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Trends in Contraceptive Use, Type, and Distribution Following Implementation of the Affordable Care Act

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Trends in Contraceptive Use, Type, and Distribution Following
Implementation of the Affordable Care Act

Frank A. Catrone

Wright State University

April, 2016

Acknowledgements

They say it takes a village. I don't think they were referring to completion of a Master's Degree, but I would like to acknowledge my village because I would not have finished without each and every one of them.

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Abstract

Background: Over half of all births in the United States are the result of unintended pregnancies. Nearly one half of those women are using contraception incorrectly, and the rest are not using it at all. A major barrier to the use of highly effective methods of contraception is cost. One of the major goals of The Patient Protection and Affordable Care Act (ACA) was to make highly effective contraceptives available to all women at no cost.

Objective: To examine the changes in utilization and methods of contraception since the ACA was effected in 2012.

Methods: Comparisons were made on summary data of contraception use from the National Survey of Family Growth (NSFG). Three time period (2002, 2006-2010, 2011-2013) were compared for changes in utilization and methods chosen. Data were analyzed by age, race, and education as detailed in the NSFG.

Results: Overall utilization of contraceptives remained unchanged at 62% of reproductive aged women (15-44 years) and across the age, race and educational attainment. Contraceptive method of choice has changed, favoring long-acting reversible contraceptive (LARC) methods: IUD use increased from 2% to 10.3% overall and was the only method to increase across all variables.

Conclusions: These early data show the ACA has had a small impact on contraceptive choice, yet the trend is in a positive direction toward the most effective methods. Unfortunately, Black women, who have the highest rate of unintended pregnancy, are still being left behind in utilization of contraception.

Keywords: utilization, contraception, access, NSFG, IUD

Trends in Contraceptive Use, Type, and Distribution Following Implementation of the
Affordable Care Act

The Patient Protection and Affordable Care Act, popularly known as The Affordable Care Act (ACA) was passed by Congress and signed into law by President Barack Obama on March 23, 2010 (Senate and House of Representatives of the United States, 2010). Following a number of legal challenges, the Supreme Court rendered a final decision to uphold the health care law on June 28, 2012 (Edquist et al., 2012). There are ten sections of the law, known as titles. Title I is “Quality, Affordable Healthcare for all Americans.” This title prescribes coverage without cost-sharing for “evidence-based items or services that have in effect a rating of ‘A’ or ‘B’ in the current recommendations of the United States Preventive Services Task Force” (Public Law 111–148, p. 13). This includes 95 separate items ranging from Abdominal Aortic Aneurysm Screening to Youth Violence Counseling. For women, paragraph four states: “with respect to women, such additional preventive care and screenings not described in paragraph (1) as provided for in comprehensive guidelines supported by the Health Resources and Services Administration for purposes of this paragraph” (Public Law 111–148, p. 13). This includes well-woman visits, screening for gestational diabetes, Human Papillomavirus (HPV) testing, counseling for Sexually Transmitted Infections (STIs), counseling and screening for Human Immunodeficiency Virus (HIV), contraceptive methods and counseling, breastfeeding support, supplies and counseling, and screening and counseling for interpersonal and domestic violence. This paper specifically focuses on the contraceptive method section of the ACA and what changes in type and distribution, if any, have occurred in women’s choice of contraceptive since inception of the ACA in 2012.

Passage of the ACA, including coverage without cost-sharing (co-pays and/or deductibles paid by insured before insurance pays) for contraceptives, is a watershed moment in U.S. healthcare history and an opportunity to make the most effective methods of contraception available to all women, and thus reduce the rate of unintended pregnancy that hasn't changed in over 30 years. Unintended pregnancy and the associated personal and societal burdens have continued into the 21st century. Fifty percent of pregnancies are unintended. Healthy People 2010, and 2020 have both included goals of reducing the unintended pregnancy rate but it does not change (Centers for Disease Control and Prevention [CDC], 2002, 2016). Multiple methods of contraception that are nearly 100% effective without patient intervention are available, yet the unintended pregnancy rate remains stable at 50% (CDC, 2015a).

Purpose Statement

The purpose of this paper was to examine whether or not the Affordable Care Act resulted in greater numbers of women using effective methods of contraception in its first three years post-implementation (2012-2015).

Review of Literature

Issues Caused by Lack of Access to Affordable Contraception

Nearly one half of all pregnancies in the U.S. are unintended (CDC, 2015a). The cost of these pregnancies is approximately \$12 billion per year including the cost of the birth (\$6.1 billion) and infant care (\$6 billion) (Thomas & Monea, 2011). In addition to the monetary cost, there are numerous societal costs incurred by unintended pregnancy. These exact a toll on families and society, but are difficult to monetize. These costs can include mental health issues, unstable relationships for the mother as well as children later in life, and physical abuse. In addition, women with unintended pregnancies are more likely to have abortions (approximately

40%) and little or no prenatal care (Guttmacher Institute, 2015). The highest rate of unintended pregnancies occurs in the 15 to 19 year old age cohort, which can drive young women to drop out of school. Data show that only 40% of teen mothers finish high school, and less than 2% of women who have a child before age 18 finish college by age 30 (Shuger, 2012). Women who use contraception correctly only account for 5% of unplanned pregnancy, while 52% of unplanned pregnancies are to women using no form of contraception, and 43% of the pregnancies are to women who use contraception inconsistently (Kaye, Gootman, Ng, & Finley, 2014). Benefits to society of contraception include increases in the educational attainment of communities and women, more planned pregnancies leading to healthier children, and fewer abortions (Kaye et al., 2014).

Poor maternal and infant health outcomes. Mothers who plan their pregnancies are healthier, and thus have healthier babies, resulting in lower rates of low birth weight babies, preterm birth, birth defects and infant mortality (Kaye et al., 2014). Reasons for this include better preconception and prenatal care, drinking and smoking cessation, and overall healthier lifestyle. Data from the Centers for Disease Control and Prevention (CDC) indicate that babies from planned pregnancies were 18% more likely to be breastfed than those from unplanned pregnancies. Additionally, post-partum depression rates nearly double for unplanned pregnancies (Kaye et al., 2014).

Increased number of abortions. Induced abortion occurs in 48% of pregnancies in unmarried women, and 40% of all unintended pregnancies end with an induced abortion (Birgisson, Zhao, Secura, Madden, & Peipert, 2015). In a recent study, 33% of women undergoing abortion reported that they were unable to use their chosen method of contraception due to cost and access barriers (Kaye et al., 2014). Washington University's Contraceptive

CHOICE Project (St. Louis, Missouri, USA) showed that when women are given access to highly effective forms of contraception (Long-Acting Reversible Contraception [LARCs]), rates of abortion can be reduced by as much as 50% (Birgisson et al., 2015).

Increase in school dropout rate of adolescent mothers. Many childbearing adolescent mothers fail to complete their high school education: the most recent estimate for high school graduation in this group (2012) is less than two percent (Barnet, Arroyo, Devoe, & Duggan, 2004; Shuger, 2012). A study by the U.S. Census Bureau estimated lifetime earnings of individuals with varying degrees of education. According to Day and Newburger (2002), a woman who graduates high school would be expected to earn approximately \$1 million over her lifetime. Not completing high school would reduce those earnings by \$300,000 or 30%. The inability to pursue post-secondary education due to unintended pregnancy has a cost as well. If the woman completed high school and a bachelor's degree, her earnings would balloon to \$1.6 million or 225% of her dropout earnings (Day & Newburger, 2002).

Featured Goal of the Affordable Care Act: Improved Access to Women's Health Services

Just prior to passage of the ACA, 62% of women aged 15 to 44 years were using some method of contraception and 38% were not. Of the women utilizing contraception, 26.6% were using female sterilization, 10% male sterilization, 27.5% "The Pill", 7.2% other hormonal methods, 5.6% IUD, and 23.3% other non-hormonal methods including condoms, abstinence and withdrawal (Jones, Mosher, & Daniels, 2012). There are a number of traditional barriers to obtaining effective contraception that the ACA sought to address including cost and choice.

Cost as a barrier. A major barrier to contraceptive access before the ACA was cost. Cost of contraceptives varied by method, brand of method, insurer, employer, and pharmacy. Some coverage plans restricted options through a formulary, while others forced patients to

obtain their method through a mail-order pharmacy or pay the full cost. Some plans didn't cover the contraceptive cost until after a deductible was met, and then coverage was only at a percentage of the cost, while others did not cover certain methods at all.

As shown in Figure 1, Strategic Goal 1 of the ACA is to "Strengthen Healthcare." Objective C is to emphasize primary and preventive care, linked with community prevention services. This includes guaranteeing access to women's preventive services with no cost-sharing.



