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Using updated clinical recommendations to support contraceptive decision-making: U.S. medical eligibility criteria for contraceptive use, 2024[★]

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Abstract

Objectives: In August 2024, the U.S. Centers for Disease Control and Prevention updated U.S. Medical Eligibility Criteria for Contraceptive Use (U.S. MEC), which provides recommendations for safe use of contraception for women with certain characteristics and medical conditions. This paper provides a summary of the evidence and context for new and updated U.S. MEC recommendations.

Study design: The 2024 U.S. MEC was updated through a rigorous, multi-year process of determining priorities that would have high impact on clinical care, conducting systematic reviews of the evidence, and considering perspectives of health care providers and patients on how the evidence could best support updated recommendations.

Results: New U.S. MEC recommendations were added for chronic kidney disease, specifically for three subconditions: current nephrotic syndrome, hemodialysis, and peritoneal dialysis. Revisions were made to several existing recommendations, such as those for sickle cell disease, anticoagulant therapy use, various thrombotic conditions, cirrhosis, liver tumors, solid organ transplantation, and intrauterine device placement in the postpartum period. Updated recommendations include those that reflect decreased safety concerns for some medical conditions (e.g., progestin-only contraception and some liver diseases) and increased safety concerns for others (e.g., combined hormonal contraception and depot medroxyprogesterone acetate for women with sickle cell disease). Recommendations for new contraceptive methods were added.

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CRediT authorship contribution statement

Kathryn Curtis: Conceptualization, Methodology, Writing – original draft, Writing – review & editing. **Naomi Tepper:** Conceptualization, Methodology, Writing – review & editing. **Antoinette Nguyen:** Conceptualization, Methodology, Writing – review & editing. **Maura Whiteman:** Conceptualization, Methodology, Writing – review & editing.

Conclusions: Evidence-based clinical guidelines can be used by health care providers to support patient-centered contraceptive counseling and services and remove unnecessary barriers to accessing and using contraception. Provider tools including a mobile app are available to help with implementation of the updated recommendations.

Implications: Keeping U.S. MEC up-to-date is critical for supporting contraceptive decision-making and improving access to contraception and reproductive health care. This includes new research to address current evidence gaps, rigorous methodology for continuous evidence identification and synthesis, state-of-the-art methods for guideline development, and a broad range of dissemination and implementation strategies.

Keywords

Clinical practice guidelines; Contraception; Reproductive health; Contraceptive decision-making

1. Introduction

Since 2010, the U.S. Centers for Disease Control and Prevention (CDC) has produced evidence-based clinical guidance on contraceptive care, with the intent of removing unnecessary medical barriers to accessing and using contraception. *U.S. Medical Eligibility Criteria for Contraceptive Use* (U.S. MEC) provides recommendations for safe use of contraceptive methods for women with certain personal characteristics or medical conditions [1]. A companion document, *U.S. Selected Practice Recommendations for Contraceptive Use* (U.S. SPR), provides recommendations that address provision of contraceptive methods and management of side effects and issues related to contraceptive method use [2]. Health care providers, such as primary care providers, specialists and subspecialists, and pharmacists, can use these guidelines to support contraceptive decision-making through patient-centered contraceptive counseling and care [1]. In August 2024, CDC published updated versions of U.S. MEC and U.S. SPR [1,2], replacing the 2016 versions of both documents.

The objectives of this paper are to describe the updated 2024 U.S. MEC recommendations, provide a summary of the evidence and context for new and updated recommendations, and discuss dissemination and implementation strategies.

2. Materials and methods

The methods for developing and updating U.S. MEC recommendations are described in detail in the U.S. MEC guidance document [1]. Briefly, we considered whether any of the existing 2016 U.S. MEC recommendations might warrant updating based on new evidence and whether there was a need for new recommendations to be added to the guidance. We considered new evidence published since the previous update in 2016 and feedback received from health care providers and the public. In January 2022, we held scoping meetings with external participants representing health care providers and health care provider organizations to solicit their individual input on the scope for the update. CDC identified several topics to consider when updating the guidance, including revision of existing recommendations for certain characteristics or medical conditions,

addition of recommendations for new characteristics or medical conditions, and addition of recommendations for new contraceptive methods. We then conducted systematic reviews of the evidence for each of the topics being considered, following standard systematic review methodology [3]. We used the Grading of Recommendations Assessment, Development and Evaluation (GRADE) approach to evaluate the certainty of the evidence [4,5].

In January 2023, CDC held a meeting with external participants who were invited to provide their individual perspectives on the scientific evidence presented and implications for practice. Participants included a wide range of experts in contraception provision, research, and access, including health care providers, researchers, patient representatives, and subject matter experts in some of the medical conditions being considered. Meeting participants provided their individual perspectives on how the evidence could be used to develop recommendations that would meet the needs of U.S. health care providers and their patients. Participants also provided feedback on the certainty of evidence, the balance of benefits and harms, and patient values and preferences. New to the process for this update was the inclusion of patient experiences, values, preferences, and information needs related to contraceptive decision-making, which were gathered during patient listening sessions prior to the meeting. We also noted areas of research identified during the meeting for which additional investigation would be helpful. After the January 2023 meeting, CDC determined the new and revised U.S. MEC 2024 recommendations, taking into consideration the individual perspectives provided by the meeting participants.

