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OBSTETRIC CARE CONSENSUS

Interpregnancy Care

Number 8

This document is endorsed by the American College of Nurse-Midwives and the National Association of Nurse Practitioners in Women's Health. This document was developed by the American College of Obstetricians and Gynecologists and the Society for Maternal–Fetal Medicine in collaboration with Judette Marie Louis MD, MPH; Allison Bryant, MD, MPH; Diana Ramos, MD, MPH; Alison Stuebe, MD, MSc; and Sean C. Blackwell, MD.

ABSTRACT: Interpregnancy care aims to maximize a woman's level of wellness not just in between pregnancies and during subsequent pregnancies, but also along her life course. Because the interpregnancy period is a continuum for overall health and wellness, all women of reproductive age who have been pregnant regardless of the outcome of their pregnancies (ie, miscarriage, abortion, preterm, full-term delivery), should receive interpregnancy care as a continuum from postpartum care. The initial components of interpregnancy care should include the components of postpartum care, such as reproductive life planning, screening for depression, vaccination, managing diabetes or hypertension if needed, education about future health, assisting the patient to develop a postpartum care team, and making plans for long-term medical care. In women with chronic medical conditions, interpregnancy care provides an opportunity to optimize health before a subsequent pregnancy. For women who will not have any future pregnancies, the period after pregnancy also affords an opportunity for secondary prevention and improvement of future health.

Background

Efforts to reduce maternal morbidity have led to an increased focus on improving maternal health before a future pregnancy and across the lifespan. One proposed intervention is improving interpregnancy care. Long understood as an intervention to improve neonatal outcomes, the role of interpregnancy care recently has been recognized for its role in maternal health. This document reviews the existing data on interpregnancy care and offers guidance on providing women with interpregnancy care.

Prepregnancy, Postpartum, Interpregnancy, and Well-Woman Care: The Intersection

Prepregnancy, postpartum, interpregnancy, and well-woman care are interrelated and can be defined by their relationship to the timing of pregnancy (Fig. 1). For women who become pregnant, pregnancy is recognized as a window to future health because complications during pregnancy, such as gestational diabetes mellitus, gestational hypertension, preeclampsia, and fetal growth restriction, are associated with risk of health complications later in life (1–4). The interpregnancy period is an opportunity to address these complications or medical issues that have developed during pregnancy, to assess a woman's mental and physical well-being, and to optimize her health along her life course. The yield of this effort is improved maternal health at the start of the next pregnancy, which leads to improved health outcomes for the infant. The proposed long-term yield is improved long-term health for the woman. Therefore, interpregnancy care aims to maximize a woman's level of wellness not just in between pregnancies and during subsequent pregnancies, but also along her life course. Because the interpregnancy period is a continuum for

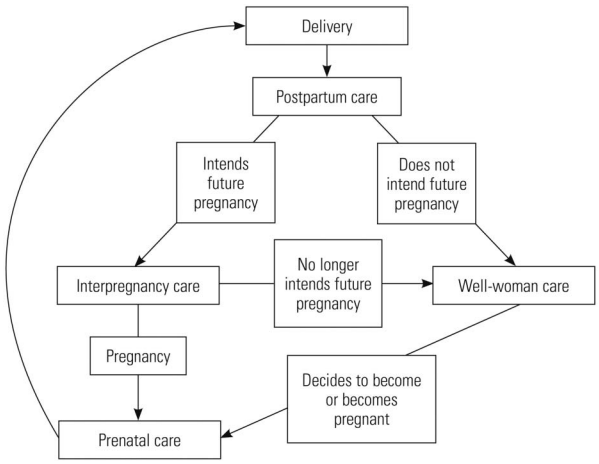

Figure 1. Interpregnancy Care Within the Continuum of Care.

overall health and wellness, all women of reproductive age who have been pregnant regardless of the outcome of their pregnancies (ie, miscarriage, abortion, preterm, full-term delivery), should receive interpregnancy care as a continuum from postpartum care (see the American College of Obstetricians and Gynecologists' [ACOG] Committee Opinion *Optimizing Postpartum Care* or the For More Information section). However, it should be acknowledged that not all women will want to or will have subsequent pregnancies or children.