Figure 1. Objectives of strategic goal one of the ACA.

Source: Retrieved from <http://www.hhs.gov/about/strategic-plan/strategic-goal-1/index.html>

Barriers to specific methods of contraception. In a well-documented ranking of the effectiveness of contraceptive methods, LARCs and Sterilization are generally accepted as the most effective (CDC, n.d.) (See Figure 2). Both the American College of Obstetrics and Gynecology (ACOG) and the American Academy of Pediatrics (AAP) have made formal statements recommending LARCs as methods that should be used first, not after the first pregnancy, as often happens (Committee on Adolescent Health Care, 2012; Committee on Adolescence, 2014). However, prior to the ACA, a woman could have insurance but still not be

able to get the most effective forms of contraception. Some plans just did not include LARCs as a “covered benefit.” Some plans would only cover generic pills, so things like the monthly vaginal ring would not be covered. Many plans imposed a deductible that could put an expensive LARC out of reach for someone with a low-paying job.

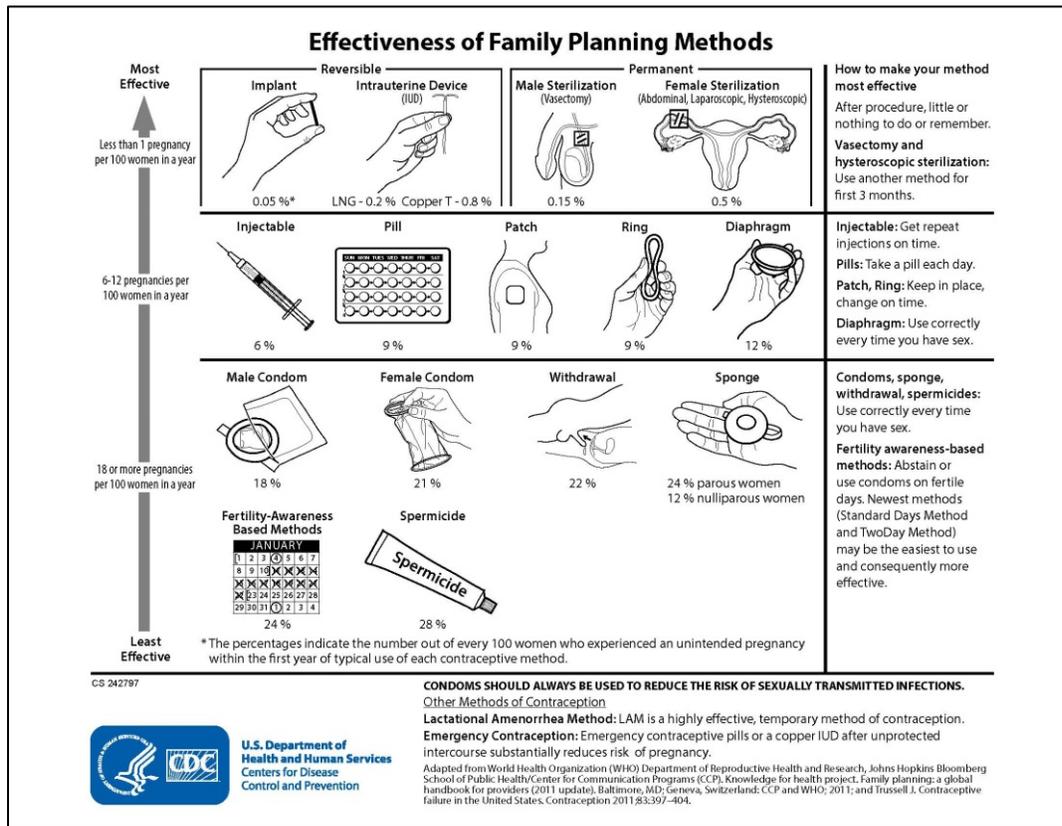


Figure 2. Effectiveness of family planning methods (CDC, n.d.). Adapted from World Health Organization.

The ACA stated that “Plans and issuers must cover without cost sharing at least one form of contraception in each of the methods (currently 18) that the FDA has identified for women in its current Birth Control Guide. This coverage must also include the clinical services, including patient education and counseling, needed for provision of the contraceptive method” (Department of Labor, Department of Health and Human Services, 2015, p. 4).

Given the recent introduction of the ACA and its specific ways to counteract barriers to contraceptive access for more American women, this study was conducted to determine if there have been changes in the prevalence of contraceptive use and patterns.

Methods

To examine the impact of the ACA on contraceptive use, comparisons were made on summary data from the National Survey of Family Growth (NSFG) (CDC, 2015b). The NSFG is a nationally representative survey conducted by the National Center for Health Statistics (NCHS) that provides information on family life, marriage, divorce, infertility, pregnancy, use of contraceptives, and men's and women's health. Per communication with Kim Daniels of CDC NCHS NSFG on May 4, 2016 details of the NSFG timing are as follows:

“Before 2006 the NSFG was a periodic survey with a goal of releasing data files periodically. Starting in 2006 the survey became continuous (interviewing is ongoing except for small breaks when needed such as awarding a new contract that resulted in a break in interviewing from June 2010 to September 2011) with the goal of releasing files more frequently. A file was released after the first two years of continuous interviewing for 2006-2008, but that file was replaced with the later cumulative 2006-2010 file. That approach wasn't ideal so we moved to releasing data files every 2 years and we include weights that allow for pooling of multiple files together.”

The data years used in this project were chosen to help illustrate a trend in utilization prior to and after implementation of the ACA. Table 1 shows the number of women sampled in each wave of NSFG data collection.

Table 1. *National Survey of Family Growth Sampling Input*

Year(s)	Number of Women in Sample	Notes
2002	7,643	One year, hired and trained 200 surveyors to complete.
2006-2010	12,279	Interviews conducted 48 weeks per year for four years.
2011-2013	5,601	First data released December 2014, surveys continued through 2015.

Variables

A number of variables from the NSFG were utilized in this review, including calculated rates of contraceptive utilization (Table 2) and demographic data (Table 3). The variables in Table 2 were utilized in an effort to identify overall changes in utilization, as well as changes in utilization by various subgroups. The analysis by subgroup may highlight areas of over- or underutilization affected by the ACA. The entire dataset included women in the 15 to 44 year old age range.

Table 2. *Calculated NSFG Variables of Interest*

Percentage of women from the entire population, ages 15-44, that are utilizing contraceptives, and which method they are using.
Percentage of women, by age group, utilizing contraceptives, and which method they are using.
Percentage of women, by level of education obtained, utilizing contraceptives, and which method they are using.
Percentage of women by major race that are utilizing contraceptives, and which method they are using.

Demographic variables of interest in the NSFG survey are listed in Table 3. Per Isaedmarie Febo-Vazquez of the CDC, the age group of 15 to 44 years was used in the NSFG because it includes over 99.7% of all births (personal communication, April 19, 2016). The

subgroups within age, (15 to 24 years, 25 to 34 years and 35-44 years) evenly break up the age range into ten year increments.

Table 3. *Description of Demographic Variables of Interest in the NSFG*

Variable Name	Description	Can help identify:
Age of Contraceptors	15-24 years 25-34 years 35-44 years	Issues of physical access, cost access and length of need for contraceptives may be highlighted.
Race	Hispanic White Black	Includes race. Other races included in NSFG but not consistently across years.
Level of Education	No H.S. ¹ . diploma H.S. diploma or GED ² Some college Bachelor's degree or higher	Does education correlate with choice of method?

Note: 1. H.S. = High School; 2. GED = General Educational Diploma

Parsing the data by level of education attained may highlight differences in choice due to ability to pay for more effective methods. It may also confirm or dispel a common perception that increased education is associated with increased level of reproductive planning.

Data by race may show differences in culture, access, or an increase in ability to get better methods due to the law. Hispanic, White and Black are included for analysis.

There were six major methods of contraception examined in this review (Table 4). They include female sterilization, male sterilization, pill, IUD, other hormonal methods and other non-hormonal methods.

Table 4: *Methods of Contraception Included in the Survey*

Hormonal Methods	Non-Hormonal Methods
Pill IUD Implant Lunelle Patch Ring Depo-Provera Emergency Contraception (i.e. Plan B)	Female Sterilization Male Sterilization Copper IUD Withdrawal Condom Periodic abstinence-calendar rhythm Periodic abstinence - natural family planning Diaphragm Female condom or vaginal pouch Foam Cervical cap Sponge Suppository or insert Jelly or cream Other methods (See Appendix A for descriptions of each)

Study Design

This study included univariate comparisons of the summary data from three separate waves of NSFG surveys conducted over a period of ten years (2002, 2006–2010, 2010–2013). Graphs were chosen as the output format due to the ease of interpreting the data. Statistical significance is shown for the method of choice data and was calculated based on standard error data available in the NSFG. The utilization data did not contain standard error data, so no statistical significance could be calculated.