3. Results

U.S. MEC recommendations provide guidance on the safety of specific contraceptive methods for over 1800 recommendations on over 60 medical conditions and personal characteristics. The recommendations are provided in four numeric categories. U.S. MEC 1 indicates medical conditions or characteristics for which there is no restriction for use of a specific contraceptive method, U.S. MEC 2 indicates conditions for which the advantages of using a specific method generally outweigh the theoretical or proven risks, U.S. MEC 3 indicates conditions for which the theoretical or proven risks usually outweigh the advantages of using a specific method, and U.S. MEC 4 indicates conditions that represent an unacceptable health risk if a specific method is used (Fig.1). The recommendations are for contraception used for pregnancy prevention and do not consider the use of contraception for treatment of medical conditions because the eligibility criteria in these situations might differ.

In U.S. MEC 2024, new recommendations are included for chronic kidney disease (CKD), specifically for the subconditions of current nephrotic syndrome, hemodialysis, and peritoneal dialysis. Revisions to existing recommendations were made for: breastfeeding, postpartum, postabortion, obesity, surgery, history of deep venous thrombosis (DVT) or pulmonary embolism (PE) with or without anticoagulant therapy, thrombophilia, superficial venous thrombosis, valvular heart disease, peripartum cardiomyopathy, systemic lupus erythematosus, cirrhosis, liver tumor, sickle cell disease, and solid organ transplantation. Two recommendations updated previously in 2020 were included in the revised U.S. MEC document: revisions to recommendations for high risk for human immunodeficiency virus

(HIV) and revisions to recommendations for drug interactions with antiretrovirals to include prevention in addition to treatment for HIV [6]. Finally, recommendations for several additional contraceptive methods were newly added to the guidance, including new doses or formulations of combined oral contraceptives (COCs), contraceptive patches, vaginal rings, progestin-only pills (POPs), levonorgestrel (LNG) intrauterine devices (IUDs), and vaginal pH modulator. Tables 1–3 provide a summary of the changes from the 2016 to 2024 U.S. MEC recommendations.

3.1. Hormonal contraception and risk for thromboembolism

U.S. MEC provides recommendations for many medical conditions and personal characteristics that are associated with an increased risk for thromboembolism, such as history of arterial thromboembolism (ATE) or venous thromboembolism (VTE), thrombophilia, sickle cell disease, and being postpartum. It has long been recognized that combined hormonal contraceptive (CHC) methods that include estrogen increase risk for thromboembolism in the general population. Meta-analyses have reported pooled relative risks of 3.0–3.5 for COC use and VTE, 1.7–2.5 for ischemic stroke, and 1.3–1.6 for myocardial infarction, compared with non-COC use [7–11]. While absolute rates of thromboembolism associated with CHC use in the general population of users remain low (e.g., 8–10 per 10,000 women-years for VTE) [12,13], there is concern about the use of these methods among patients who have medical conditions that increase thromboembolic risk [1]. Studies have observed increased relative risks for thromboembolism with COC use and increasing age, obesity, smoking, hypertension, thrombogenic mutations, systemic lupus erythematosus, and diabetes [14–19]. This concern is reflected in the U.S. MEC recommendations, which are usually U.S. MEC 3 or U.S. MEC 4 for medical conditions or characteristics that increase risk for thromboembolism.

There is less evidence on thrombotic risk with use of progestin-only methods than with CHCs. However, since the 2016 U.S. MEC, an accumulating body of evidence suggests that there may be some increased risk for VTE with depot medroxyprogesterone acetate (DMPA) use, which has not been observed with other progestin-only methods, including POPs, implants, and LNG-IUDs [20]. A meta-analysis reported a pooled relative risk of 2.6 (95% confidence interval [CI] 1.7–3.9) for VTE among DMPA users compared with non-users, but no increased relative risk for POP or LNG-IUD users [21]. A large, nested case-control study in the United States analyzed claims data for over 128,000 women and observed an increased odds of VTE with DMPA use (odds ratio 2.4, 95% CI 2.0–2.9) compared with non-use of hormonal methods; odds ratios for other progestin-only methods (implant, norethindrone POPs, and LNG-IUD) suggested no increased risk [22]. Risk for ATE does not appear to be elevated with use of progestin-only contraceptive methods [20,21].

This evidence on risk for thromboembolism associated with use of various hormonal contraceptive methods, both in the general population of users and among women with thrombogenic conditions, was considered for many of the changes that were made in the 2024 U.S. MEC described in the sections below. Several of the revisions to the recommendations for progestin-only methods include adjustments that reflect some increased concern for DMPA and decreased concern for other progestin-only methods.

