

## Contraception

### *Clinical Recommendations*

The Women's Preventive Services Initiative recommends that adolescent and adult women have access to the full range of female-controlled contraceptives to prevent unintended pregnancy and improve birth outcomes. Contraceptive care should include contraceptive counseling, initiation of contraceptive use, and follow-up care (e.g., management, and evaluation as well as changes to and removal or discontinuation of the contraceptive method). The Women's Preventive Services Initiative recommends that the full range of female-controlled U.S. Food and Drug Administration-approved contraceptive methods, effective family planning practices, and sterilization procedures be available as part of contraceptive care.

The full range of contraceptive methods for women currently identified by the U.S. Food and Drug Administration include: (1) sterilization surgery for women, (2) surgical sterilization via implant for women, (3) implantable rods, (4) copper intrauterine devices, (5) intrauterine devices with progestin (all durations and doses), (6) the shot or injection, (7) oral contraceptives (combined pill), (8) oral contraceptives (progestin only, and), (9) oral contraceptives (extended or continuous use), (10) the contraceptive patch, (11) vaginal contraceptive rings, (12) diaphragms, (13) contraceptive sponges, (14) cervical caps, (15) female condoms, (16) spermicides, and (17) emergency contraception (levonorgestrel); and (18) emergency contraception (ulipristal acetate); and additional methods as identified by the FDA. Additionally, instruction in fertility awareness-based methods, including the lactation amenorrhea method, although less effective, should be provided for women desiring an alternative method.

### *Implementation Considerations*

The Women's Preventive Services Initiative recommends as a preventive service, access to and provision of the full range of female-controlled U.S. Food and Drug Administration-identified contraceptive methods. This includes access to contraceptive counseling, initiation of contraceptive use, and follow-up care (e.g., management, evaluation, as well as changes to and removal or discontinuation of the contraceptive method) by a health care provider or appropriately trained individual. Additionally, effective family planning practices, and patient-specific services or U.S. Food and Drug Administration-approved methods that may be required based on individual women's needs are recommended as part of contraceptive preventive services.

The Women's Preventive Services Initiative recommends accommodation of an alternative form of contraception when a particular drug or device (generic or brand name) is medically inappropriate for a patient as determined by the individual's health care provider. Research indicates that delayed initiation or disruption of contraceptive use increases the risk of unintended pregnancy; therefore, the Women's Preventive Services Initiative recommends timely authorization of contraceptives.

The Women's Preventive Services Initiative also recommends as a preventive service counseling that emphasizes patient-centered decision-making and allows for discussion of the full range of contraceptive options.

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For some women, more than one visit may be needed to achieve effective contraception. More than one visit may also be necessary to identify the appropriate contraceptive methods to optimize compliance and effectiveness as determined by a woman and her health care provider, based on shared decision making.

## EVIDENCE MAP

- Adolescent and adult women should have access to the full range of female-controlled contraceptives to prevent unintended pregnancy and improve birth outcomes.
- The full range of female-controlled U.S. Food and Drug Administration-approved contraceptive methods, effective family planning practices, and sterilization procedures should be available as part of contraceptive care.

Systematic Reviews	Additional Studies	USPSTF <sup>1</sup>
None	<ul style="list-style-type: none"> <li>• Contraceptive efficacy is well established and supported in an observational study and review of population data.<sup>1</sup></li> <li>• LARC uptake is associated with lower rates of abortion, repeat abortion, and teenage births compared to regional and national rates (<math>p &lt; 0.001</math>).<sup>2</sup></li> <li>• Counseling about and access to the full range of contraceptive methods is associated with increased contraceptive use and decreased unintended pregnancy rates.<sup>2,3</sup></li> </ul>	<ul style="list-style-type: none"> <li>• USPSTF: No recommendation</li> <li>• Bright Futures<sup>4</sup>: Recommends a developmentally targeted sexual history, assessment of STI and pregnancy risk, and provision of appropriate screening, counseling, and, if needed, contraceptives.</li> </ul>

Evidence map continued on page 83.

Contraceptive care should include contraceptive counseling, initiation of contraceptive use, and follow-up care (e.g., management, and evaluation as well as changes to and removal or discontinuation of the contraceptive method).

Systematic Reviews	Additional Studies	USPSTF <sup>1</sup>
<p>2013 Cochrane review supports the effectiveness of counseling on contraceptive adherence and continuation for oral contraceptives and injectables.<sup>5</sup></p>	<ul style="list-style-type: none"> <li>• Counseling about and access to the full range of contraceptive methods is associated with increased contraceptive use and decreased unintended pregnancy rates.<sup>2,3</sup></li> <li>• Higher continuation rates are associated with increased supply of oral contraceptives at initiation (1 RCT)<sup>6,7</sup></li> <li>• Providing an increased supply of contraceptive pill packages is associated with decreased unintended pregnancies.<sup>7,8</sup></li> </ul>	<ul style="list-style-type: none"> <li>• USPSTF: No recommendation</li> <li>• Bright Futures: See page 92.</li> </ul>

Abbreviations: ACA=Affordable Care Act, LARC=long acting reversible contraceptive, USPSTF=U.S. Preventive Services Task Force

## SUMMARY OF EVIDENCE

### Introduction

The goal of primary prevention of unintended pregnancy is to aid women in the achievement of their pregnancy intentions and to improve maternal, child, and family outcomes by increasing the likelihood that every pregnancy is one that is both desired and planned.<sup>9</sup> Contraceptive methods enable women to actively prevent unintended pregnancy and control the timing of a desired pregnancy. When choosing a contraceptive method, women may consider efficacy, side effects, convenience, prevention of sexually transmitted infections, and non-contraceptive benefits. Most of these methods are female controlled and can be discussed in the context of routine clinical care or with specific counseling.