The following comparisons were made:

1. Percentage of women utilizing contraceptives and which method they chose across the three time frames. This data was then broken down by age group 15-24 year olds, 25-34 year olds and 35-44 year olds, and which methods they chose across the timeframes.
2. Percentage of women by level of education obtained utilizing contraceptives, and which methods they chose across the timeframes.
3. Percentage of women by major Race utilizing contraceptives, and which methods they chose across the timeframes.

Results

Overall Rates of Contraception

Figure 3 shows that in total, 61.9% (± 0.8), 62.2% (± 0.8) and 61.7% (± 1.1) of women in the United States were using contraceptives during 2002, 2006-2010 and 2011-2013 respectively. This indicates that there has not been a statistically significant change in the use of contraceptives over this time period. In the surveys, women indicated that they were not using contraceptives because they were actively trying to become pregnant, were currently pregnant or postpartum, had never had intercourse, were not currently in a relationship, were sterile, or were having intercourse and not contracepting.

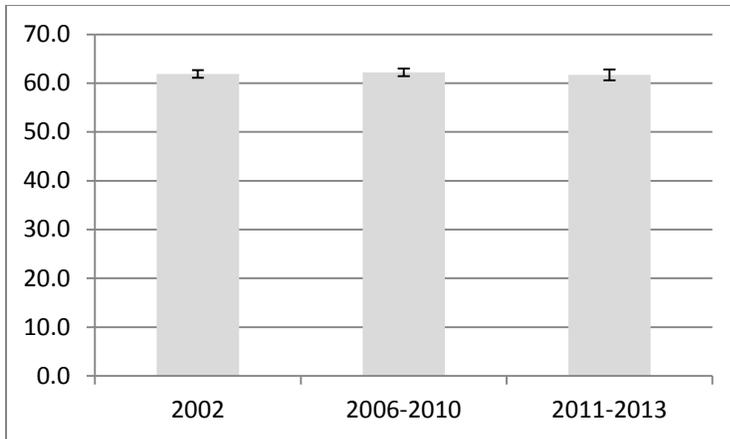


Figure 3. Total contraceptive users, ages 15 to 44 years, National Survey of Family Growth (CDC, 2002, 2006-2010 and 2011-2013).

As shown in Figure 4, breaking down the total number of women using contraceptives by method chosen does reveal changes in the contraceptive types being used. While the overlapping standard errors on the graph indicate that there is no statistically significant change in the number of women or men using sterilization for their contraception, there does appear to be a slight decrease in use of pill and non-hormonal methods and an increase in the more effective, longer-acting hormonal methods and IUDs. Pill use showed the greatest reduction, from 30.6% in 2002 to 25.9% in 2011-2013. IUDs showed the greatest increase, going from 2% in 2002 to 10.3% in 2011-2013.

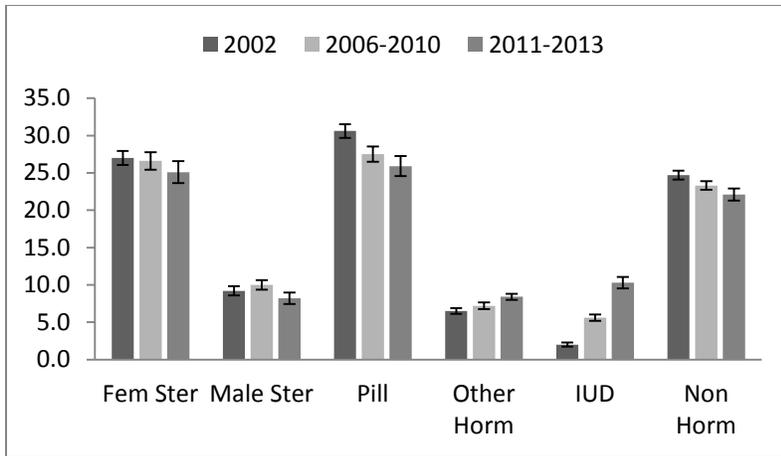


Figure 4. Total contraceptors by method used, National Survey of Family Growth (CDC, 2002, 2006-2010 and 2011-2013). Notes: Fem Ster (Female Sterilization), Male Ster (Male Sterilization), Other Horm (Other Hormonal Method), Non Horm (Non-Hormonal Method).

Use of Contraceptives by Age Group

Total contraceptors in the 15 to 24 year-age range (Figure 5) changed from 46.1% in 2002 to 47.4% in 2011-2013. These numbers were calculated from various summary reports, so it is impossible to calculate the standard error or statistical significance of the change. In the absence of statistical analysis, a 1.3% change on a 46.1% baseline over 10 years is not a large change.

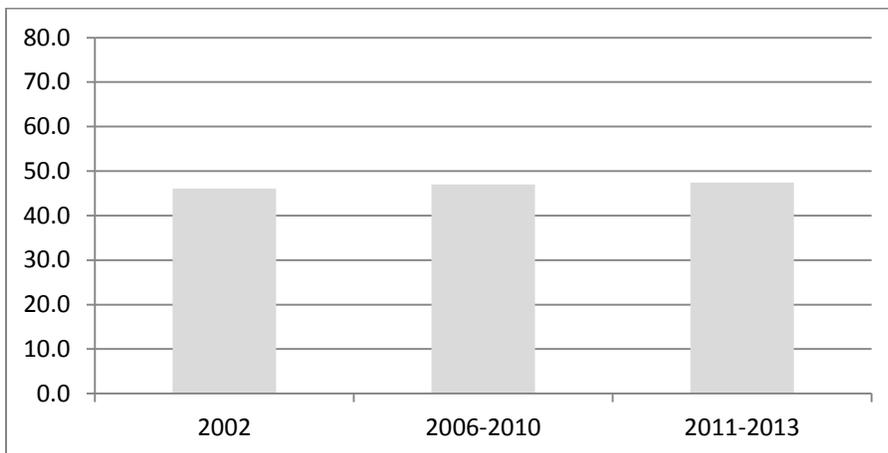


Figure 5. Total contraceptors, ages 15 to 24 years, National Survey of Family Growth (CDC, 2002, 2006-2010 and 2011-2013).

In the 15 to 24 year age group (Figure 6), sterilization of either sex was not a major form of contraception (prevalence of under 3% in all surveys). Pill usage declined from 52.5% (± 2.2) to 47.3% (± 2.6). Both other hormonal methods and IUD usage increased significantly, while non-hormonal methods decreased significantly.

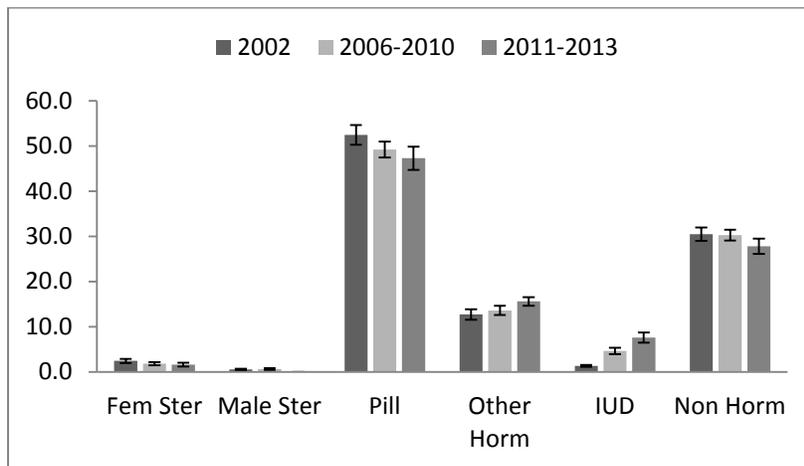


Figure 6. Contraceptors aged 15-24 years and method used, National Survey of Family Growth (CDC, 2002, 2006-2010 and 2011-2013). Notes: Fem Ster (Female Sterilization), Male Ster (Male Sterilization), Other Horm (Other Hormonal Method), Non Horm (Non-Hormonal Method).

Total contraceptors in the 25-34 year old group (Figure 7) went from 68.6% in 2002 to 67.3% in the 2006-2010 survey to 67.4% in the 2011-2013 survey. This represents a 1.7% decrease in the number of women using contraceptives. The accumulation of data from several surveys does not allow for statistical analysis but the data does show a slight decrease from 2002 to 2006-2010, then a leveling off from 2006-2010 to 2011-2013.