3.2. New U.S. MEC recommendation: Chronic kidney disease

Prior to 2024, U.S. MEC did not include recommendations for women with CKD, although recommendations were included for common underlying conditions or comorbidities related to CKD, such as hypertension, diabetes, and systemic lupus erythematosus [1]. Therefore, new recommendations focus on severe CKD, specifically the subconditions of current nephrotic syndrome, hemodialysis, and peritoneal dialysis. Women with CKD are at increased risk for thromboembolism compared with the general population [23–30]. Contraceptive methods containing estrogen, and possibly DMPA, which also have been associated with increased risk for thromboembolism [7,9,20], may further increase this risk in women with CKD. Women with severe CKD also have a higher prevalence of fracture than the general population [31–33]. Use of DMPA, which has been associated with small changes in bone mineral density [34], might further elevate risk for fracture among women with severe CKD. However, there is limited direct data on the safety of contraceptive method use among women with CKD, and no data on risk for thromboembolism or adverse effects on bone [35]. Theoretical concerns about IUD use among this patient population are minimal; data are limited to case reports, including three cases of peritonitis among IUD users on peritoneal dialysis [35].

The 2024 U.S. MEC provides recommendations for CKD with current nephrotic syndrome, hemodialysis, and peritoneal dialysis (Table 1) [1]. For all three subconditions, CHCs are U.S. MEC 4, primarily because of the increased risk for thromboembolism among this patient population and concerns that CHC use may further increase that risk. DMPA is U.S. MEC 3, given concerns for increased risk for thromboembolism and potential for adverse effects on bone mineral density. Drospirenone POPs among women with CKD with known hyperkalemia are U.S. MEC 4 because of the risk for worsening hyperkalemia. A clarification states that for women with CKD without known hyperkalemia (U.S. MEC 2), checking serum potassium level during first cycle of drospirenone POPs can be considered. All other methods, including norethindrone and norgestrel POPs, implants, copper IUDs, LNG-IUDs, and barrier methods, are U.S. MEC 1 or U.S. MEC 2.

3.3. Updated U.S. MEC recommendations

3.3.1. Sickle cell disease: One notable revision to the 2024 U.S. MEC recommendations reflected an increased safety concern for hormonal contraceptive use and sickle cell disease. An updated systematic review found that evidence on the safety of hormonal contraceptive use among women with sickle cell disease remains limited [36]. However, there has been increasing evidence and recognition that sickle cell disease is associated with a high risk for both ATE and VTE [37–43]. Approximately 24% of patients with sickle cell disease will have a stroke by age 45 years [43], and 12% will have a VTE by age 40 years [38]. A meta-analysis reported that adults with sickle cell disease had an increased risk for VTE compared with the general population (odds ratio 4.4, 95% CI 2.6–7.5), with much higher estimates among pregnant and postpartum women with sickle cell disease (odds ratio 33.2, 95% CI 9.7–113.4) [42]. In addition, patterns of thromboembolism may be different and more severe among people with sickle cell disease, including higher risk for PE versus DVT than in the general population [42] and high rates of VTE recurrence (13.2% at 1 year and 24.1% at 5 years) [37].

Recommendations for CHC use for women with sickle cell disease were revised from U.S. MEC 2 to U.S. MEC 4, primarily based on accumulating evidence for the high risk for both ATE and VTE associated with sickle cell disease (Table 2). Similarly, DMPA was revised from U.S. MEC 1 to U.S. MEC 2/3, with a clarification that the category should be assessed according to the severity of sickle cell disease and the risk for thrombosis. All other recommendations remained the same, including U.S. MEC 1 for POPs, implant, and LNG-IUD, and U.S. MEC 2 for copper IUD reflecting concern about increased risk for blood loss.

3.3.2. Current or history of DVT/PE (VTE), receiving anticoagulant therapy:

For women with current or history of VTE, there is concern that hormonal contraceptive use might further increase risk for recurrent VTE. However, there are few studies assessing risk for recurrent VTE associated with concurrent use of hormonal contraception and anticoagulant therapy. The available evidence suggests that women using hormonal contraception while receiving anticoagulant therapy are at low or no risk for recurrent VTE [44]. In particular, new data suggests that among women with acute VTE currently receiving therapeutic doses of anticoagulants, the incidence of recurrent VTE was similar among CHC users, progestin-only contraceptive users, and women not using hormonal therapy [45].