Contraceptive counseling offers an opportunity to discuss reproductive health goals, educate about the various methods, clarify or dispel myths or misinformation, and facilitate the provision of a method that will be successful for individual women. Comprehensive counseling may facilitate effective use and increase the provision of methods with the highest efficacy, especially in high risk populations, while taking into account the woman’s preferences, her time frame for pregnancy, contraceptive efficacy, safety, and side effects.

## Current Recommendations and Coverage of Services

The gap in services provided under the provisions of the Patient Protection and Affordable Health Care Act of 2010 (ACA) previously identified by the Institute of Medicine (IOM) Committee was the absence of coverage for contraception<sup>10</sup> (**Table 1**).

**Table 1. Summary of Recommendations Currently Covered by the Affordable Care Act**

IOM Committee <sup>11</sup>	Includes the full range of Food and Drug Administration-approved contraceptive methods, sterilization procedures, and patient education and counseling for women with reproductive capacity to prevent unintended pregnancy and promote healthy birth spacing.
USPSTF	Not addressed
Bright Futures <sup>4</sup>	Recommends a developmentally targeted sexual history, assessment of STI and pregnancy risk, and provide appropriate screening, counseling, and, if needed, contraceptives.

Abbreviations: IOM=Institute of Medicine; STI=sexually transmitted infection; USPSTF=U.S. Preventive Services Task Force

Contraceptive coverage under the ACA requires that all plans in the Health Insurance Marketplace cover contraceptive methods and counseling for all women, as prescribed by a health care provider without charging copayment or coinsurance when provided by an in-network provider regardless of whether the deductible has been met.<sup>12</sup> Private companies are increasingly challenging the contraception provisions in the ACA,<sup>13</sup> and employed women may have plans that are exempt from contraceptive coverage.<sup>14</sup> Nonetheless, as a result of the ACA's contraceptive coverage requirement, more than 55 million women currently have access to birth control without copayments.<sup>15</sup>

Data from a 2016 study evaluating the impact of contraceptive coverage under the ACA demonstrated a 70% decrease in mean total out-of-pocket expenses for U.S. Food and Drug Administration (FDA) approved contraceptives for commercially insured women from 2011 to 2013.<sup>16</sup> The study reviewed contraceptive claims for nearly 2.5 million women ages 15 to 44 years in a commercial claims database who were using contraceptives and compared out of pocket costs for pre-implementation versus post-implementation of the ACA contraceptive and family planning mandate.

Title X of the Public Health Service Act, a federal grant program established in 1970 and administered by the Department of Health and Human Services, provides reproductive healthcare and contraceptive services to low-income U.S. women and men.<sup>17</sup> Title X serves approximately 1 million teens each year and provides family planning and related preventive health services for low-income persons.

## Background

Family planning services are at the cornerstone of effective prevention in reproductive health and include contraception, patient education, and counseling. In the United States, nearly half of the pregnancies that occur annually are unintended.<sup>18,19</sup> Unintended pregnancy is defined as a pregnancy that is either mistimed (27% of all pregnancies) or unwanted (18% of all pregnancies).<sup>19,20</sup> Between 2008 and 2011, the overall unintended pregnancy rate in the United States decreased substantially among women ages 15 to 44 years from 54 per 1,000 to 45 in 2011, a decline of 18% and the lowest rate of unintended pregnancy in at least 30 years.<sup>19,20</sup> Despite the availability of effective forms of contraception, disparities exist in contraceptive use and rates of unintended pregnancy.<sup>21</sup> Unintended pregnancies disproportionately occur in women age 18 to 24 years, especially among those with low incomes or from racial/ethnic minorities.<sup>22</sup>

Long acting reversible contraception (LARC) has been recommended to effectively reduce unintended pregnancy,<sup>23</sup> although these methods are less frequently used in the United States compared with other developed countries.<sup>24</sup> Access to effective forms of contraception is an important step in preventing unintended pregnancies, but it is not enough to address disparities in unplanned pregnancy. A comprehensive approach includes access to preconception care, fertility planning, health care counseling, and reproductive health education and promotion.<sup>25</sup>

The Healthy People 2020<sup>26</sup> goals specify the importance of promoting healthy pregnancy outcomes by preventing unintended conception<sup>26,27</sup> and recognize this as a challenge in the United States. These goals are further defined by increasing the proportion of intended pregnancies from 51% to 56%<sup>26</sup> because births resulting from unintended or closely spaced pregnancies are associated with adverse maternal and child health outcomes. These include delayed prenatal care, premature birth, and negative physical and mental health effects for children.<sup>28-30</sup>

Other harms include increased risk of delaying prenatal care, maternal depression, or experiencing physical violence during pregnancy,<sup>31-34</sup> in addition to the impact on health behaviors such as breastfeeding and birth outcomes. Secondary benefits of access to contraception include promoting pregnancy spacing, or healthy pregnancy intervals, which is associated with reduction of repeated unintended pregnancy and improved health outcomes for both the mother and the infant. In spite of advances in contraceptive technology and its effectiveness, rates of unintended pregnancy in the United States remain high.