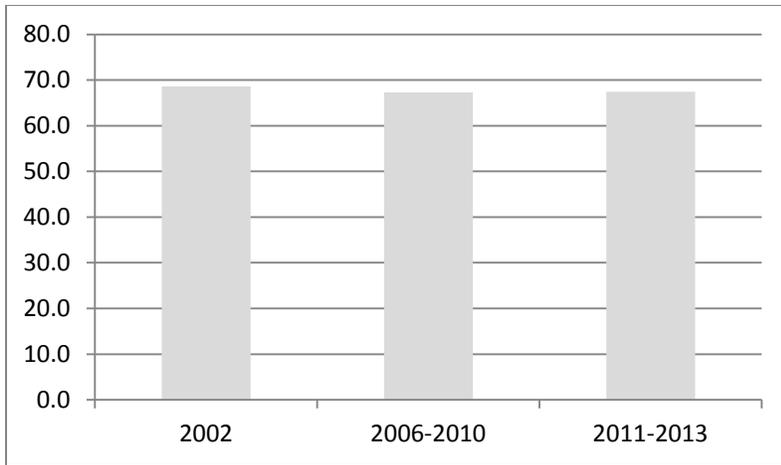


Figure 7. Total contraceptors, ages 25 to 34 years, National Survey of Family Growth (CDC, 2002, 2006-2010 and 2011-2013).

Figure 8 highlights the lack of change in the use of female sterilization, other hormonal methods or non-hormonal methods over the three observation periods. There was, however, significant change in the use of male sterilization, the pill, and IUD. Male sterilization dropped from 6.8% to 6.7% to 3.8% over the decade, the pill went from 34.3% to 29.2% to 25%, while IUD utilization increased from 3.4% to 7.2% to 15.1%.

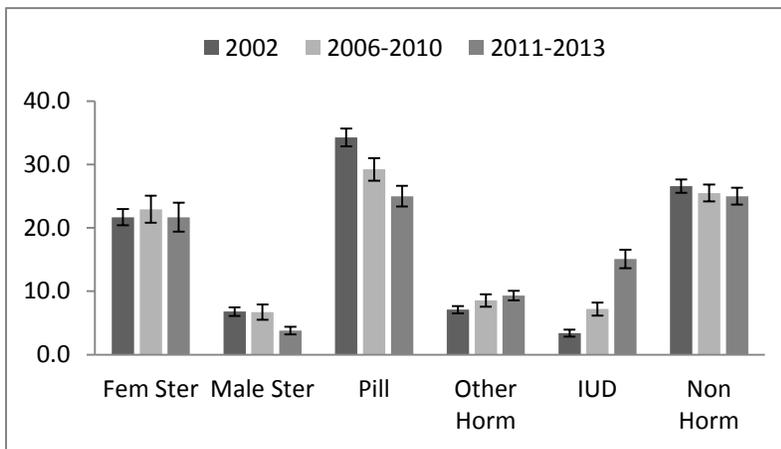


Figure 8. Contraceptors aged 25 to 34 years and method used, National Survey of Family Growth (CDC, 2002, 2006-2010 and 2011-2013). Notes: Fem Ster (Female Sterilization), Male

Ster (Male Sterilization), Other Horm (Other Hormonal Method), Non Horm (Non-Hormonal Method).

There was some variability in the percentage of 35-44 year old women using contraception (Figure 9), but it was more likely due to changes in sampling methodology rather than actual utilization. The data show that utilization went from 70% to 74.9% to 70% over the decade covered by the surveys.

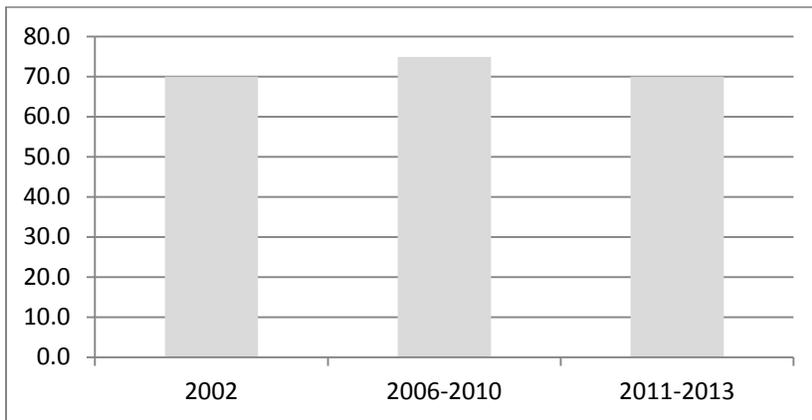


Figure 9. Total contraceptors, ages 35 to 44 years, National Survey of Family Growth (CDC, 2002, 2006-2010 and 2011-2013).

Figure 10 shows that for 35-44 year old contraceptors there was no significant change in the utilization of female or male sterilization, the pill or other hormonal methods over the survey time periods. There was a significant increase in the use of IUDs, going from 1.3% to 4.8% to 7.4% and a significant reduction in non-hormonal methods from 19.5% to 17.2% to 15.3%.

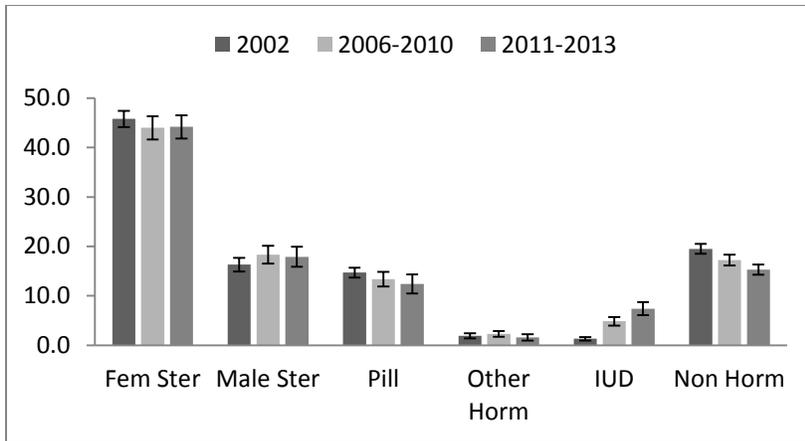


Figure 10. Contraceptors aged 35 to 44 years and method used, National Survey of Family Growth (CDC, 2002, 2006-2010 and 2011-2013). Notes: Fem Ster (Female Sterilization), Male Ster (Male Sterilization), Other Horm (Other Hormonal Method), Non Horm (Non-Hormonal Method).

Use of Contraceptives by Race

The percentage of Hispanic women (Figure 11) using contraceptives changed little over the three survey periods (59.1% to 59.7% to 57.3%).

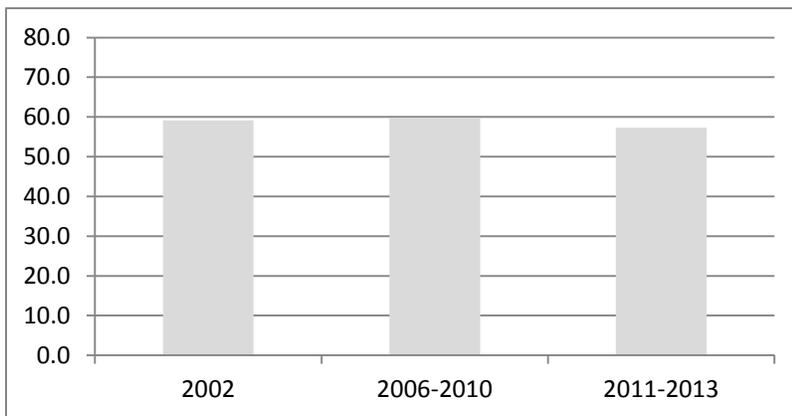


Figure 11. Total Hispanic contraceptive users, National Survey of Family Growth (CDC, 2002, 2006-2010 and 2011-2013).

While there was little change in the total number of Hispanic women utilizing contraceptives and no significant differences in most of the methods used (Figure 12), there was

a major change in the utilization of IUD's over the survey period. IUD utilization increased from 5.8% to 6.8% to 13.2% over the three survey periods. This represents a 94% increase in IUD utilization.