The health care providers of that care for women of reproductive age include obstetrician–gynecologists, primary care providers, subspecialists who treat chronic illnesses, advanced practice professionals, and mental health providers. Some models have included pediatricians and dentists caring for the infant or other children. Creative partnerships such as these as well as policies that promote access to and coverage of interpregnancy care can ensure that the woman's health is addressed.

Definition of Interpregnancy and Well-Woman Care

Interpregnancy care is the care provided to women of childbearing age who are between pregnancies with the goal of improving outcomes for women and infants (5). When reviewing international recommendations for birth spacing, the World Health Organization identified four intervals: 1) "interpregnancy interval" indicates the time a woman is not pregnant between one live birth or pregnancy loss and the next pregnancy; 2) "birth-to-birth interval" is the time between a live birth and the subsequent live birth (this interval does not take into account any pregnancy losses in between births); 3) "interoutcome interval" describes the time between the outcome of one pregnancy and the outcome of the previous pregnancy; and 4) "birth-to-conception interval" is the time between a live birth and the start of the next pregnancy (6). This document discusses *interpregnancy care*, defined here as the care that addresses a woman's health care needs during the interval between one live birth or pregnancy loss and the start of the next pregnancy; specifically, it will focus on this interval after a woman has transitioned from postpartum care.

Existing Recommendations

The concept of interpregnancy care is well established and multiple organizations have put forth their own distinct set of interpregnancy care recommendations (5, 7–9). However, many of these recommendations are focused solely on improving neonatal outcomes of future pregnancies. This document will focus on interpregnancy care to improve maternal and neonatal outcomes of future pregnancies, as well as long-term women's health outcomes.

Clinical Considerations and Management

To optimize interpregnancy care, anticipatory guidance should begin during pregnancy with the development of a postpartum care plan that addresses the transition to parenthood and interpregnancy or well-woman care (4) (Table 1). The initial components of interpregnancy care should include the components of postpartum care (10), such as reproductive life planning, screening for depression, vaccination, managing diabetes or hypertension if needed, education about future health, assisting the patient to develop a postpartum care team, and making plans for long-term medical care (Box 1). Timing of visits should consider any changes in insurance coverage anticipated after delivery.

► ***What Are the Clinical Components of Interpregnancy Care?***

Breastfeeding and Maternal Health

Health care providers should routinely provide anticipatory guidance and support to enable women to breastfeed as an important part of interpregnancy health (11, 12). Multiple studies have shown that longer duration of breastfeeding is associated with improved maternal health, including lower risks of diabetes (13–15), hypertension (15, 16), myocardial infarction (17), ovarian cancer (15, 18), and breast cancer (15, 19). For women with gestational diabetes, longer duration of breastfeeding is associated with decreased risk of metabolic syndrome (20) and type 2 diabetes (21). A recent simulation study found that if 90% of women were to breastfeed optimally, this would prevent 5,023 cases of breast cancer, 12,320 cases of type 2 diabetes, 35,982 cases of hypertension, and 8,487 cases of myocardial infarction (22).

Although ACOG recommends exclusive breastfeeding for the first 6 months of life, obstetrician–gynecologists and other health care providers should support each woman's informed decision about whether to initiate or continue breastfeeding (11), recognizing that she is uniquely qualified to decide whether exclusive