Primary prevention is aimed at preventing the onset of a specific condition.<sup>35</sup> As recently as 2016, a committee assembled by the Centers for Disease Control and Prevention (CDC) released guidelines on health care system measures to advance preconception care<sup>36</sup> and to consider this as a quality metric for prevention. Preconception interventions, such as an evaluation of every woman's current pregnancy intentions, may be incorporated as an aspect of women's primary care since data suggest that healthier pregnancies occur in women who are healthy prior to conception.<sup>37</sup> A preconception visit can optimize the chances of a healthy pregnancy by screening for conditions that adversely affect pregnancy, reducing the use of teratogenic medications, and promoting the use of folic acid daily to prevent birth defects.<sup>38</sup>

Contraception as primary prevention enables the routine screening of pregnancy intention. Primary prevention of unintended pregnancy also includes an evaluation of a patient's satisfaction with her contraceptive method at subsequent visits to reduce discontinued or interrupted use. A recent study found that at subsequent visits after a birth control method was started, providers were less likely to discuss method satisfaction, consistent and correct use, or take a subsequent sexual history than at initial family planning visits.<sup>39</sup> Over a 1-year period, as many as a one fourth of all women experience a gap in contraceptive use and approximately two out of five women may use their oral contraceptives inconsistently, contributing significantly to the risk for unintended pregnancy.<sup>40</sup>

Contraceptive efficacy is well established (**Table 2**),<sup>1,41</sup> non-contraceptive benefits of hormonal contraception are recognized,<sup>42</sup> and risk factors for unintended pregnancy are known.<sup>11</sup> Effectiveness is primarily related to contraceptive accessibility and access, especially amongst vulnerable or higher risk populations, including adolescents. Barriers to contraceptive access include policy provisions for privately insured women, immediate access to emergency contraception, and patient protections in the case of provider refusal, including pharmacists, all of which may vary by state.<sup>43</sup>

From 2006 to 2010, the National Survey of Family Growth reported that 78.6% of sexually experienced females ages 15 to 44 years received reproductive health services in the previous 12 months.<sup>18</sup> The Healthy people 2020 target for this health indicator is 86.5%.<sup>45</sup> In 2010, 11.5 million visits were made to primary care offices for family planning counseling or contraception.<sup>46</sup> In the same year, 62% of reproductive aged women used contraception.<sup>47</sup> The most frequently used methods of contraception in the United States continue to be oral contraceptives and sterilization (**Table 3**), despite an increase in the availability of more effective methods.<sup>48</sup>

The use of LARC among women at risk for unintended pregnancy is increasing in the United States, but was only 8.5% in 2009,<sup>24</sup> compared with much higher rates in other developed countries.<sup>24</sup> National data show that, contrary to the evidence-based CDC recommendations on medical eligibility criteria for contraceptive use,<sup>49</sup> only 38% of physicians providing contraception in the United States offer intrauterine devices (IUDs) to adolescents, 53% to nulliparous women, and 25% immediately after abortion.<sup>50,51</sup> Women who do not use any form of contraception represent 10% of women at risk for unintended pregnancies, yet account for over half of the unintended pregnancies that occur annually.<sup>1</sup> Notably, the annual risk of pregnancy associated with nonuse of contraception is 85%.

Table 2. Contraceptive Effectiveness, Proportion Pregnant Over 1 Year of Use<sup>1,44</sup>

Contraceptive method	Prefect use (%)	Typical use (%)
Implant	0.05	0.05
Vasectomy	0.10	0.15
IUD, levonorgesterol-releasing	0.2	0.2
IUD, Copper-T	0.6	0.8
Tubal sterilization	0.5	0.5
Injectable	0.2	6
Pill	0.3	9
Vaginal ring	0.3	9
Patch	0.3	9
Diaphragm	6	12
Sponge*	9/20	12/24
Male condom	2	18
Withdrawal	4	22
Fertility awareness methods†	0.4-5	24
Spermicides	18	28
Emergency contraception‡	NA	NA
No method	85	85

\*For sponge, first figure is for women who have not previously given birth and second is for women who have.

†Includes cervical mucus methods, body temperature methods, and periodic abstinence.

‡Effectiveness of emergency contraception is not measured on a 1-year basis like other methods; it is estimated to reduce the incidence of pregnancy by approximately 90% when used to prevent pregnancy after 1 instance of unprotected sex.

Abbreviations: IUD = intrauterine device

Table 3. Contraceptive Method Choice, U.S. Women 2012\*

Method	Users, N	Women age 15-45 years (%)	Women at risk of unintended pregnancy (%)	Contraceptive user (%)
Pill	9,720,000	16.0	23.3	25.9
Tubal (female) sterilization	9,443,000	15.5	22.6	25.1
Male condom	5,739,000	9.4	13.7	15.3
IUD	3,884,000	6.4	9.3	10.3
Vasectomy	3,084,000	5.1	7.4	8.2
Withdrawal	1,817,000	3.0	4.4	4.8
Injectable	1,697,000	2.8	4.1	4.5
Fertility awareness-based methods	509,000	0.8	1.2	1.4
Implant	492,000	0.8	1.2	1.3
Patch	217,000	0.4	0.5	0.6
Emergency Contraception	91,000	0.2	0.2	0.2
Other methods†	133,000	0.2	0.3	0.4
No method, at risk of unintended‡ pregnancy	4,175,000	6.9	10.0	NA
No method, not at risk	19,126,000	31.4	NA	NA
Total	60,887,000	100.0	100.0	100.0

\*Most effective method used in the past month by U.S. women.

†Includes diaphragm, female condom, foam, cervical cap, sponge, suppository, jelly/cream, and other methods.

‡At risk refers to women who are sexually active; not pregnant, seeking to become pregnant, or postpartum; and not non-contraceptive sterile.

Abbreviations: IUD=intrauterine device; N=sample size.

