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Did increasing use of highly effective contraception contribute to declining abortions in Iowa?☆

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Abstract

Background: Between 2006 and 2008, Iowa increased access to family planning services through a Medicaid expansion and a privately funded initiative. During this same time, Iowa expanded access to abortion through telemedicine provision of medical abortion. Despite increased access to abortion services, abortions in Iowa have declined. This study assessed whether increased provision of long-acting reversible contraception (LARC) may have contributed to the abortion decline.
Study design: We analyzed abortion data from Iowa vital statistics and LARC use data from 14 family planning agencies' records (N=544,248) for the years 2005 to 2012. Mixed-effects logistic regression analyses assessed whether changes in the percentage of LARC users were associated with subsequent reductions in abortion across the state.
Results: From 2005 to 2012, the number of family planning clients using LARC increased from 539 to 8603 (less than 1% to 15%); the number of resident abortions decreased from 5198 to 3887 (8.7 per 1000 women aged 15–44 to 6.7). There were reduced odds of abortion (adjusted odds ratio, 0.96; 95% confidence interval: 0.94–0.97) with increased LARC use.
Conclusions: Declines in abortion followed increases in LARC use in Iowa.

Keywords: Abortion; Long-acting reversible contraception; Iowa; Family planning

1. Introduction

The United States has observed a steady decline in abortions since the early 1990s, reaching 16.9 abortions per 1000 women aged 15–44 years in 2011, the lowest level since the procedure became legal in 1973 [1–3]. A number of factors may explain this decrease, including changes in demographics, desired family size, access to contraceptive and abortion services, and economic conditions.

Some researchers have suggested that the abortion decline may be due to use of more efficacious methods such as long-acting reversible contraception (LARC) [1,3]. LARC methods include the intrauterine contraceptive device (IUD) and the single-rod contraceptive implant [4]. There has been widespread interest in LARC methods because of their safety and suitability for nearly all women, including adolescents, and their potential to reduce unintended pregnancies [5–8].

Emerging evidence suggests that LARC use may be associated with reductions in unintended pregnancies and abortions. The Contraceptive CHOICE project, a prospective cohort study conducted in the St. Louis area, provided contraception at no cost to nearly 10,000 women, with a particular emphasis on promoting LARC use [9,10]. Results from this study showed that the rates of abortion in St. Louis were markedly lower than in comparable regions following the introduction of no-cost LARC [9]. However, because this study was an observational study limited to a small geographic area, it is unknown whether results are generalizable to other settings. More recently, a study in Colorado found that a statewide intervention to increase LARC access among low-income women corresponded to a decline in abortions [11]. Research isolating the effects of LARC use on abortion is limited.

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Declines in access to abortion services, due to either legal restrictions or declines in the number of facilities, could also play a role in decreasing the number of abortions in the United States. However, most legislative restrictions were implemented long after the abortion rate began to decline in the early 1990s, and thus, any real impact of these policy changes is yet to be seen [12,13]. As researchers study the effects of recent legislative restrictions on women's access to abortion services, it will be important to understand the independent contributions of other factors, such as changes in the use of effective contraceptive methods that may also impact the abortion rate.

In this study, we investigated whether changes in LARC use over time were followed by reductions in abortions between 2005 and 2012 in one Midwestern state, Iowa. Like other states in the Midwest, Iowa has a relatively low and declining abortion rate [3]. This trend coincides with a decline in all live births, including teen births [14]. We use family planning visit and vital statistics data to examine whether baseline changes in LARC use led to subsequent reductions in the number of abortions within each of Iowa's 26 Induced Termination of Pregnancy (ITOP) regions. This longitudinal analysis offers a new contribution to the literature by considering the temporality of LARC use and abortion, a prerequisite to establishing causation. To do so, we assess changes within Iowa's 26 ITOP regions over time while controlling for baseline and other known confounders in a real-world setting. We hypothesized that larger regional increases in LARC use would be associated with fewer abortions.

2. Materials and methods

2.1. Study setting and context

From 2005 to 2012, Iowa presents a unique setting and time period to test the association between LARC use and abortion. In contrast to many other US states that restricted access to abortion during our study period, access to abortion care expanded in Iowa [3]. Since 2008, women in Iowa can obtain medical abortion through telemedicine provision. By 2010, this service was available in 15 facilities throughout the state. All facilities offering surgical abortions prior to the introduction of telemedicine abortion continued to offer this procedure after telemedicine was introduced. While the overall abortion rate declined in Iowa during the 2 years after telemedicine services were introduced, women living in rural areas of the state were more likely to obtain an abortion — especially early medical abortion [15]. The introduction of telemedicine abortion resulted in an overall increase in the number of abortion facilities in Iowa, from 9 in 2005 to 18 in 2011 [3]. As a result, the abortion decline in Iowa cannot be attributed to abortion restrictions or a reduction in abortion facilities, making Iowa an ideal place to test the association between LARC use and abortion.

During the study period, access to contraception expanded for low-income women via two important efforts. In 2006, Iowa expanded its income eligibility requirements so that women at or below 200% of the Federal Poverty Guidelines (FPG) were eligible for Medicaid-funded family planning services. At this time, approximately 160,000 Iowa women were in need of publicly funded family planning services [16]. Furthermore, from 2007 to 2013, a privately funded initiative, the Iowa Initiative to Reduce Unintended Pregnancies, was launched with the aim of reducing unintended pregnancies through increased funding for Title X and other family planning agencies serving low-income women in the state [17]. In 2012, 81% of Title X patients in Iowa were at or below 250% of FPG [18]. This initiative also focused on increasing LARC use by funding family planning agency efforts to train clinicians and staff in both LARC insertions and eligible populations, improve providers' skills and comfort levels providing contraception, expand operating hours and locations, subsidize LARC devices, market services and increase community awareness about LARC.

2.2. Measures

All measures were collected at the level of region and year (2005–2012) which served as the unit of analysis. Iowa has 26 ITOP regions, each the size of approximately four counties. In 2012, the number of women in each region ranged from 6680 to 93,803 women aged 15–44. Iowa ITOP regions are defined by the Iowa Department of Public Health (IDPH) Vital Statistics reports for the years 2005–2012 [14].

2.2.1. Abortion

Our outcome of interest was abortion. Data on abortions among women aged 15–44 in each region and year were obtained from the IDPH Vital Statistics reports [19]. Health care providers who provide abortion services in Iowa are mandated to report each termination to the health department within 30 days. All abortions are reported by the patient's place of residence, not the place of occurrence. Abortions among out-of-state residents were not included in this analysis.

2.2.2. LARC use

The primary independent variable was *change in the percentage of LARC users since 2005* among all agencies funded by the Iowa Initiative to Reduce Unintended Pregnancies. The Iowa Initiative funded all Title X agencies in the State as well as some family planning agencies that do not receive Title X funding. Eight years (2005–2012) of Iowa family planning visit data was obtained from the two organizations which administer Title X family planning services in Iowa: the IDPH and the Family Planning Council of Iowa (FPCI). Additional data were obtained from Planned Parenthood of the Heartland (PPH), which operates family planning clinics with and without Title X funding. All received Iowa Initiative funding. IDPH visit information for eight Title-X-funded family planning agencies (including 45 service sites) was derived from the Iowa Clinic Visit Record form available from Ahlers & Associates, which provides data management services for Title X grantees. PPH visit