Table 1. Interpregnancy Care Recommendations

Recommendation	Grade of Recommendation
General	
To optimize interpregnancy care, anticipatory guidance should begin during pregnancy with the development of a postpartum care plan that addresses the transition to parenthood and interpregnancy or well-woman care.	Best Practice
Breastfeeding and Maternal Health	
Health care providers should routinely provide anticipatory guidance and support to enable women to breastfeed as an important part of interpregnancy health.	1A Strong recommendation, high-quality evidence
Interpregnancy Interval	
Women should be advised to avoid interpregnancy intervals shorter than 6 months.	1B Strong recommendation, moderate-quality evidence
Women should be counseled about the risks and benefits of repeat pregnancy sooner than 18 months.	2B Weak recommendation, moderate-quality evidence
Family planning counseling should begin during prenatal care with a conversation about the woman's interest in future childbearing.	Best Practice
Depression	
All women should be screened for depression in the postpartum period, and then as part of well-woman care during the interpregnancy period. Such screening should be implemented with systems in place to ensure accurate diagnosis, effective treatment, and appropriate follow-up.	1B Strong recommendation, moderate-quality evidence
Postpartum depression screening also may occur at the well-child visit with procedures in place to accurately convey the information to the maternal care provider.	1B Strong recommendation, moderate-quality evidence
Other Medical Conditions	
Women should be encouraged to reach their prepregnancy weight by 6–12 months postpartum and ultimately to achieve a normal BMI (calculated as weight in kilograms divided by height in meters squared) of 18.5–24.9.	2B Weak recommendation, moderate-quality evidence
Health care providers should offer specific, actionable advice regarding nutrition and physical activity using proven behavioral techniques.	1A Strong recommendation, high-quality evidence
Nonpregnant adult smokers should be offered smoking cessation support through behavioral interventions and U.S. Food and Drug Administration-approved pharmacotherapy.	1A Strong recommendation, high-quality evidence
In the interpregnancy period, all women should be routinely asked about their use of alcohol and drugs, including prescription opioids, marijuana, and other medications used for nonmedical reasons and referred as indicated. Substance use disorder and relapse prevention programs also should be made available.	Best Practice

(*continued*)

Table 1. Interpregnancy Care Recommendations (*continued*)

Recommendation	Grade of Recommendation
Health care providers should consider patient navigators, trained medical interpreters, health educators, and promotoras to facilitate quality interpregnancy care for women of low-health literacy, with no or limited English proficiency, or other communication needs.	2C Weak recommendation, low-quality evidence
Women of childbearing age should be screened for intimate partner violence, such as domestic violence, sexual coercion, and rape, and referred for intervention services if they screen positive.	2B Weak recommendation, moderate-quality evidence
Women with histories of sexually transmitted infections before or during pregnancy should have thorough sexual and behavioral histories taken to determine risk of repeat infection or current or subsequent infection with HIV or viral hepatitis.	1A Strong recommendation, high-quality evidence
All women should be encouraged to engage in safe sex practices; partner screening and treatment should be facilitated as appropriate.	1A Strong recommendation, high-quality evidence
As part of interpregnancy care, women at high risk of STIs should be offered screening, including for HIV, syphilis, and hepatitis. Screening should follow guidance set forth by the CDC.	1A Strong recommendation, high-quality evidence
History of High-Risk Pregnancy	
Women with prior preterm births should be counseled that short interpregnancy intervals may differentially and negatively affect subsequent pregnancy outcomes and, as such, the birth spacing recommendations listed in the section "Interpregnancy Interval" are particularly important.	1B Strong recommendation, moderate-quality evidence
Given insufficient evidence of benefit, screening and treating asymptomatic genitourinary infections in the interpregnancy period in women at high risk of preterm birth is not recommended.	1B Strong recommendation, moderate-quality evidence
For women who have had pregnancies affected by congenital abnormalities or genetic disorders, health care providers should review postnatal or pathologic information with the women and offer genetic counseling, if appropriate, to estimate potential recurrence risk.	1C Strong recommendation, low-quality evidence
All women who are planning a pregnancy or capable of becoming pregnant should take 400 micrograms of folic acid daily. Supplementation should begin at least 1 month before fertilization and continue through the first 12 weeks of pregnancy.	1A Strong recommendation, high-quality evidence
All women planning a pregnancy or capable of becoming pregnant who have had a child with a neural tube defect should take 4 mg of folic acid daily. Supplementation should begin at least 3 months before fertilization and continue through the first 12 weeks of pregnancy.	1A Strong recommendation, high-quality evidence
A thorough review of all prescription and nonprescription medications and potential teratogens and environmental exposures should be undertaken before the next pregnancy.	1A Strong recommendation, high-quality evidence