Therefore, CHC use for women with current or history of DVT/PE, using a therapeutic dose of anticoagulants, was changed from U.S. MEC 4 to U.S. MEC 3 (Table 3). Recommendations for CHC use for those using a prophylactic dose of anticoagulants or no anticoagulants after DVT/PE remain U.S. MEC 4 for those at higher risk for recurrence and U.S. MEC 3 for those at lower risk for recurrence. Recommendations for DMPA remain U.S. MEC 2 for those on a therapeutic dose of anticoagulants. DMPA use was changed from U.S. MEC 2 to U.S. MEC 3 for those on a prophylactic dose of anticoagulants or no anticoagulants with higher risk for recurrence, reflecting data on increased risk for VTE with DMPA use (Table 2) [20], but remain U.S. MEC 2 for those on a prophylactic dose or no anticoagulants with lower risk for recurrence. All other methods, including progestin-only methods other than DMPA (i.e., implant, POP, and LNG-IUD) and copper IUD, remain U.S. MEC 2 for women with current or history of DVT/PE on anticoagulant therapy (therapeutic or prophylactic dose). A clarification for the recommendations discusses that women using anticoagulant therapy are at risk for gynecologic complications, such as heavy or prolonged bleeding and hemorrhagic ovarian cysts. Copper IUDs might worsen bleeding. However, hormonal contraceptives may prevent or treat this complication; when a contraceptive method is used as a therapy, rather than solely for contraception, the risk/benefit ratio might differ.

3.3.3. Progestin-only contraception and medical conditions or personal characteristics that increase risk for venous thromboembolism: There is limited direct evidence on risk for thromboembolism with use of progestin-only methods among women with medical conditions [20]. As with the general population, DMPA was associated with increased risk for VTE among those with thrombogenic conditions, such as diabetes or being postpartum. However, DMPA was not associated with increased risk for ATE, and

other progestin-only methods were generally not associated with increased risk for ATE or VTE, among women with thrombogenic conditions [20].

The accumulating evidence that risk for VTE may vary among different progestin-only contraceptive methods was used to update several recommendations for conditions that also increase VTE risk (Tables 2–3) [20]. For several conditions, this resulted in recommendations that are different for DMPA than for LNG-IUD, implant, and POPs. Some changes reflect decreased safety concerns for LNG-IUD, implant, and POPs, including a change from U.S. MEC 3 to U.S. MEC 2 for systemic lupus erythematosus with positive or unknown antibodies, and changes from U.S. MEC 2 to U.S. MEC 1 for major surgery with prolonged immobilization. Other changes reflect increased safety concerns for DMPA, including changes from U.S. MEC 2 to U.S. MEC 3 for thrombophilia and peripartum cardiomyopathy (moderately or severely impaired), and changes from U.S. MEC 1 to U.S. MEC 2 during some of the earlier postpartum periods among women with risk factors for VTE, and for superficial venous thrombosis, complicated valvular heart disease, and peripartum cardiomyopathy (normal or mild impairment).

3.3.4. Solid organ transplantation: For women with solid organ transplantation, concern has focused on immunosuppression and the potential for increased risk for pelvic infection and decreased effectiveness with IUD use [46]. Accumulating evidence from more recent, higher quality studies has not supported these concerns [47]. No pelvic infections or pregnancies were observed among women with solid organ transplantation in four new non-comparative cohort studies of IUD users [48–51], and data from a new comparative cohort study suggested that LNG-IUD use among women with solid organ transplantation is effective, based on endometrial markers of local inflammatory response [52]. While direct evidence among women with solid organ transplantation remains limited, a systematic review of women with HIV, another immunosuppressed state, did not find increased risk for pelvic infection associated with IUD use [53]. Evidence is very limited for use of other contraceptive methods among women with solid organ transplantation. Many women with solid organ transplantation are at increased risk for cardiovascular disease, due to conditions such as diabetes, hypertension, and hyperlipidemia [54,55], and theoretical concerns remain about risk for thromboembolism with CHC and DMPA use for these women. Additionally, osteoporosis and fracture risk are increased in patients with end-stage organ disease and in the early post-transplant period, which may be further increased with long-term immunosuppressive therapy [56,57]. Therefore, DMPA use, which is associated with small decreases in bone mineral density, may further increase this risk [34].

Recommendations were updated for women with solid organ transplantation for IUDs (copper and LNG) and for DMPA (Tables 2–3). Updated U.S. MEC guidance recommends that IUDs can generally be used by women with solid organ transplantation (U.S. MEC 1 or U.S. MEC 2). Specifically, for women with graft failure, recommendations for initiation of an IUD (copper or LNG) were changed from U.S. MEC 3 to U.S. MEC 2. For continuation of an IUD among those with graft failure, and initiation and continuation of the IUD among those with no graft failure, recommendations changed from U.S. MEC 2 to U.S. MEC 1. For DMPA use among women with solid organ transplantation (with and without graft failure) who are receiving long-term immunosuppressive therapy with a history of or risk factors for

non-traumatic fractures, the recommendation changed from U.S. MEC 2 to U.S. MEC 3; otherwise, DMPA for women with solid organ transplantation remains U.S. MEC 2.