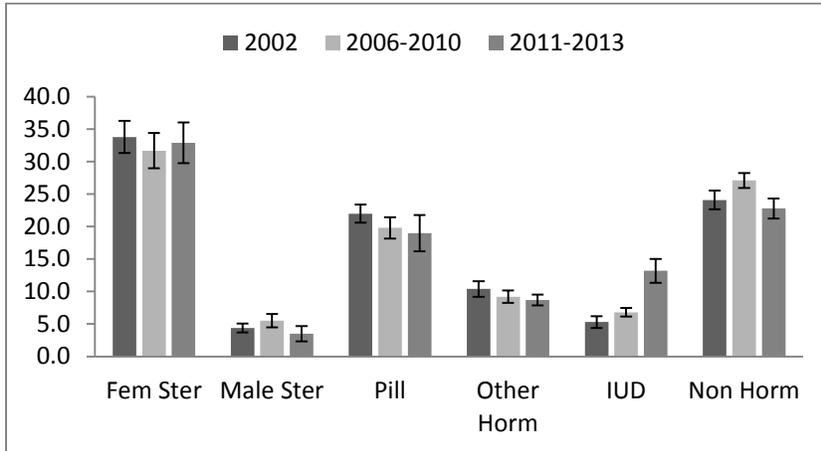


Figure 12. Hispanic contraceptors by method used, National Survey of Family Growth (CDC, 2002, 2006-2010 and 2011-2013). Notes: Fem Ster (Female Sterilization), Male Ster (Male Sterilization), Other Horm (Other Hormonal Method), Non Horm (Non-Hormonal Method).

The numbers of White women using contraception was relatively flat (Figure 13) over the three survey periods, going from 64.7% to 65.6% to 65.3% of the population.

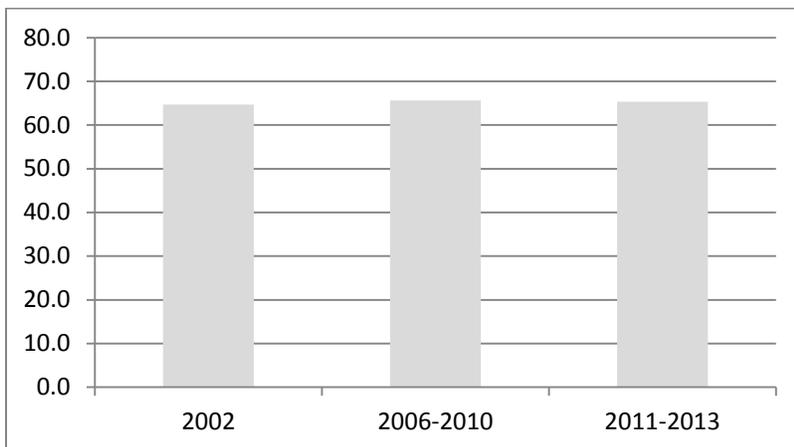


Figure 13. Total White contraceptors, National Survey of Family Growth (CDC, 2002, 2006-2010 and 2011-2013).

For White contraceptors (Figure 14), there was no significant change in utilization of female or male sterilization, the pill or non-hormonal methods. There was a significant increase in utilization of other hormonal methods from 4.9% to 5.3% to 6.4% and IUD utilization from 1.5% to 5.5% to 10.5%.

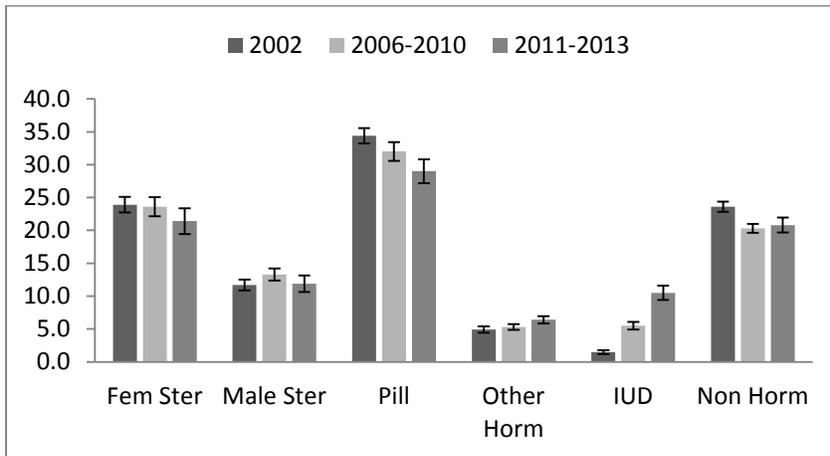


Figure 14. White contraceptors by method used, National Survey of Family Growth (CDC, 2002, 2006-2010 and 2011-2013). Notes: Fem Ster (Female Sterilization), Male Ster (Male Sterilization), Other Horm (Other Hormonal Method), Non Horm (Non-Hormonal Method).

There was no change in the number of Black contraceptors (Figure 15) over the three survey periods.

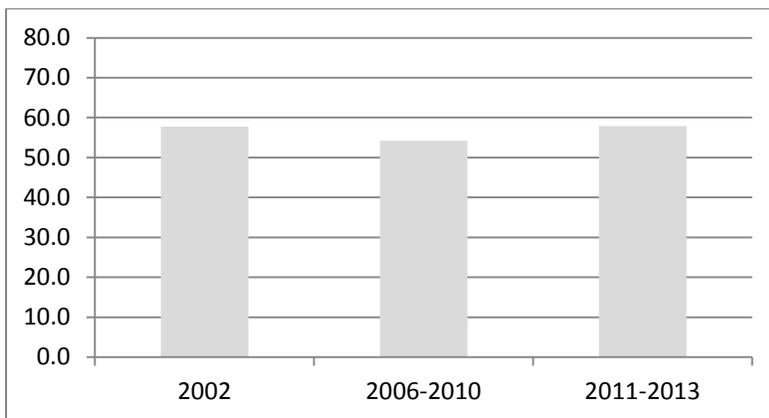


Figure 15. Total Black contraceptors, National Survey of Family Growth (CDC, 2002, 2006-2010 and 2011-2013).

There were no significant changes in utilization among Black contraceptive users (Figure 16). While female sterilization and the pill both appear to be trending down and other hormonal methods and IUD's appear to be trending up, the changes do not meet the level of significance.

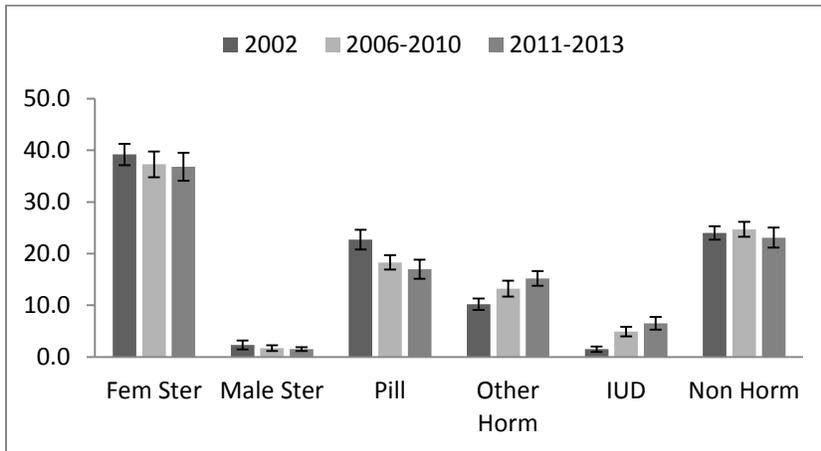


Figure 16. Black Contraceptors by Method Used, National Survey of Family Growth (CDC, 2002, 2006-2010 and 2011-2013). Notes: Fem Ster (Female Sterilization), Male Ster (Male Sterilization), Other Horm (Other Hormonal Method), Non Horm (Non-Hormonal Method).

Use of Contraceptives by Women by Education Level

Total utilization among non-high school educated women (Figure 17) changed little over the survey periods from 69.1% to 70.2% to 67.2%.

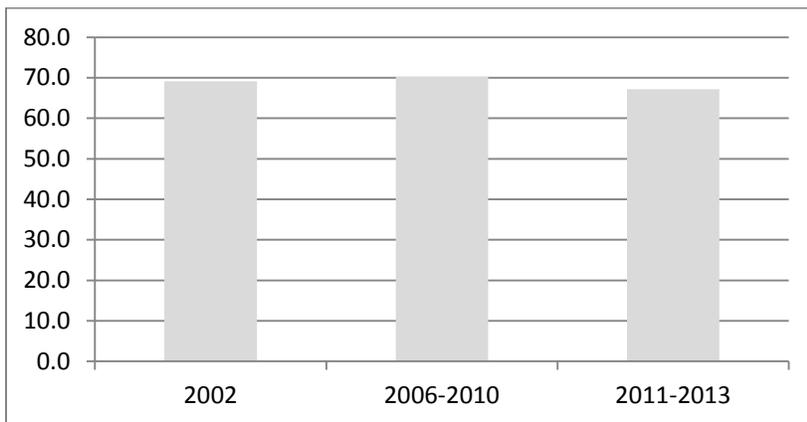


Figure 17. Total non-high school educated contraceptive users, National Survey of Family Growth (CDC, 2002, 2006-2010 and 2011-2013).

