness [31] and provides better protection from unintended pregnancy than many alternatives. In the United States, where most men and women initiate sexual activity in their teens and do not plan to have children until their mid- to late twenties, the fertile period before childbearing can be as long as that after childbearing. In this context, universal access to the full

range of options and a true choice of family planning methods, including intrauterine contraception, is critical to reducing unintended pregnancy and improving reproductive health in the U.S.

## References


[1] Report on Intrauterine Contraceptive Devices. United States Food and Drug Administration. Washington, DC: United States Government Printing Office; 1968.

[2] Tietze C. Contraception with intrauterine devices. 1959-1966. Am J Obstet Gynecol 1966;96:1043-54.

[3] Hubacher D, Cheng D. Intrauterine devices and reproductive health: American women in feast and famine. Contraception 2004;69:437-46.

[4] Sivin I, Batar I. State-of-the-art of non-hormonal methods of contraception: III. Intrauterine devices. Eur J Contracept Reprod Health Care 2010;15:96-112.

[5] Mosher W, Jones J. Use of contraception in the United States: 1982-2008. [June 1, 2010]; Available from: <http://www.cdc.gov/nchs/data/series/sr_23/sr23_029.pdf>

[6] Boonstra H, Duran V, Northington Gamble V, Blumenthal P, Dominguez L, Pies C. The "boom and bust phenomenon": the hopes, dreams, and broken promises of the contraceptive revolution. Contraception 2000;61:9-25.

[7] Grimes DA. Intrauterine device and upper-genital-tract infection. Lancet 2000;356:1013-9.

[8] Farley TM, Rosenberg MJ, Rowe PJ, Chen JH, Meirik O. Intrauterine devices and pelvic inflammatory disease: an international perspective. Lancet 1992;339:785-8.

[9] Hubacher D, Lara-Ricalde R, Taylor DJ, Guerra-Infante F, Guzman-Rodriguez R. Use of copper intrauterine devices and the risk of tubal infertility among nulligravid women. N Engl J Med 2001;345:561-7.

[10] Mohllajee AP, Curtis KM, Peterson HB. Does insertion and use of an intrauterine device increase the risk of pelvic inflammatory disease among women with sexually transmitted infection? A systematic review. Contraception 2006;73:145-53.

[11] Kulier R, Helmerhorst FM, O'Brien P, Usher-Patel M, d'Arcangues C. Copper containing, framed intra-uterine devices for contraception. Cochrane Database Syst Rev 2006;3:CD005347.

[12] Jones EF, Beniger JR, Westoff CF. Pill and IUD discontinuation in the United States, 1970-1975: the influence of the media. Fam Plann Perspect 1980;12:293-300.

[13] Penney G, Brechin S, de Souza A, Bankowska U, Belfield T, Gormley M, et al. FFPRHC Guidance (January 2004). The copper intrauterine device as long-term contraception. J Fam Plann Reprod Health Care 2004;30:29-41.

[14] FFPRHC Guidance (April 2004). The levonorgestrel-releasing intrauterine system (LNG-IUS) in contraception and reproductive health. J Fam Plann Reprod Health Care 2004;30:99-108; quiz 9.

[15] Weir E. Preventing pregnancy: a fresh look at the IUD. CMAJ 2003;169:585.

[16] Chin J, Konje JC, Hickey M. Levonorgestrel intrauterine system for endometrial protection in women with breast cancer on adjuvant tamoxifen. Cochrane Database Syst Rev 2009:CD007245.

[17] Lethaby A, Irvine G, Cameron I. Cyclical progestogens for heavy menstrual bleeding. Cochrane Database Syst Rev 2008:CD001016.

[18] Pakarinen P, Luukkainen T. Treatment of menorrhagia with an LNG-IUS. Contraception 2007;75:S118-22.

[19] Hubacher D, Grimes DA. Noncontraceptive health benefits of intrauterine devices: a systematic review. Obstet Gynecol Surv 2002;57:120-8.

[20] Goodman S, Hendlish SK, Benedict C, Reeves MF, Pera-Floyd M, Foster-Rosales A. Increasing intrauterine contraception use by reducing barriers to post-abortal and interval insertion. Contraception 2008;78:136-42.