Several national and professional organizations have issued recommendations for contraception use (**Table 4**). The United States Medical Eligibility Criteria for Contraceptive Use, 2016 (US MEC),<sup>49,52</sup> is adapted from the World Health Organization (WHO) medical eligibility criteria (MEC) 5th edition<sup>53</sup> and provides recommendations for contraceptive method safety and efficacy based on updated scientific evidence for women with a wide range of medical conditions.<sup>49</sup> These provide clinicians with comprehensive safety and prescribing guidelines for patients with comorbidities and potential contraindications to particular contraceptive methods.

The U.S. Selected Practice Recommendations for Contraceptive Use 2016 (U.S. SPR),<sup>52</sup> comprises recommendations that address a select group of common, yet sometimes controversial or complex issues regarding initiation and use of specific contraceptive methods, serve as a supplement to the MEC, and are specific to U.S. family planning practices.<sup>54</sup> The document offers guidance related to the use of contraceptives, including initiation, choice of method, follow-up criteria and testing prior to initiation of methods, with additional guidance on problems that may arise during use such as missed pills or unscheduled bleeding.<sup>54</sup>

The CDC recommendations for Providing Quality Family Planning Services (QFP) provide additional guidance on contraceptive counseling and provision for the full range of contraceptive methods,<sup>55</sup> with specific guidance for offering comprehensive contraceptive services. Some organizations, including the CDC, now recommend increasing access to LARC to reduce unintended pregnancy because of its high level of effectiveness.<sup>23</sup> The American Academy of Pediatrics (AAP) updated its policy statement in 2014 to emphasize that the first-line contraceptive choice for adolescents who choose not to be abstinent is a LARC method, specifically an intrauterine device or a subdermal implant.<sup>56</sup> In 2015, the American College of Obstetricians and Gynecologists (ACOG) strengthened its LARC recommendations to underscore LARC as the most effective reversible contraceptive option for most women, including nulliparous women and adolescents who are sexually active.<sup>57</sup>

**Table 4. Recommendations of Professional Organizations<sup>58</sup>**

American College of Obstetricians and Gynecologists (ACOG) <sup>59</sup>	Counseling on contraceptive options to prevent unwanted pregnancy, including emergency contraception, for women 13-39 years.
American Academy of Family Physicians (AAFP) <sup>60</sup>	Counseling for men and women to decrease the number of unwanted pregnancies, including abstinence information and prescriptions for routine contraception and emergency contraception.
American Academy of Pediatrics (AAP) <sup>61</sup>	Routine contraception and counseling for all adolescents regardless of sexual activity.
American Medical Association (AMA) <sup>62</sup>	Reducing unintended pregnancy through family planning and education, and discussing emergency contraception during routine contraceptive counseling.
Centers for Disease Control, U.S Office of Population affairs (CDC) <sup>55</sup>	Recommends contraceptive services to delay or prevent pregnancy. These include a full range of FDA-approved contraceptive methods, a brief assessment to identify the methods that are safe for the client, contraceptive counseling to help a client choose a method of contraception and use it correctly and consistently, and provision of one or more selected contraceptive method(s), preferably on site, but by referral if necessary. Education is an integral component of the contraceptive counseling process that helps clients to make informed decisions and obtain the information they need to use contraceptive methods correctly.

## UPDATE OF EVIDENCE

Contraception is effective in preventing unintended pregnancy<sup>1</sup> and LARC methods have the highest efficacy in all patient populations. Data from California demonstrate a 47% reduction in the rate of adolescent pregnancy between 1992 and 2005, crediting accurate sexual education and increased access to family planning.<sup>63</sup> A statistical model estimating the number of women at risk for unintended pregnancy in Oregon if a similar approach to family planning were adopted determined that numbers would drop from >58,000 to <6,000.<sup>64</sup>

Contraceptive counseling provides an effective opportunity to discuss contraceptive options and emphasize patient-centered decision making.<sup>2,3,65</sup> A recent cluster randomized trial evaluating the effectiveness of a “contraceptive vital sign” in primary care demonstrated that primary care providers who routinely incorporated an evaluation of patients’ contraceptive use or pregnancy intentions improved prescribing practices and were more likely to document effective contraceptive use when prescribing potentially teratogenic medication.<sup>66</sup> Contraceptive counseling in primary care may increase the uptake of hormonal methods and LARC,<sup>67</sup> although data on structured counseling in specialized reproductive health settings demonstrated no such effect.<sup>2,3,65,68,69</sup>

A randomized controlled trial conducted in California demonstrated higher continuation rates of oral contraceptives for patients who received a 7-month supply compared with a 3-month supply of oral pill packs (51% vs. 35%; OR 1.9, 95% CI 1.3 to 2.7). Continuation rates were also higher among participants receiving pill packs compared with those receiving a prescription (OR 1.5, 95% CI 1.1 to 2.4) regardless of age, education, parity, or insurance status.<sup>6</sup> An observational study, also from California, of data from publicly funded reproductive health programs found an association between women receiving a 1-year supply of oral contraceptive pill packages and a decrease in both unintended pregnancies and abortions<sup>6,8</sup> compared with women who received 3 or 1 cycle of pills. Improved continuation rates are also associated with use of LARC versus oral contraceptives<sup>70</sup> due to ease of use and efficacy.

A 2013 Cochrane review of strategies to improve contraceptive adherence and acceptability identified three trials demonstrating effectiveness of contraceptive adherence and continuation, while six other trials did not.<sup>5</sup> Two of three trials showing counseling effectiveness were conducted in the United States. Studies focused on oral contraceptives or injectables (DMPA), and, while hormonal contraceptives are the most popular forms of reversible contraception, patterns of typical use result in lower effectiveness compared to the high theoretical effectiveness of this method. Effective counseling methods to improve adherence were limited to the trials that combined intensive counseling and multiple contacts or reminders. Limitations of the review included variation in counseling strategies, small sample sizes, high loss to follow-up, and limited contraceptive types, as none examined counseling for users of the vaginal ring, implant, IUD, or levonorgestrel intrauterine system (LNG IUS).