For non-high school educated contraceptors (Figure 18), the only significant change in method used was in IUDs, going from 2.5% to 4.7% to 11.2%. There was not a trend up or down among the other methods except for the non-hormonal methods, which is trending slightly up, but not significantly.

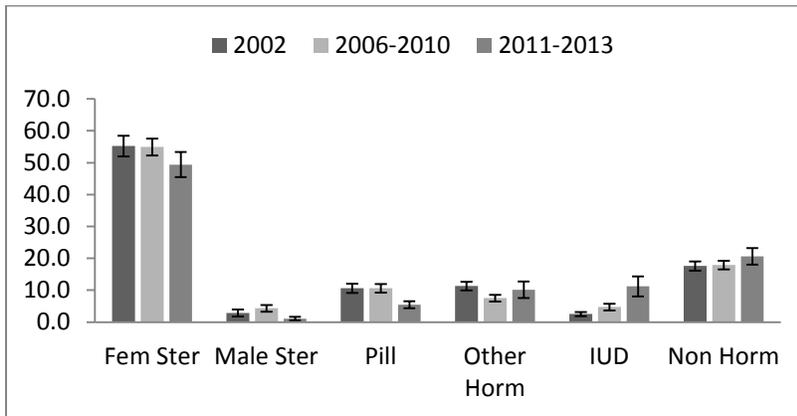


Figure 18. Non-high school educated contraceptors by method used, National Survey of Family Growth (CDC, 2002, 2006-2010 and 2011-2013). Notes: Fem Ster (Female Sterilization), Male Ster (Male Sterilization), Other Horm (Other Hormonal Method), Non Horm (Non-Hormonal Method).

Total utilization among high school or GED educated women (Figure 19) changed little over the survey periods from 70.1% to 73.3% to 66.7%.

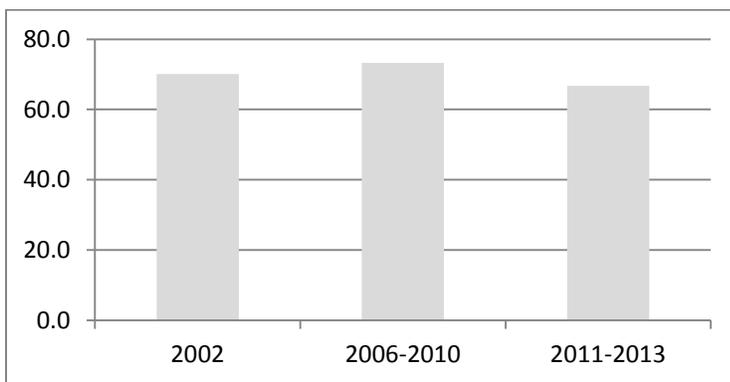


Figure 19. Total high school or GED educated contraceptors, National Survey of Family Growth (CDC, 2002, 2006-2010 and 2011-2013).

Figure 20 illustrates that for high school or GED educated contraceptors there was no change in female sterilization or non-hormonal methods. Male sterilization decreased from 10.8% to 11.6% to 7.8% and the pill also declined from 19% to 17.3% to 12.7%. Other hormonal methods increased from 5.8% to 4.2% to 9.1% and IUD utilization went from 2.5% to 5.2% to 10.3%.

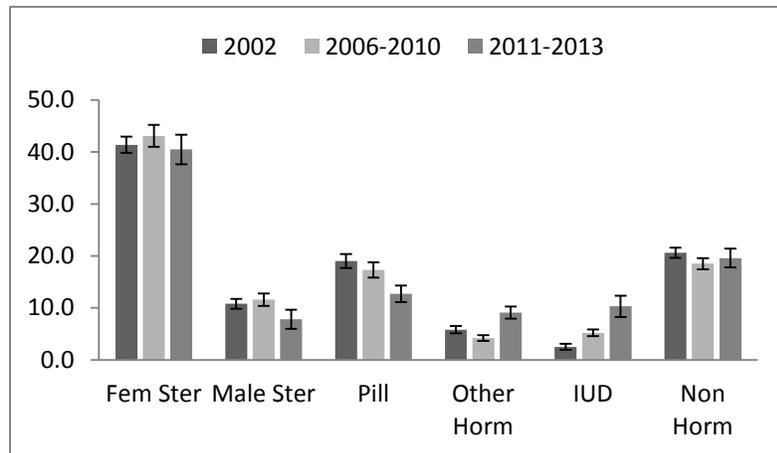


Figure 20. High school or GED educated contraceptors by method used, National Survey of Family Growth (CDC, 2002, 2006-2010 and 2011-2013). Notes: Fem Ster (Female Sterilization), Male Ster (Male Sterilization), Other Horm (Other Hormonal Method), Non Horm (Non-Hormonal Method).

Total utilization among contraceptors with some college education (Figure 21) changed little over the survey periods from 69.7% to 70% to 69.2%.

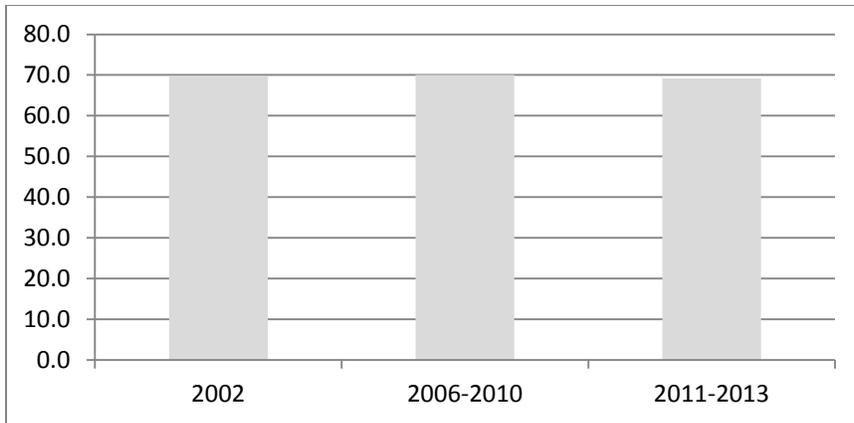


Figure 21. Total some college educated contraceptors, National Survey of Family Growth (CDC, 2002, 2006-2010 and 2011-2013).

For contraceptors with some college education (Figure 22) significant changes occurred in IUD and non-hormonal contraceptive utilization. IUD usage increased from 2.3% to 6.4% to 12.1% while usage of non-hormonal methods decreased from 24.9% to 23.5% to 19.3%.

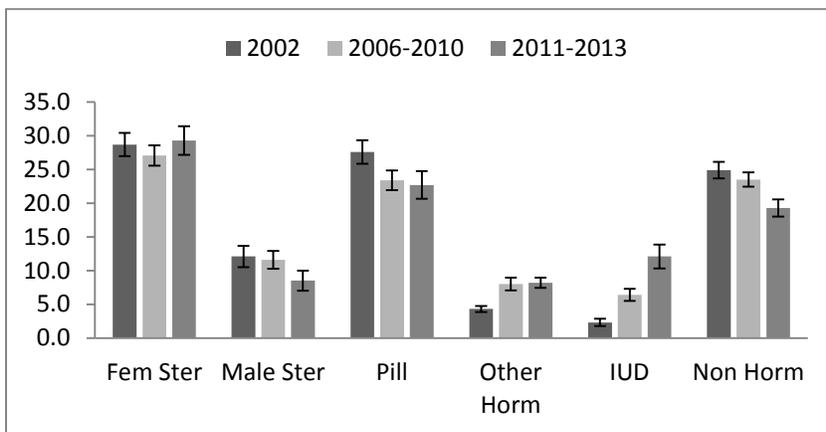


Figure 22. Some college educated contraceptors by method used, National Survey of Family Growth (CDC, 2002, 2006-2010 and 2011-2013). Notes: Fem Ster (Female Sterilization), Male Ster (Male Sterilization), Other Horm (Other Hormonal Method), Non Horm (Non-Hormonal Method).

Total utilization among bachelor’s degree or higher educated women (Figure 23) changed little over the survey periods from 64.5% to 67.4% to 67.3%.