3.3.5. Cirrhosis: Because hormonal contraception is metabolized by the liver, there may be concern that use of hormonal contraception among women with liver disease could worsen liver function or affect liver disease progression. While evidence suggests that hormonal contraceptive use among women with viral hepatitis (specifically hepatitis B or C) does not increase progression or severity of disease, no evidence is available for effects of hormonal contraception among women with cirrhosis [58]. One theoretical concern about hormonal contraceptive use among women with cirrhosis, especially decompensated cirrhosis, is that metabolism of contraceptive hormones might be impaired due to cirrhosis. Impaired metabolism of hormonal contraception could lead to increased circulating hormone levels and subsequent increased risk for adverse events, such as thromboembolism. This risk could be greater for estrogen-containing methods and DMPA, which are associated with increased risk for thromboembolism in the general population [7,9,20].

Recommendations for women with decompensated cirrhosis changed from U.S. MEC 3 to U.S. MEC 2 for LNG-IUD, implants, and progestin-only pills (Table 3); DMPA remains U.S. MEC 3, CHCs remain U.S. MEC 4, and copper IUD remains U.S. MEC 1. Recommendations for compensated cirrhosis remain U.S. MEC 1 for all methods.

3.3.6. Liver tumors: U.S. MEC provides recommendations for liver tumors, including benign tumors (hepatocellular adenoma and focal nodular hyperplasia) and malignant tumors (hepatocellular carcinoma). Updated evidence for the effects of hormonal contraceptive use on liver tumors continued to suggest that hepatocellular adenomas are generally estrogen responsive, with tumor progression more likely among COC users than non-users, and decreases in tumor size with COC discontinuation [58]. However, accumulating evidence suggests that hepatocellular adenoma tumor size changes among progestin-only contraceptive users were similar to non-users, and that hepatocellular adenomas generally regress or remain stable with progestin-only contraceptive use [58]. As found in previous reviews, changes in focal nodular hyperplasia tumors were generally independent of hormonal contraceptive use, and no evidence was identified for hepatocellular carcinoma [58].

Among women with liver tumors, recommendations for those with hepatocellular adenoma changed from U.S. MEC 3 to U.S. MEC 2 for LNG-IUD, implants, and POPs, based on the additional evidence that hepatocellular adenoma growth was not associated with progestin exposure (Table 3); DMPA remains U.S. MEC 3, and CHCs remain U.S. MEC 4. Recommendations remain the same for focal nodular hyperplasia (U.S. MEC 1 for copper IUD and U.S. MEC 2 for all hormonal methods) and for hepatocellular carcinoma (U.S. MEC 1 for copper IUD, U.S. MEC 3 for all progestin-only methods including LNG-IUD, and U.S. MEC 4 for CHCs).

3.3.7. IUD placement in the postpartum period: While postpartum IUD placement is safe, there is increased risk for expulsion when the IUD is placed immediately postpartum, which may leave a woman without contraception [59]. However, data on both absolute and

relative risk for expulsion has been limited and varied [59]. Data from a previous review suggested that IUD expulsion rates with immediate post-placental placement (< 10 minutes after delivery of the placenta) were lower than with placement 10 minutes to less than 4 weeks, but still higher than with interval placement (4 weeks postpartum or later) [59]. Three more recent pooled analyses of expulsion rates show that while there is variability in expulsion rates at different times of placement during the postpartum period, rates for all postpartum time periods are substantially greater than rates with interval placement [60–62]. In one of the pooled analyses, rates of expulsion were 8.6% (range among studies 0.03–31.9%) for immediate placement, 25.1% (range 3.5–46.7%) for placement greater than 10 minutes and less than 72 hours, and 4.5% (range 0.0–46.7%) for placement greater than 10 minutes and less than 4 weeks, compared with 1.6% (range 0.0–4.8%) for interval placement [61].

Recommendations for immediate IUD placement (< 10 minutes after delivery of the placenta) changed from U.S. MEC 1 to U.S. MEC 2 for copper IUDs (regardless of breastfeeding status) (Table 2). For LNG-IUDs, the recommendation changed from U.S. MEC 1 to U.S. MEC 2 for women who were not breastfeeding (Table 2); for women who were breastfeeding, the recommendation remained U.S. MEC 2. A clarification of the recommendation states that postpartum placement of IUDs is safe and does not appear to increase health risks associated with IUD use such as infection. Higher rates of expulsion during the postpartum period should be considered as they relate to effectiveness along with patient access to interval placement when expulsion rates are lower.

3.3.8. Postabortion (spontaneous or induced): There is potential for drug-drug interactions between hormonal contraception and mifepristone (an anti-progestin) regimens [63]. Evidence from a randomized clinical trial suggests that while there was no difference in risk for ongoing pregnancy with immediate versus delayed start of contraceptive implants, there was a higher percentage of ongoing pregnancies with immediate versus delayed DMPA administration (3.6% vs 0.9% respectively, difference 2.7%; 90% CI 0.4–5.6%) [63–65].

Given the evidence about a possible interaction between mifepristone and DMPA, the recommendation for DMPA use after first trimester medication abortion with a regimen that includes mifepristone was changed from U.S. MEC 1 to U.S. MEC 2 (Table 2). An accompanying clarification states that concurrent administration of DMPA with mifepristone might slightly decrease medication abortion effectiveness and increase risk for ongoing pregnancy, and risk for ongoing pregnancy with concurrent administration of DMPA with mifepristone should be considered along with personal preference and access to follow-up abortion and contraceptive care. All other post-abortion recommendations remain U.S. MEC 1 or U.S. MEC 2, with the exception of U.S. MEC 4 for IUD placement in the setting of postseptic abortion.