[21] Trussell J, Wynn LL. Reducing unintended pregnancy in the United States. Contraception 2008;77:1-5.

[22] Guttmacher Institute. Insurance coverage of contraceptives. 2010 [cited 2010 August 23]; Available from: http://www.guttmacher.org/statecenter/spibs/spib_ICC.pdf.

[23] Guttmacher Institute. State Medicaid family planning eligibility expansion. 2010 [cited 2010 August 23]; Available from: http://www.guttmacher.org/statecenter/spibs/spib_SMFPE.pdf.

[24] ACOG. The intrauterine device. ACOG technical bulletin number 164--February 1992 (replaces no. 104, May 1987). Int J Gynaecol Obstet 1993;41:189-93.

[25] ACOG practice bulletin. Clinical management guidelines for obstetrician-gynecologists. Number 59, January 2005. Intrauterine device. Obstet Gynecol 2005;105:223-32.

[26] ACOG Committee Opinion No. 392, December 2007. Intrauterine device and adolescents. Obstet Gynecol 2007;110:1493-5.

[27] Farr S, Folger SG, Paulen M, Tepper N, Whiteman M, Zapata L, et al. U S. Medical Eligibility Criteria for Contraceptive Use, 2010: adapted from the World Health Organization Medical Eligibility Criteria for Contraceptive Use, 4th edition. MMWR Recomm Rep 2010;59:1-86.

[28] World Health Organization Medical eligibility criteria for contraceptive use. 3rd ed. Geneva:WHO; 2004. [cited 2010]; Available from: http://whqlibdoc.who.int/publications/2004/9241562668.pdf.

[29] World Contraceptive Use 2009. United Nations; Available from: http://www.un.org/esa/population/publications/contraceptive2009/contraceptive2009.htm.

[30] Finer LB, Henshaw SK. Disparities in rates of unintended pregnancy in the United States, 1994 and 2001. Perspect Sex Reprod Health 2006;38:90-6.

[31] Steiner MJ, Trussell J, Johnson S. Communicating contraceptive effectiveness: an updated counseling chart. Am J Obstet Gynecol 2007;197:118.