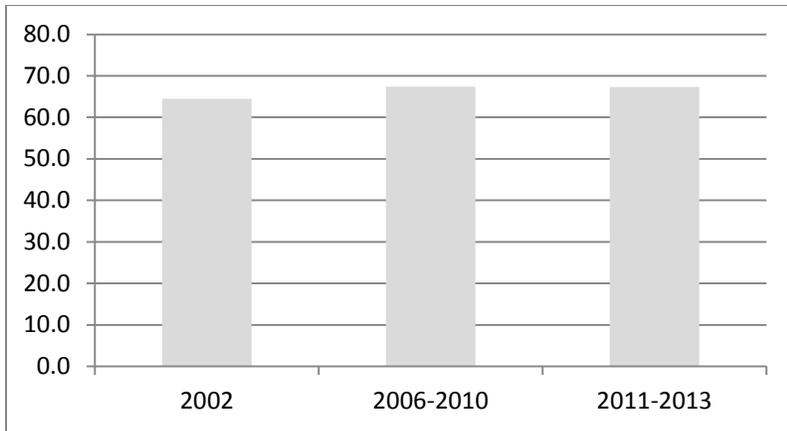


Figure 23. Bachelor’s degree or higher educated contraceptors, National Survey of Family Growth (CDC, 2002, 2006-2010 and 2011-2013).

For women with a bachelor’s degree or higher (Figure 24) there was not a significant change in utilization of female or male sterilization or other hormonal methods of contraception. Utilization of the pill and non-hormonal methods show a steady (but not significant) decline over the survey periods. IUD utilization showed a significant increase from 2% to 6.3% to 11%.

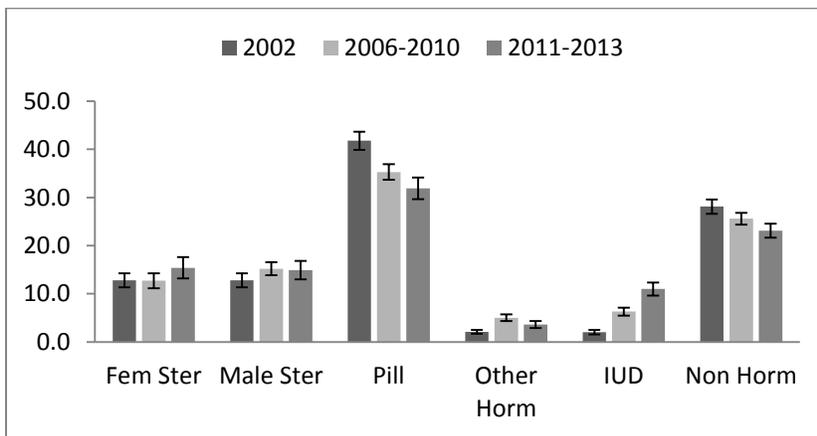


Figure 24. Bachelor’s degree or higher educated contraceptors by method used, National Survey of Family Growth (CDC, 2002, 2006-2010 and 2011-2013). Notes: Fem Ster (Female Sterilization), Male Ster (Male Sterilization), Other Horm (Other Hormonal Method), Non Horm (Non-Hormonal Method).

Discussion and Recommendations

There does not appear to be a change in the number of women utilizing contraception since the inception of the ACA. Overall, rates for any contraceptive use remain stable at 62% across the last ten years (2006-2013). This trend is also seen in the breakdown by age group, race and level of education.

The breakdown by contraceptive method used does reveal promising changes in terms of method effectiveness. Other hormonal methods, which includes the three-year implant, the monthly ring, weekly patch and three-month injection shows a steady increase over the three survey periods. IUDs show an increase of 8.3% over the three survey periods. This improvement is likely the result of a combination of the recommendations from the physician organizations and the improved coverage mandated in the ACA. Unfortunately, while not significant, there also appears to be a decline in female and male sterilization rates, which is the most effective method of contraception for individuals whose families are complete. This decline may be the result of women choosing IUDs over sterilization after their last birth. The reduction in out of pocket cost of the IUD gives women excellent long term contraception and the option of having another child later if they choose.

Age Breakdown

Approximately 46% of 15-24 year olds are contracepting. Nearly half of them are on the pill and 20% report using the condom as their primary form of contraception. Unfortunately, nearly 5% of them still report withdrawal as their primary form of contraception. Longer-acting forms of contraception like the IUD, implant, ring, and patch increased at statistically significant rates. This begs the question: when 50% of pregnancies are unintended and 15-24 year olds experience unintended pregnancy at double the rate of the rest of the population, who is the ACA

helping? The AAP recommending LARC as a first-line contraceptive will help this situation, but many young women are reluctant to have the conversation with their parents, so they will not get optimal physician-assisted contraception. There have also been improvements in state laws allowing minor women to get contraception without parental consent, but they still encounter barriers to access like transportation, and prescription or medical insurance cards.

Pre- and post-ACA, both 25-34 and 35-44 year olds have maintained a roughly 70% contraception rate. Similarly, both female and male sterilization rates were consistent over the three survey periods. The 25 to 34 year age group has embraced the IUD as a longer-term solution to contraception, in place of the pill. IUD usage has increased from 3.4% in 2002 to 15.1% in 2013, while pill usage has declined from 34.3% to 25% over the same time period. Other methods utilized by 35-44 year olds have seen little change, with the exception of IUDs, which have increased from 1.3% to 7.4%. Unfortunately, nearly 6% of 25-34 and 3% of 35-44 year olds still consider withdrawal their primary method of contraception.

Race Breakdown

Approximately 60% of Hispanic women utilize contraceptives, 65% of White women and 58% of Black women. These numbers are consistent over the three survey periods, even though Black women have a significantly higher rate of unintended pregnancy than both of the other races. Looking at changes in methods being used by the three races, there were distinct differences.

Hispanic women increased utilization of IUD's from 5.3% to 6.8% to 13.2%, while not showing any significant changes in other forms of contraception. White women showed a similar improvement in IUD utilization moving from 1.5% to 5.5% to 10.5%, while reducing reliance on the daily pill from 22.7% to 18.3% to 17%. Black women are left behind. While

they did show an increase from 1.5% to 5.5% to 6.5% in IUD use, the change did not reach statistical significance. They did, however, improve utilization of other hormonal methods from 10.2% to 13.2% to 15.2%. These increases were driven by higher utilization of the implant (+2.1%) and the ring and patch (+2.3%). The implant is a highly effective LARC method comparable to the IUD, and the ring and patch are both longer-acting than a daily pill or the non-hormonal methods, but they are not as effective as the LARCs. Additional study would be warranted to better understand why Black women are not gaining the benefits of LARC utilization as quickly as the other two major races. It may be a difference in their culture or it may be that the benefits of the ACA have not been as fully realized in the Black community yet.

Educational Breakdown

Level of educational attainment does not appear to impact the use of contraception, nor has the ACA impacted overall utilization yet, as each group reported about 70% utilization over the three survey periods. There have been minor changes in choice of method though.

Non-High School educated women increased IUD utilization from 2.5% to 4.7% to 11.2%, a trend seen across other breakdowns as well. While not statistically significant, there was also a reduction in female sterilization from 54.9% to 49.4%. This movement is probably more closely tied to ACA coverage of LARCs than any other seen in the data. The uneducated look to sterilization as a method that doesn't require them to be involved, it doesn't require additional cost and it is effective. The ACA gives them this same peace of mind through provision of a no-cost IUD, but leaves the door open for another child if they choose one later.

High school and GED educated women ran from the daily grind of a pill and flocked to the IUD, implant, ring and patch. Pill utilization fell from 19% to 17.3% to 12.7%, while IUD

usage went from 2.5% to 5.2% to 10.3%. Other hormonal contraceptives increased as the result of higher implant, ring and patch utilization from 4.2% to 9.1%.

Women with some college education shifted their trust from the non-hormonal condom to the much higher-efficacy IUD. Non-hormonal utilization fell from 23.5% to 19.3%, while the IUD went from 2.3% to 12.1%.

Women with a bachelor's degree or higher also moved with the crowd to the ease and efficacy of the IUD. Utilization increased from 2% to 6.3% to 11%. This change, more than any other, highlights the effect of increased physician recommendation. Even before the ACA, women with higher education were more likely to have jobs that provided better insurance coverage and would have the funds to pay higher out of pocket expenses for a more effective form of contraception.

Has the ACA made an impact on utilization of contraceptives in the United States? Yes, but it is too early to tell how much. IUD utilization has increased significantly across all of the variables. This is probably due to a combination of the strong recommendation from ACOG and AAP plus the removal of the cost barrier by the ACA. Other methods have seen smaller changes, both up and down, but not as significantly, or as universally as IUDs.

It is too early to tell how much impact the ACA has had because it didn't go into effect until August 1, 2012 and the most recent data available for this review included full year 2013. The National Survey of Family Growth 2011-2013 is continuing through 2015, so if work was done at a later date to analyze the same variables seen here, there may be more marked changes among the other methods.