3.3.9. New contraceptive methods: Several new contraceptive methods were added to the 2024 U.S. MEC [1]. Most were new doses or formulations of existing methods, such as COCs, contraceptive patches, vaginal rings, POPs, and LNG-IUDs. New COCs include estradiol valerate or estetrol as the estrogen component. While these newer estrogens are less potent than ethinyl estradiol and may be less thrombogenic [66], recommendations are

the same for all COC formulations, pending more data on the thrombotic risk associated with these newer formulations. Drospirenone POPs were also added; all U.S. MEC recommendations for drospirenone POPs are the same as for norethindone and norgestrel POPs, with the exception of those described in Section 3.2 for CKD. In addition, a vaginal pH modulator was added as a new barrier method, with all recommendations either U.S. MEC 1 or U.S. MEC 2.

4. Discussion

Up-to-date, evidence-based clinical guidelines are essential tools for health care providers. The 2024 U.S. MEC was updated through a rigorous, multi-year process of determining priorities that would have high impact for health care providers and their patients, conducting systematic reviews of the evidence, and considering perspectives of health care providers and patients on use of the evidence to develop updated recommendations [1]. These updated guidelines include recommendations for new medical conditions, revise previous recommendations based on new evidence, and contain all contraceptive methods approved by the U.S. Food and Drug Administration. While new evidence identified for this update of U.S. MEC has strengthened these recommendations, there continue to be research gaps in critical areas; future research can address these gaps and allow for further guideline revision as evidence becomes available [67].

While U.S. MEC provides recommendations on safe use of contraceptive methods, U.S. SPR includes a broad set of recommendations on common contraceptive management questions, such as how to start a contraceptive method, whether any exams or tests are needed before starting, medications for IUD placement, how to manage side effects such as bleeding irregularities or missed doses, and how many pill packs to provide [2]. Updates to U.S. SPR 2024 include new recommendations since 2016 on self-administration of injectable contraception (initially published in 2021) [68] and testosterone use and risk for pregnancy, and revised recommendations on provision of medications for IUD placement and management of bleeding irregularities during implant use [2]. For provision of medications for IUD placement, the 2016 recommendation that misoprostol is not recommended for routine use, but that lidocaine (paracervical block) might be useful for reducing pain, was retained. In addition, topical lidocaine was added as an intervention that might be useful for reducing pain. For management of bleeding irregularities with implant use, recommended treatments were divided by those that might improve bleeding during treatment use, though bleeding is likely to recur after treatment cessation (hormonal treatment [e.g., 20–30 ug ethinyl estradiol COCs or estrogen]; antifibrinolytic agents [e.g., tranexamic acid], 5 days), and treatments that might improve bleeding during treatment and whose effects might persist for some time after treatment cessation (non-steroidal anti-inflammatory drugs [e.g., celecoxib, ibuprofen, or mefenamic acid], 5–7 days; selective estrogen receptor modulators [e.g., tamoxifen], 7–10 days). For both recommendations, a patient-centered approach that prioritizes a patient's preferences can be used to explore patient goals and desire for intervention [2].

Health care providers can use these updated recommendations to remove unnecessary medical barriers to accessing and using contraception and to support the provision of

patient-centered contraceptive counseling and services. U.S. MEC discusses the importance of shared decision-making using a patient-centered model that recognizes the expertise of both the health care provider and the patient and lists specific points on using the recommendations to support contraceptive decision-making (Fig. 2). CDC also released new provider tools to help with implementation of the updated recommendations. Provider tools include summary charts and figures of recommendations [69], along with a mobile app for health care providers that includes both U.S. MEC and U.S. SPR recommendations [70–72]. The recommendations and tools are intended for use by health care providers, medical directors and program managers, professional organizations, and others involved in improving contraceptive care. Several professional organizations have endorsed the updated recommendations [73–76], and many others have played critical roles in disseminating the recommendations. Future work can include continued efforts to expand the development and use of evidence-based guidelines such as U.S. MEC and U.S. SPR to improve access to contraception and sexual and reproductive health care in the United States. Activities can focus on new research to address current evidence gaps [67], rigorous methodology for continuous evidence identification and synthesis [3,77,78], state-of-the-art methods for guideline development [77,79–81], and a broad range of dissemination and implementation strategies [82–84].

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- 1 = A condition for which there is no restriction for the use of the contraceptive method.
- 2 = A condition for which the advantages of using the method generally outweigh the theoretical or proven risks.
- 3 = A condition for which the theoretical or proven risks usually outweigh the advantages of using the method.
- 4 = A condition that represents an unacceptable health risk if the contraceptive method is used.