The CHOICE project was a large scale U.S. study aimed at reducing unintended pregnancies by providing no-cost contraception and promoting the use of LARC methods. Notably there was no randomization or control group, but findings demonstrated a teenage birth rate of 6.3 per 1,000 among study participants compared with the national average of 34.3 per 1,000 over the same period. Among 9,256 adolescents and women ages 14

to 45 years at risk for unintended pregnancy who were offered no-cost contraception of any type, there was a significant reduction in the rate of abortion, repeat abortion, and teenage birth rates compared with regional and national rates ( $p < 0.001$ ).<sup>2</sup> Population based outcomes of teenage birth and repeat abortion were used as proxies for unintended pregnancies.

A cluster randomized trial across 40 clinics in the United States<sup>71</sup> investigated whether a clinic-level intervention could improve access to LARCs and reduce pregnancy rates among women age 18 to 25. Results demonstrated a lower pregnancy rate in the family planning intervention group who received counselling on IUDs or implants (565 [71%] of 797 vs 271 [39%] of 693, odds ratio 3.8, 95% CI 2.8 to 5.2) and more selecting LARC methods during the clinic visit (224 [28%] vs 117 [17%], 1.9, 1.3 to 2.8). There was a significant intervention effect on pregnancy rates in women attending family planning visits (hazard ratio 0.54, 95% CI 0.34 to 0.85).

## **CONCLUSIONS**

The effectiveness of the full range of FDA-approved contraceptive methods for preventing or delaying pregnancy is well established. Effective comprehensive contraceptive care includes counseling, initiation, and follow-up. Contraceptive counseling and access to contraceptive methods is associated with increased contraceptive use and decreased unintended pregnancy rates. Long acting reversible contraceptive (LARC) methods are the most effective reversible contraceptive option for most women, including nulliparous women and adolescents who are sexually active. Counseling on LARC methods is associated with lower pregnancy rates and lower rates of abortion and repeat abortion. Providing an increased supply of oral contraceptives at initiation is associated with higher continuation rates and lower unintended pregnancy rates. Further research is needed to evaluate counseling approaches that promote uptake of the most effective contraceptive methods, reducing costs for women seeking contraception, and reducing barriers to access, especially among those at highest risk for unintended pregnancy.

## REFERENCES

- <sup>1</sup>Trussell J. Contraceptive failure in the United States. *Contraception*. 2011;83(5):397-404. doi: <http://dx.doi.org/10.1016/j.contraception.2011.01.021>. PMID: 21477680.
- <sup>2</sup>Peipert JF, Madden T, Allsworth JE, et al. Preventing unintended pregnancies by providing no-cost contraception. *Obstet Gynecol*. 2012;120(6):1291-7. doi: <http://dx.doi.org/10.1097/AOG.0b013e318273eb56>. PMID: 23168752.
- <sup>3</sup>Harper CC, Rocca CH, Thompson KM, et al. Reductions in pregnancy rates in the USA with long-acting reversible contraception: a cluster randomised trial. *Lancet*. 2015;386(9993):562-8. doi: [http://dx.doi.org/10.1016/S0140-6736\(14\)62460-0](http://dx.doi.org/10.1016/S0140-6736(14)62460-0). PMID: 26091743.
- <sup>4</sup>Hagan JF, Shaw JS, Duncan PM. *Bright Futures: Guidelines for health supervision of infants, children and adolescents*, 3rd ed. Elk Grove Village, IL: American Academy of Pediatrics; 2008. [https://brightfutures.aap.org/bright%20Futures%20Documents/BF3%20pocket%20guide\\_final.pdf](https://brightfutures.aap.org/bright%20Futures%20Documents/BF3%20pocket%20guide_final.pdf).
- <sup>5</sup>Halpern V, Lopez LM, Grimes DA, et al. Strategies to improve adherence and acceptability of hormonal methods of contraception. *Cochrane Database of Systematic Reviews*. 2013;10:CD004317. doi: <http://dx.doi.org/10.1002/14651858.CD004317.pub4>. PMID: 24163097.
- <sup>6</sup>O'Connell White K, Roca C, Westhoff CL. The impact of pack supply on oral contraceptive continuation: a randomized controlled trial. *Contraception*. 2010;82(2):185-6. doi: [10.1016/j.contraception.2010.04.034](http://dx.doi.org/10.1016/j.contraception.2010.04.034).
- <sup>7</sup>Steenland MW, Rodriguez MI, Marchbanks PA, et al. How does the number of oral contraceptive pill packs dispensed or prescribed affect continuation and other measures of consistent and correct use? A systematic review. *Contraception*. 2013;87(5):605-10. doi: [10.1016/j.contraception.2012.08.004](http://dx.doi.org/10.1016/j.contraception.2012.08.004). PMID: 23040121.
- <sup>8</sup>Foster DG, Hulett D, Bradsberry M, et al. Number of oral contraceptive pill packages dispensed and subsequent unintended pregnancies. *Obstet Gynecol*. 2011;117(3):566-72. doi: [10.1097/AOG.0b013e3182056309](http://dx.doi.org/10.1097/AOG.0b013e3182056309). PMID: 00006250-201103000-00008.
- <sup>9</sup>Taylor D, James EA. An evidence-based guideline for unintended pregnancy prevention. *JOGNN*. 2011;40(6):782-93. doi: <http://dx.doi.org/10.1111/j.1552-6909.2011.01296.x>. PMID: 22092349.
- <sup>10</sup>Adler N, Adashi E, Aguilar-Gaxiola S, et al. Women's health research: progress, pitfalls, and promise Institute of Medicine's (IOM) committee on women's health research. The National Academies Press: Washington, D.C.: 2010. <http://www.nationalacademies.org/hmd/Reports/2010/Womens-Health-Research-Progress-Pitfalls-and-Promise.aspx>.
- <sup>11</sup>IOM (institute of Medicine). *Clinical preventive services for women: closing the gaps*. Washington, DC: National Academies Press; 2011.
- <sup>12</sup>U.S. Centers for Medicare & Medicaid Services. *Birth control benefits*. <https://www.healthcare.gov/coverage/birth-control-benefits/>. Accessed May 15, 2016.
- <sup>13</sup>*Zubik v. Burwell*, No. 14-1418, 578 U.S. \_\_\_, slip op. at 3, 5 (2016) (per curiam).
- <sup>14</sup>Tanne JH. Companies increasingly challenge health act's contraception provisions. *BMJ*. 2013;346:f281. doi: <http://dx.doi.org/10.1136/bmj.f281>. PMID: 23319581.