(*continued*)

Table 1. Interpregnancy Care Recommendations (*continued*)

Recommendation	Grade of Recommendation
A genetic and family history of the patient and her partner should be obtained. This may include family history of genetic disorders, birth defects, mental disorders, and breast, ovarian, uterine, and colon cancer.	1B Strong recommendation, moderate-quality evidence
Infertility	
Generally, recommendations for the length of the interpregnancy interval should not differ for women with prior infertility compared with women with normal fertility.	2C Weak recommendation, low-quality evidence
Prior Cesarean Delivery	
Women with prior cesarean deliveries, and particularly those who are considering a trial of labor after cesarean delivery, should be counseled that a shorter interpregnancy interval in this population has been associated with an increased risk of uterine rupture and risk of maternal morbidity and transfusion.	1B Strong recommendation, moderate-quality evidence

Abbreviations: BMI, body mass index (calculated as weight in kilograms divided by height in meters squared); CDC, Centers for Disease Control and Prevention; HIV, human immunodeficiency virus; STIs, sexually transmitted infections.

breastfeeding, mixed feeding, or formula feeding is optimal for her and her infant. Additionally, obstetrician–gynecologists and other health care providers can provide information and resources that might help women better understand their workplace breastfeeding rights (23). Additional guidance can be found at www.acog.org/breastfeeding.

Interpregnancy Interval

Women should be advised to avoid interpregnancy intervals shorter than 6 months and should be counseled about the risks and benefits of repeat pregnancy sooner than 18 months. Most of the data from observational studies in the United States would suggest a modest increase in risk of adverse outcomes associated with intervals of less than 18 months and more significant risk of adverse outcome with intervals of less than 6 months between birth and the start of the next pregnancy (24–40). More recent studies, however, have called into question the methodologies common to much of the literature, and the question remains open as to the causal effect of short interpregnancy intervals on some outcomes (41, 42). Interdelivery (from one delivery to the next) intervals of less than 18 months have been associated with increased risk of uterine rupture among women undergoing trials of labor after cesarean (43, 44). Interpregnancy intervals of greater than 5–10 years also may be associated with increased risk of adverse outcomes (25).

Because the interpregnancy interval is a potentially modifiable risk factor, there has been enthusiasm for providing guidance to women and their families about the benefits of intervals longer than 6 months between pregnancies. Women of lower socioeconomic status and women of color appear to be at risk of the shortest interpregnancy intervals (45–47), which highlights the interpregnancy interval as a potential opportunity to address inequities in adverse outcomes.

Interventions to Increase Optimally Spaced Pregnancies

Family planning counseling should begin during prenatal care with a conversation about the woman's interest in future childbearing (48). In the United States, 45% of pregnancies are unplanned (49), and one in three women become pregnant before the recommended 18-month interpregnancy interval (50). Contraceptive access and patient and health care provider knowledge are important enablers of adequate birth spacing (51, 52), and woman-centered family planning counseling enables each woman to select a family planning method that is acceptable to her and is commensurate with her desires for future childbearing. Starting this conversation by asking, "Would you like to become pregnant in the next year?" or, for women in the immediate postpartum period, "When would you like to become pregnant again?" allows the health care provider and the woman to center discussions of contraception on the woman's priorities. The counseling should include a discussion about birth spacing and its role in providing sufficient time to optimize health before the next pregnancy. This optimization can improve outcomes for the subsequent pregnancy as well as across the woman's lifespan (53).