Fig. 1. Categories of medical eligibility criteria for contraceptive use*. *Nguyen AT, Curtis KM, Tepper NK, et al. U.S. medical eligibility criteria for contraceptive use, 2024. MMWR Recomm Rep 2024;73:1–126. <https://doi.org/10.15585/mmwr.rr7304a1>.

- CDC acknowledges the paramount importance of personal autonomy in contraceptive decision-making.
- Patients should have equitable access to the full range of contraceptive methods.
- Contraceptive services should be offered in a noncoercive manner that honors a patient's values, goals, and reproductive autonomy.
- Shared decision-making and patient-centered approaches recognize the expertise of both the health care provider and the patient.
- A patient-centered approach to contraceptive decision-making
 - prioritizes a patient's preferences and reproductive autonomy rather than a singular focus on pregnancy prevention,
 - respects the patient as the main decision-maker in contraceptive decisions, and
 - includes respecting the decision not to use contraception or to discontinue contraceptive method use.
- U.S. MEC and U.S. SPR recommendations can be used by health care providers to support patients in contraceptive decision-making.
- U.S. MEC and U.S. SPR recommendations can be used by health care providers to remove unnecessary medical barriers to accessing and using contraception.

Fig. 2.

Using the U.S. MEC and U.S. SPR recommendations to support contraceptive decision-making*.

*Adapted from: Nguyen AT, Curtis KM, Tepper NK, et al. U.S. medical eligibility criteria for contraceptive use, 2024. *MMWR Recomm Rep* 2024;73:1–126. <https://doi.org/10.15585/mmwr.rr7304a1>. U.S. MEC = U.S. Medical Eligibility Criteria for Contraceptive Use; U.S. SPR = U.S. Selected Practice Recommendations for Contraceptive Use.

Table 1

Summary of recommendations for chronic kidney disease and use of intrauterine devices and hormonal contraception, U.S. medical eligibility criteria for contraceptive use, 2024

Condition	Method	Category ^a
Chronic kidney disease	Cu-IUD (initiation)	1
a. Current nephrotic syndrome	Cu-IUD (continuation)	1
	LNG-IUD (initiation)	2
	LNG-IUD (continuation)	2
	Implant	2
	DMPA	3
	POP	2
	DRSP POP with known hyperkalemia	4 ^b
	CHC	4
b. Hemodialysis	Cu-IUD (initiation)	1
	Cu-IUD (continuation)	1
	LNG-IUD (initiation)	2
	LNG-IUD (continuation)	2
	Implant	2
	DMPA	3
	POP	2
	DRSP POP with known hyperkalemia	4 ^b
	CHC	4
c. Peritoneal dialysis	Cu-IUD (initiation)	2
	Cu-IUD (continuation)	1
	LNG-IUD (initiation)	2
	LNG-IUD (continuation)	2
	Implant	2
	DMPA	3
	POP	2
	DRSP POP with known hyperkalemia	4 ^b
	CHC	4

CHC, combined hormonal contraceptive; Cu-IUD, copper intrauterine device; DMPA, depot medroxyprogesterone acetate; DRSP, drospirenone; LNG-IUD, levonorgestrel intrauterine device; POP, progestin-only pill.

^aU.S. MEC categories: 1 = A condition for which there is no restriction for the use of the contraceptive method; 2 = A condition for which the advantages of using the method generally outweigh the theoretical or proven risks; 3 = A condition for which the theoretical or proven risks usually outweigh the advantages of using the method; 4 = A condition that represents an unacceptable health risk if the contraceptive method is used. For complete guidance, including any clarifications to the recommendations, please see: U.S. Medical Eligibility Criteria for Contraceptive Use, 2024 | MMWR (<https://www.cdc.gov/mmwr/volumes/73/rr/rr7304a1.htm>).

^bPersons with known hyperkalemia should not use DRSP POPs because of the risk for worsening hyperkalemia (category 4). For persons with CKD without known hyperkalemia (category 2), consider checking serum potassium level during first cycle of DRSP POPs.

Table 2

Summary of changes in recommendations indicating increased safety concerns with use of intrauterine devices and hormonal contraception, U.S. medical eligibility criteria for contraceptive use, 2024