- <sup>15</sup>Department of Health & Human Services. The Affordable Care Act is improving access to preventive services for millions of Americans. 2015. <https://aspe.hhs.gov/sites/default/files/pdf/139221/The%20Affordable%20Care%20Act%20is%20Improving%20Access%20to%20Preventive%20Services%20for%20Millions%20of%20Americans.pdf>. Accessed May 11, 2016.
- <sup>16</sup>Law A, Wen L, Lin J, et al. Are women benefiting from the Affordable Care Act? A real-world evaluation of the impact of the Affordable Care Act on out-of-pocket costs for contraceptives. *Contraception*. 2016;93(5):392-7. doi: <http://dx.doi.org/10.1016/j.contraception.2016.01.008>.
- <sup>17</sup>Office of Population Affairs. Program requirements for Title X funded family planning projects. 2014. <https://www.hhs.gov/opa/sites/default/files/program-requirements-for-title-x-funded-family-planning-projects.pdf>. November 30, 2016.
- <sup>18</sup>Mosher WD, Jones J, Abma JC. Intended and unintended births in the United States: 1982-2010. *Natl Health Stat Report*. 2012. (55):1-28. PMID: 23115878.
- <sup>19</sup>Guttmacher Institute. Unintended pregnancy in the United States. 2016. <https://www.guttmacher.org/factsheet/unintended-pregnancy-united-states>. Accessed May 15, 2016.
- <sup>20</sup>Finer LB, Zolna MR. Declines in unintended pregnancy in the United States, 2008-2011. *N Engl J Med*. 2016;374(9):843-52. doi: 10.1056/NEJMs1506575. PMID: 26962904.
- <sup>21</sup>Finer LB, Henshaw SK. Disparities in rates of unintended pregnancy in the United States, 1994 and 2001. *Perspect Sex Reprod Health*. 2006;38(2):90-6. doi: 10.1363/psrh.38.090.06. PMID: 16772190.
- <sup>22</sup>Finer LB, Zolna MR. Shifts in intended and unintended pregnancies in the United States, 2001-2008. *Am J Public Health*. 2014;104 Suppl 1:S43-8. doi: 10.2105/ajph.2013.301416. PMID: 24354819.
- <sup>23</sup>Centers for Disease Control and Prevention. Unintended pregnancy prevention. 2015. <http://www.cdc.gov/reproductivehealth/unintendedpregnancy/>. Accessed May 15, 2015.
- <sup>24</sup>Finer LB, Jerman J, Kavanaugh ML. Changes in use of long-acting contraceptive methods in the United States, 2007-2009. *Fertil Steril*. 2012;98(4):893-7. doi: 10.1016/j.fertnstert.2012.06.027. PMID: 22795639.
- <sup>25</sup>Levi A, Dau KQ. Meeting the national health goal to reduce unintended pregnancy. *JOGNN*. 2011;40(6):775-81. doi: <http://dx.doi.org/10.1111/j.1552-6909.2011.01292.x>. PMID: 22092984.
- <sup>26</sup>Office of Disease Prevention and Health Promotion. Family planning. 2010. <https://www.healthypeople.gov/2020/topics-objectives/topic/family-planning/objectives#4425>. Accessed May 17, 2016.
- <sup>27</sup>Johnson K, Posner SF, Biermann J, et al. Recommendations to improve preconception health and health care--United States. A report of the CDC/ATSDR Preconception Care Work Group and the Select Panel on Preconception Care. *MMWR Recomm Rep*. 2006;55(Rr-6):1-23. PMID: 16617292.
- <sup>28</sup>Mayer JP. Unintended childbearing, maternal beliefs, and delay of prenatal care. *Birth*. 1997;24(4):247-52. PMID: 9460316.
- <sup>29</sup>Orr ST, Miller CA, James SA, et al. Unintended pregnancy and preterm birth. *Paediatr Perinat Epidemiol*. 2000;14(4):309-13. PMID: 11101017.