There has also been some legislative clarification of the ACA that should help improve access to contraception even further. On May 11, 2015 the Department of Health and Human

Services issued a FAQ document that further clarified what types of contraception must be covered without cost sharing (Department of Labor, Department of Health and Human Services, 2015). On the other hand, the Hobby Lobby case has allowed some companies to skirt the contraceptive access mandate—the extent of impact this has is not yet known (American College of Obstetrics and Gynecology, 2015).

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Appendix A: Description of Contraceptive Methods

Other Hormonal Methods:

1. Implant – The contraceptive implant is a single flexible rod about the size of a matchstick that is inserted under the skin in the upper arm. It releases progestin into the body. It protects against pregnancy for up to 3 years (ACOG, 2015)
2. Lunelle - Lunelle is a monthly injection containing the synthetic hormones estrogen and progestin. It is a hormonal method of contraception obtained by prescription and is no longer available in the United States. It prevents eggs from being released from the ovaries, it thickens the cervical mucus, preventing the sperm from reaching the egg and it changes the lining of the uterus preventing implantation (“Lunelle: Monthly Injection,” 2016)
3. Patch - The contraceptive skin patch is a small (1.75 square inch) adhesive patch that is worn on the skin to prevent pregnancy. The patch releases estrogen and progestin, which are absorbed through the skin into the body (ACOG, 2015)
4. Ring - The vaginal ring is a flexible, plastic ring that is placed in the upper vagina. It releases estrogen and progestin that are absorbed through the vaginal tissues into the body (ACOG, 2015)
5. Depo-Provera - The contraceptive injection is an injection of the hormone depot medroxyprogesterone acetate. It provides protection against pregnancy for 3 months (ACOG, 2015)

Non-Hormonal Methods:

1. Withdrawal - The withdrawal method of contraception, also known as coitus interruptus, is the practice of withdrawing the penis from the vagina and away from a woman's external genitals before ejaculation to prevent pregnancy. The goal of the withdrawal method is to prevent sperm from entering the vagina (Mayo Clinic Staff, 2015)
2. Condom (Male/Female) - Two types of condoms are available: male and female. The male condom is a thin sheath made of latex (rubber), polyurethane (plastic), or natural (animal) membrane that is worn by the man over his erect *penis*. Latex and polyurethane condoms provide the best available protection against many STDs, including HIV. The female condom is a thin plastic pouch that lines the vagina. It is held in place by a closed inner ring at the cervix and an outer ring at the opening of the vagina. It can be inserted up to 8 hours before sex and provides some protection against STDs (ACOG, 2015)
3. Periodic Abstinence (Calendar Rhythm Method) - The rhythm method, also called the calendar method or the calendar rhythm method, is a form of natural family planning. To use the rhythm method, you track your menstrual history to predict when you'll ovulate. This helps you determine when you're most likely to conceive (Mayo Clinic Staff, 2014).
4. Periodic Abstinence (Natural Family Planning Method) - The cervical mucus method involves recognizing changes in the mucus produced by the *cervix* and in how the mucus looks and feels. Just before ovulation, the amount of mucus made by the

- cervix noticeably increases, and the mucus becomes thin and slippery. Just after ovulation, the amount of mucus decreases, and it becomes thicker and less noticeable. To prevent pregnancy, you should avoid sexual intercourse or use a barrier method of contraception from the time you first notice any cervical mucus (ACOG, 2015).
5. Diaphragm - The diaphragm is a small dome-shaped device that fits inside the vagina and covers the cervix. It is used with spermicide. Diaphragms are made of latex or silicone. They require a prescription and need to be fitted by a health care provider. Use water-based lubricants only if you use a latex diaphragm (ACOG, 2015).
 6. Emergency Contraception - *Emergency contraception (EC)* reduces the chance of pregnancy after unprotected *sexual intercourse*. Common situations in which EC could be used include forgetting to take several birth control pills in a row, having a condom break or slip off, or not using a contraceptive method during sex. It also can be used after a woman has been raped. How does EC work? Using EC does not cause an abortion. An abortion ends an existing pregnancy. EC prevents pregnancy from occurring. EC must be used soon after unprotected sexual intercourse to be effective. It does not work if pregnancy has already occurred. What are the different types of EC? There are two main types of EC: 1) the *intrauterine device (IUD)* and 2) EC pills. There are three types of EC pills: 1) ulipristal, 2) *progestin*-only pills, and 3) combined EC pills. Some EC pills can be bought over the counter without a prescription. Others require a prescription. A gynecologist or other health care professional must insert the IUD (ACOG, 2015).
 7. Spermicide - A spermicide is a foam, cream, jelly, suppository (an insert that melts after it is inserted in the *vagina*), or film (thin sheets). Spermicide can be used with all other barrier methods except the sponge, which already contains a spermicide. A spermicide should be inserted into the vagina close to the cervix no more than 30 minutes before intercourse. It should remain in place for 6–8 hours after sex. A spermicide should be reapplied with each act of sex (ACOG, 2015).
 8. Cervical Cap - The cervical cap is a small plastic dome that fits tightly over the cervix and stays in place by suction. The cervical cap is used with a spermicide. It has a strap over the dome that is used for removal. A cervical cap must be fitted and prescribed by a health care provider (ACOG, 2015).
 9. Sponge - The sponge is a doughnut-shaped device made of soft foam coated with spermicide. It is inserted into the vagina to cover the cervix. It is available without a prescription (ACOG, 2015).

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Appendix B – List of Competencies Met in CE

Tier 1 Core Public Health Competencies

Domain #1: Analytic/Assessment Skills
Describes factors affecting the health of a community (e.g., equity, income, education, environment)
Identifies quantitative and qualitative data and information (e.g., vital statistics, electronic health records, transportation patterns, unemployment rates, community input, health equity impact assessments) that can be used for assessing the health of a community
Uses information technology in accessing, collecting, analyzing, using, maintaining, and disseminating data and information
Selects valid and reliable data
Selects comparable data (e.g., data being age-adjusted to the same year, data variables across datasets having similar definitions)
Identifies gaps in data
Collects valid and reliable quantitative and qualitative data
Describes public health applications of quantitative and qualitative data
Uses quantitative and qualitative data
Describes how evidence (e.g., data, findings reported in peer-reviewed literature) is used in decision making
Domain #2: Policy Development/Program Planning Skills
Identifies current trends (e.g., health, fiscal, social, political, environmental) affecting the health of a community
Describes implications of policies, programs, and services
Gathers information for evaluating policies, programs, and services (e.g., outputs, outcomes, processes, procedures, return on investment)
Domain #3: Communication Skills
Describes the roles of governmental public health, health care, and other partners in improving the health of a community
Domain #4: Cultural Competency Skills
Describes the diversity of individuals and populations in a community
Describes the ways diversity may influence policies, programs, services, and the health of a community
Domain #5: Community Dimensions of Practice Skills
Suggests relationships that may be needed to improve health in a community
Provides input for developing, implementing, evaluating, and improving policies, programs, and services
Domain #6: Public Health Sciences Skills
Identifies prominent events in the history of public health (e.g., smallpox eradication, development of vaccinations, infectious disease control, safe drinking water, emphasis on hygiene and hand washing, access to health care for people with disabilities)
Retrieves evidence (e.g., research findings, case reports, community surveys) from print and electronic sources (e.g., PubMed, Journal of Public Health Management and Practice, Morbidity and Mortality Weekly Report, The World Health Report) to support decision making
Recognizes limitations of evidence (e.g., validity, reliability, sample size, bias, generalizability)
Describes evidence used in developing, implementing, evaluating, and improving policies, programs, and services
Domain #7: Financial Planning and Management Skills
Describes government agencies with authority to impact the health of a community
Adheres to organizational policies and procedures
Domain #8: Leadership and Systems Thinking Skills
Incorporates ethical standards of practice (e.g., Public Health Code of Ethics) into all interactions with individuals, organizations, and communities
Describes public health as part of a larger inter-related system of organizations that influence the health of populations at local, national, and global levels
Contributes to development of a vision for a healthy community (e.g., emphasis on prevention, health equity for all, excellence and innovation)
Describes ways to improve individual and program performance

Concentration Specific Competencies

Public Health Management
Have a knowledge of strategy and management principles related to public health and health care settings
Know effective communication strategies used by health service organizations
Have a knowledge of leadership principles
Be capable of applying decision-making processes
Have an awareness of strategies for working with stakeholders to determine common and key values to achieve organizational and community goals
Know strategies for promoting teamwork for enhanced efficiency
Have an understanding of effective mentoring methods
Be able to use negotiation techniques
A knowledge of the finance and accounting skills needed for operational management, performance assessment, and forecasting
The ability to develop a departmental budget
An understanding of marketing principles and strategies
An awareness of ethical standards related to management