**Figure 1. IUD use in the United States, 1965–2008**

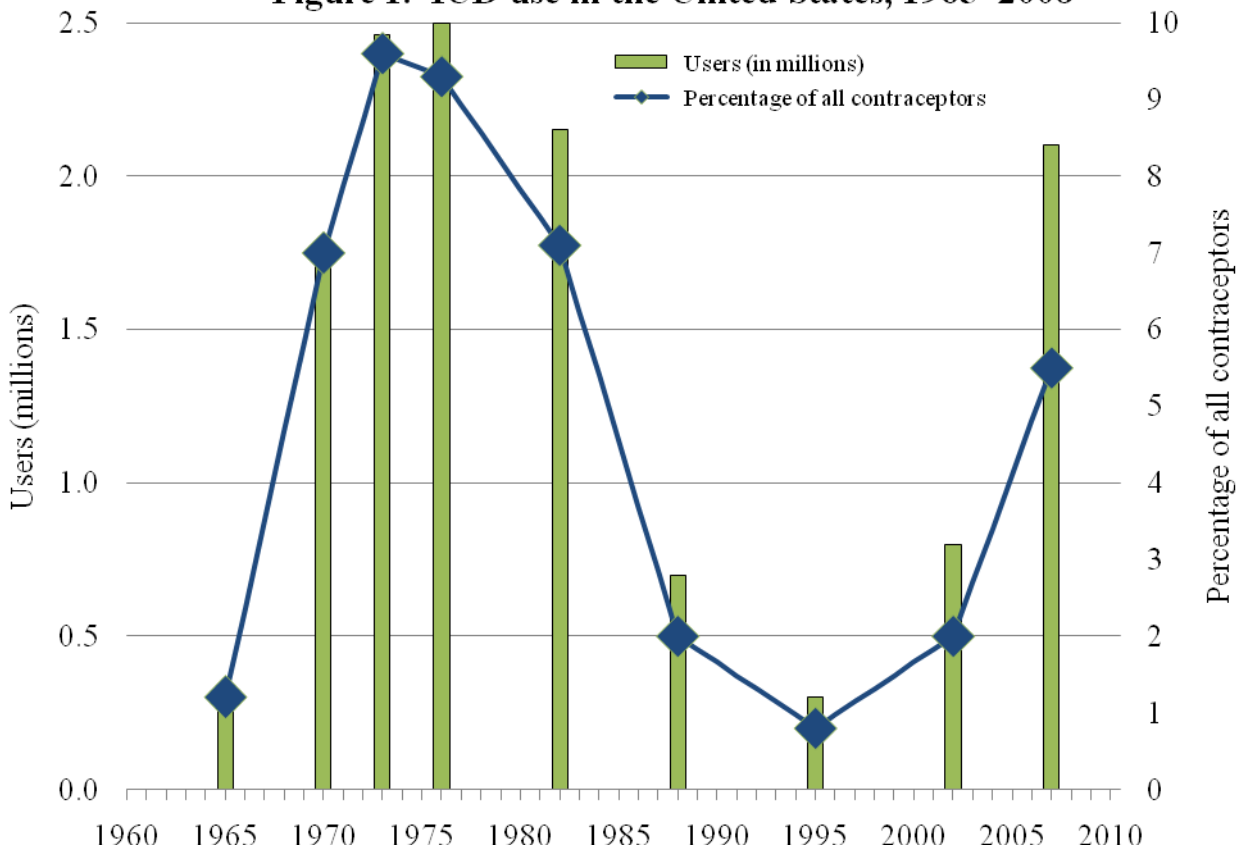

**Table 1**
**Percent of U.S. women in each subgroup using an IUD, among current users of contraception in that subgroup, by year of survey***

| Characteristic | 1995 | 2002 | 2006–08 |
|---|---|---|---|
| All contraceptive users | 0.8 | 2.0 | 5.5 |
| **Age** | | | |
| 15–19 | 0.0 | 0.3 | 3.6 |
| 20–24 | 0.3 | 1.8 | 5.9 |
| 25–29 | 0.8 | 3.7 | 6.2 |
| 30–34 | 0.9 | 3.1 | 6.6 |
| 35–39 | 0.9 | 1.5 | 5.8 |
| 40–44 | 1.3 | 1.1 | 4.2 |
| **Education** | | | |
| Less than a high school diploma | 0.6 | 1.9 | 4.6 |
| High school diploma | 0.6 | 2.3 | 5.1 |
| Some college, no degree | 0.7 | 1.9 | 6.1 |
| College degree or higher | 1.4 | 2.0 | 5.7 |
| **Parity** | | | |
| 0 | 0.4 | 0.5 | 0.3 |
| 1 | 1.2 | 2.4 | 8.4 |
| 2 | 1.2 | 3.3 | 10.9 |
| 3+ | 0.5 | 2.3 | 4.2 |
| **Want more children** | | | |
| Yes | 0.2 | 2.0 | 5.7 |
| No | 0.8 | 2.1 | 5.0 |
| **Religion*** | | | |
| Protestant | 0.6 | 1.6 | 4.7 |
| Catholic | 0.7 | 2.9 | 5.9 |
| **Income as % of poverty level** | | | |
| <=149% | 0.9 | 3.1 | 5.8 |
| 150-299% | 0.8 | 2.0 | 5.0 |
| >=300% | 0.8 | 1.4 | 5.6 |
| **Race** | | | |
| Hispanic | 1.5 | 5.3 | 8.3 |
| Non-Hispanic white | 0.7 | 1.5 | 5.1 |
| Non-Hispanic black | 0.8 | 1.4 | 5.1 |
| **Marital status** | | | |
| Married | 0.9 | 2.6 | 6.7 |
| Cohabiting | 0.9 | 1.7 | 6.6 |
| Never married | 0.5 | 0.5 | 2.7 |
| Formerly married | 0.8 | 2.9 | 3.5 |

* Data are from three rounds of the National Survey of Family Growth