- <sup>30</sup>Barber JS, Axinn WG, Thornton A. Unwanted childbearing, health, and mother-child relationships. *J Health Soc Behav.* 1999;40(3):231-57. PMID: 10513146.
- <sup>31</sup>Hellerstedt WL, Pirie PL, Lando HA, et al. Differences in preconceptional and prenatal behaviors in women with intended and unintended pregnancies. *Am J Public Health.* 1998;88(4):663-6. PMID: 9551015.
- <sup>32</sup>Joyce TJ, Kaestner R, Korenman S. The effect of pregnancy intention on child development. *Demography.* 2000;37(1):83-94. PMID: 10748991.
- <sup>33</sup>Gazmararian JA, Adams MM, Saltzman LE, et al. The relationship between pregnancy intendedness and physical violence in mothers of newborns. The PRAMS Working Group. *Obstet Gynecol.* 1995;85(6):1031-8. PMID: 7770250.
- <sup>34</sup>Goodwin MM, Gazmararian JA, Johnson CH, et al. Pregnancy intendedness and physical abuse around the time of pregnancy: findings from the pregnancy risk assessment monitoring system, 1996-1997. PRAMS Working Group. *Pregnancy Risk Assessment Monitoring System. Matern Child Health J.* 2000;4(2):85-92. PMID: 10994576.
- <sup>35</sup>Oberg E. Preventive services update. *Integr Med (Encinitas).* 2010;9(4):22-6.
- <sup>36</sup>Frayne DJ, Verbiest S, Chelmow D, et al. Health care system measures to advance preconception wellness: consensus recommendations of the clinical workgroup of the National Preconception Health and Health Care Initiative. *Obstet Gynecol.* 2016;127(5):863-72. doi: 10.1097/aog.0000000000001379. PMID: 27054935.
- <sup>37</sup>Moos MK. Preconceptional wellness as a routine objective for women's health care: an integrative strategy. *J Obstet Gynecol Neonatal Nurs.* 2003;32(4):550-6. PMID: 12903706.
- <sup>38</sup>Wolff T, Witkop CT, Miller T, et al. U.S. Preventive Services Task Force evidence syntheses, formerly systematic evidence reviews. folic acid supplementation for the prevention of neural tube defects: an update of the evidence for the U.S. Preventive Services Task Force. 2009. PMID: 20722169.
- <sup>39</sup>Landry DJ, Wei J, Frost JJ. Public and private providers' involvement in improving their patients' contraceptive use. *Contraception.* 2008;78(1):42-51. doi: 10.1016/j.contraception.2008.03.009. PMID: 18555817.
- <sup>40</sup>Guttmacher Institute. Improving Contraceptive Use in the United States. 2008. <https://www.guttmacher.org/report/improving-contraceptive-use-united-states>. Accessed May 17, 2016.
- <sup>41</sup>Hatcher RA. *Contraceptive technology*, 20th ed. [New York, N.Y.]: Ardent Media; 2011.
- <sup>42</sup>Schindler AE. Non-contraceptive benefits of oral hormonal contraceptives. *Int J Endocrinol Metab.* 2013;11(1):41-7. doi: 10.5812/ijem.4158. PMID: 23853619.
- <sup>43</sup>National Women's Law Center. The past and future in women's health: a ten-year review and the promise of the Affordable Care Act and other federal initiatives. Washington, DC; 2010. <http://hrc.nwlc.org/past-and-future>. Accessed May 17, 2016.
- <sup>44</sup>Trussell J. Contraceptive efficacy. In: Hatcher R, Trussell J, Stewart F, et al., eds. *Contraceptive technology* eighteenth revised edition. New York: Ardent Media, 2004.
- <sup>45</sup>Office of Disease Prevention and Health Promotion. Family Planning. 2010. [https://www.healthypeople.gov/2020/data-search/Search-the-Data?&f%5b%5d=field\\_topic\\_area%3A3521](https://www.healthypeople.gov/2020/data-search/Search-the-Data?&f%5b%5d=field_topic_area%3A3521). Accessed May 15, 2016.