Condition	Method	Category change ^d	
		2016	2024
Breastfeeding; 30–42 d postpartum, with risk other factors for VTE ^b	DMPA	1	2
DVT/PE (History); receiving anticoagulant therapy (prophylactic dose), high risk for recurrent DVT/PE ^c	DMPA	2	3
DVT/PE (History); not receiving anticoagulant therapy, high risk for recurrent DVT/PE ^c	DMPA	2	3
Peripartum cardiomyopathy; normal or mildly impaired cardiac function ^d	DMPA	1	2
Peripartum cardiomyopathy; moderately or severely impaired cardiac function ^e	DMPA	2	3
Postabortion (spontaneous or induced); first trimester medication abortion with mifepristone at time of abortion initiation	DMPA	1	2
Postpartum (nonbreastfeeding); <21d postpartum	DMPA	1	2
Postpartum (nonbreastfeeding); 21–42 d postpartum, with other risk factors for VTE ^b	DMPA	1	2
Postpartum (including cesarean delivery, breastfeeding or nonbreastfeeding), < 10 min after delivery of the placenta	Cu-IUD	1	2
Postpartum (including cesarean delivery, nonbreastfeeding), < 10 min after delivery of the placenta	LNG-IUD	1	2
Sickle cell disease	DMPA	1	2/3 ^f
Solid organ transplantation (no graft failure or graft failure); receiving long-term immunosuppressive therapy with a history of, or risk factors for, nontraumatic fractures	CHC	2	4
	DMPA	2	3
	DMPA	1	2
Superficial venous thrombosis (acute or history)	DMPA	2	3
Thrombophilia	DMPA	1	2
Valvular heart disease; complicated ^g	DMPA	1	2

CHC, combined hormonal contraceptive; Cu-IUD, copper intrauterine device; DMPA, depot medroxyprogesterone acetate; DVT, deep venous thrombosis; HIV, human immunodeficiency virus; LNG-IUD, levonorgestrel intrauterine device; PE, pulmonary embolism; VTE, venous thromboembolism.

^aU.S. MEC categories: 1 = A condition for which there is no restriction for the use of the contraceptive method; 2 = A condition for which the advantages of using the method generally outweigh the theoretical or proven risks; 3 = A condition for which the theoretical or proven risks usually outweigh the advantages of using the method; 4 = A condition that represents an unacceptable health risk if the contraceptive method is used. For complete guidance, including any clarifications to the recommendations, please see: U.S. Medical Eligibility Criteria for Contraceptive Use, 2024 | MMWR (<https://www.cdc.gov/mmwr/volumes/73/rr/rr7304a1.htm>).

^be.g., age ≥35 years, previous VTE, thrombophilia, immobility, transfusion at delivery, peripartum cardiomyopathy, BMI ≥30 kg/m², postpartum hemorrhage, postcesarean delivery, preeclampsia, or smoking.

^cOne for more risk factors: thrombophilia (e.g., factor V Leiden mutation; prothrombin gene mutation; protein S, protein C, and antithrombin deficiencies; or antiphospholipid syndrome), active cancer (metastatic, receiving therapy, or within 6 months after clinical remission), excluding nonmelanoma skin cancer; history of recurrent DVT/PE.

^dNew York Heart Association Functional Class I or II: no limitation of activities or slight, mild limitation of activity.

^eNew York Heart Association Functional Class III or IV: marked limitation of activity or should be at complete rest.

^fThe category should be assessed according to the severity of the condition and risk for thrombosis.

^gPulmonary hypertension, risk for atrial fibrillation, or history of subacute bacterial endocarditis.

Table 3

Summary of changes in recommendations indicating decreased safety concerns with use of intrauterine devices and hormonal contraception, U.S. medical eligibility criteria for contraceptive use, 2024

Condition	Method	Category change ^a	
		2016	2024
Cirrhosis; decompensated (impaired liver function)	LNG-IUD	3	2
	implant	3	2
	POP	3	2
DVT/PE (Current or history); receiving anticoagulant therapy (therapeutic dose)	CHC	4	3
High risk for HIV infection	Cu-IUD	2	1
	LNG-IUD	2	1
Liver tumors; hepatocellular adenoma	LNG-IUD	3	2
	Implant	3	2
	POP	3	2
Solid organ transplantation; no graft failure	Cu-IUD	2	1
	LNG-IUD	2	1
Solid organ transplantation; graft failure	Cu-IUD (initiation)	3	2
	Cu-IUD (continuation)	2	1
	LNG-IUD (initiation)	3	2
	LNG-IUD (continuation)	2	1
Surgery; major with prolonged immobilization	LNG-IUD	2	1
	Implant	2	1
	POP	2	1
Systemic lupus erythematosus; positive (or unknown) antiphospholipid antibodies	LNG-IUD	3	2
	Implant	3	2
	POP	3	2

CHC, combined hormonal contraceptive; Cu-IUD, copper intrauterine device; DMPA, depot medroxyprogesterone acetate; DVT, deep venous thrombosis; HIV, human immunodeficiency virus; LNG-IUD, levonorgestrel intrauterine device; PE, pulmonary embolism; POP, progestin-only pill; VTE, venous thromboembolism.

^aU.S. MEC categories: 1 = A condition for which there is no restriction for the use of the contraceptive method; 2 = A condition for which the advantages of using the method generally outweigh the theoretical or proven risks; 3 = A condition for which the theoretical or proven risks usually outweigh the advantages of using the method; 4 = A condition that represents an unacceptable health risk if the contraceptive method is used. For complete guidance, including any clarifications to the recommendations, please see: U.S. Medical Eligibility Criteria for Contraceptive Use, 2024 | MMWR (<https://www.cdc.gov/mmwr/volumes/73/rr/rr7304a1.htm>).