- <sup>46</sup>Centers for Disease Control and Prevention. National Ambulatory Medical Care Survey: 2010 Summary Tables. [http://www.cdc.gov/nchs/data/ahcd/namcs\\_summary/2010\\_namcs\\_web\\_tables.pdf](http://www.cdc.gov/nchs/data/ahcd/namcs_summary/2010_namcs_web_tables.pdf). Accessed November 30, 2016.
- <sup>47</sup>Jones J, Mosher W, Daniels K. Current contraceptive use in the United States, 2006-2010, and changes in patterns of use since 1995. *Natl Health Stat Report*. 2012 (60):1-25. PMID: 24988814.
- <sup>48</sup>Mosher WD, Jones J. Use of contraception in the United States: 1982-2008. *Vital Health Stat* 23. 2010 (29):1-44. PMID: 20939159.
- <sup>49</sup>Centers for Disease Control and Prevention. United States Medical Eligibility Criteria (US MEC) for Contraceptive Use, 2010. <http://www.cdc.gov/reproductivehealth/unintendedpregnancy/usmec.htm>. Accessed May 15, 2016.
- <sup>50</sup>Harper CC, Henderson JT, Raine TR, et al. Evidence-based IUD practice: family physicians and obstetrician-gynecologists. *Fam Med*. 2012;44(9):637-45. PMID: 23027156.
- <sup>51</sup>Harper CC, Stratton L, Raine TR, et al. Counseling and provision of long-acting reversible contraception in the US: national survey of nurse practitioners. *Prev Med*. 2013;57(6):883-8. doi: 10.1016/j.ypmed.2013.10.005. PMID: 24128950.
- <sup>52</sup>Curtis K, Jatlaoui T, Tepper N, et al. U.S. selected practice recommendations for contraceptive use, 2016 (U.S. SPR). *MMWR Recomm Rep*. 2016;65(4):1-66. doi: <http://dx.doi.org/10.15585/mmwr.rr6504a1>.
- <sup>53</sup>World Health Organization. Medical eligibility criteria for contraceptive use -- 4th ed. 2009. <https://books.google.com/books?hl=en&lr=&id=pouTfH33wF8C&oi=fnd&pg=PP2&dq=Medical+Eligibility+Criteria+for+Contraceptive+Use+---+4th+ed.&ots=8W-UGSRozR&sig=fZOWvmPOKvpyIEJ-NujtrS6PjmJg#v=onepage&q=Medical%20Eligibility%20Criteria%20for%20Contraceptive%20Use%20--%204th%20ed.&f=false>. November 30, 2016.
- <sup>54</sup>U.S. Selected Practice Recommendations for Contraceptive Use, 2013: adapted from the World Health Organization selected practice recommendations for contraceptive use, 2nd edition. *MMWR Recomm Rep*. 2013;62(Rr-05):1-60. PMID: 23784109.
- <sup>55</sup>Gavin L, Pazol K. Update: providing quality family planning services — recommendations from CDC and the U.S. Office of Population Affairs. *MMWR Morb Mortal Wkly Rep*. 2015;65:231-4. doi: <http://dx.doi.org/10.15585/mmwr.mm6509a3>.
- <sup>56</sup>Ott MA, Sucato GS, Committee on Adolescence. Contraception for adolescents. *Pediatrics*. 2014;134(4):e1257-81. doi: <http://dx.doi.org/10.1542/peds.2014-2300>. PMID: 25266435.
- <sup>57</sup>Committee Opinion No. 642: Increasing access to contraceptive implants and intrauterine devices to reduce unintended pregnancy. *Obstet Gynecol*. 2015;126(4):e44-8. doi: 10.1097/aog.0000000000001106. PMID: 26393458.
- <sup>58</sup>Pickle S, Wu J, Burbank-Schmitt E. Prevention of unintended pregnancy: a focus on long-acting reversible contraception. *Primary Care; Clinics in Office Practice*. 2014;41(2):239-60. doi: <http://dx.doi.org/10.1016/j.pop.2014.02.004>. PMID: 24830607.
- <sup>59</sup>American College of Obstetricians and Gynecologists. Well-woman care: assessments & recommendations. 2013. <https://www.acog.org/-/media/Departments/Annual-Womens-Health-Care/Primary-and-Preventive-Care-ONLINE.pdf?dmc=1&ts=20160316T1529528590>. November 30, 2016.

- <sup>60</sup>American Academy of Family Physicians. Contraceptive advice. 2014. <http://www.aafp.org/about/policies/all/contraceptive.html>. Accessed May 15, 2016.
- <sup>61</sup>American Academy of Pediatrics Committee on Adolescence, Blythe MJ, Diaz A. Contraception and adolescents. *Pediatrics*. 2007;120(5):1135-48. PMID: 17974753.
- <sup>62</sup>AMA Women Physicians Congress. Policy compendium on issues relation to women physicians and women's health. Chicago: American Medical Association: 2013.
- <sup>63</sup>Boonstra HD. Winning campaign: California's concerted effort to reduce its teen pregnancy rate. *Guttmacher Policy Review*. 2010;13(2):18-24.
- <sup>64</sup>Burlone S, Edelman A, Dantas S, et al. Estimated cost savings with providing universal contraception in the state of Oregon. *Contraception*. 2010;82(2):190-1. doi: <http://dx.doi.org/10.1016/j.contraception.2010.04.053>.
- <sup>65</sup>Dehlendorf C, Henderson JT, Vittinghoff E, et al. Association of the quality of interpersonal care during family planning counseling with contraceptive use. *Am J Obstet Gynecol*. 2016;215(1):78.e1-9. doi: 10.1016/j.ajog.2016.01.173. PMID: 26827879.
- <sup>66</sup>Schwarz EB, Parisi SM, Williams SL, et al. Promoting safe prescribing in primary care with a contraceptive vital sign: a cluster-randomized controlled trial. *Annals of family medicine*. 2012;10(6):516-22. PMID: CN-00853650 UPDATE.
- <sup>67</sup>Lee JK, Parisi SM, Akers AY, et al. The impact of contraceptive counseling in primary care on contraceptive use.[Erratum appears in *J Gen Intern Med*. 2011;26(7):822 Note: Borrero, Sonya [corrected to Borrero, Sonya]]. *Journal of General Internal Medicine*. 2011;26(7):731-6. doi: <http://dx.doi.org/10.1007/s11606-011-1647-3>. PMID: 21301983.
- <sup>68</sup>Simmons KB, Edelman AB, Li H, et al. Personalized contraceptive assistance and uptake of long-acting, reversible contraceptives by postpartum women: a randomized, controlled trial. *Contraception*. 2013;88(1):45-51. doi: <http://dx.doi.org/10.1016/j.contraception.2012.10.037>. PMID: 23218851.
- <sup>69</sup>Langston AM, Rosario L, Westhoff CL. Structured contraceptive counseling--a randomized controlled trial. *Patient Educ Couns*. 2010;81(3):362-7. PMID: CN-00779150 UPDATE.
- <sup>70</sup>Speidel JJ, Harper CC, Shields WC. The potential of long-acting reversible contraception to decrease unintended pregnancy. *Contraception*. 2008;78(3):197-200. doi: 10.1016/j.contraception.2008.06.001. PMID: 18692608.
- <sup>71</sup>Harper CC, Rocca CH, Thompson KM, et al. Reductions in pregnancy rates in the USA with long-acting reversible contraception: a cluster randomised trial. *The Lancet*. 2015;386(9993):562-8. doi: 10.1016/S0140-6736(14)62460-0.