Counseling should include a discussion of all contraceptive options (including implants, intrauterine devices, hormonal methods, barrier methods,

Box 1. Key Steps in Interpregnancy Care*

During Prenatal Care

Determine who will provide primary care after the immediate postpartum period
Discuss reproductive life planning and preferences for a method of contraception
Provide anticipatory guidance regarding breastfeeding and maternal health
Discuss associations between pregnancy complications and long-term maternal health, as appropriate

During the Maternity Stay†

Discuss the importance, timing, and location of follow-up for postpartum care
If desired by the patient, provide contraception, including long-acting reversible contraception or surgical sterilization
Provide anticipatory guidance regarding breastfeeding and maternal health
Ensure the patient has a postpartum medical home

At the Comprehensive Postpartum Visit‡

Review any complications of pregnancy and birth and their implications for future maternal health; discuss appropriate follow-up care
Review the reproductive life plan and provide a commensurate method of contraception
Ensure that the patient has a primary medical home for ongoing care

During Routine Health Care or Well-Woman or Pediatric Visits§

Assess whether the woman would like to become pregnant in the next year
Screen for intimate partner violence and depression or mental health disorders
Assess pregnancy history to inform decisions about screening for chronic conditions (eg, diabetes, cardiovascular disease)
For known chronic conditions, optimize disease control and maternal health
Pediatric colleagues to screen during child health visits for women's health issues such as smoking, depression, multivitamin use, and satisfaction with contraception (IMPLICIT Toolkit)‖

*Timing should take into account any changes in insurance coverage anticipated after delivery.

†See *Guidelines for Perinatal Care*, Eighth Edition, for more information.

‡See Committee Opinion 736, *Optimizing Postpartum Care,* for more information.

§See Committee Opinion 755, *Well-Woman Visit,* and www.acog.org/wellwoman for more information.

‖Implicit Toolkit Family Medicine Education Consortium. IMPLICIT interconception care toolkit: incorporating maternal risk assessment into well-child visits to improve birth outcomes. Dayton (OH): FMEC; 2016. Available at: https://health.usf.edu/publichealth/chiles/fpqc/larc/~/media/89E28EE3402E4198BD648F84339799C1.ashx. Retrieved September 12, 2018.

lactational amenorrhea, and natural family planning). The Centers for Disease Control and Prevention's (CDC) *U.S. Medical Eligibility Criteria for Contraceptive Use* and *U.S. Selected Practice Recommendations for Contraceptive Use* (54, 55) can be used to facilitate evidence-based contraception counseling to meet an individual patient's family planning and pregnancy spacing needs. Counseling should use a shared decision-making approach, which acknowledges that there are two experts in the conversation (the health care provider as an expert in clinical care and the patient as an expert on her own experiences and preferences) (48, 56) so that the woman can make an autonomous and informed decision. Health care providers also should ask what methods women have found to be effective and acceptable in the past. Family planning counseling may be perceived differently by women who historically have been marginalized and who have experienced coercive counseling and social policies (57, 58). Health care providers should be conscious of implicit biases against childbearing among marginalized women and ensure that counseling addresses the individual woman's needs and desires (57).

Every woman should have access to all contraceptive methods when needed (including immediately after giving birth) without financial or logistical barriers, and obstetrician–gynecologists and other obstetric care providers can help advocate for policies that support this (59). This includes, but is not limited

to, long-acting, reversible contraceptive methods because they may be particularly helpful in reducing unplanned pregnancy and, therefore, optimizing birth spacing (60, 61). For more information on long-acting, reversible contraceptives, see the For More Information section.

Few other interventions have proven efficacy in reducing the occurrence of short interpregnancy intervals. Other interventions that may have benefit include home visitation programs and enhanced social supports (62–64).

Depression

All women should be screened for depression in the postpartum period and then as part of well-woman care during the interpregnancy period. Such screening should be implemented with systems in place to ensure accurate diagnosis, effective treatment, and appropriate follow-up. Postpartum depression screening also may occur at the well-child visit with procedures in place to accurately convey the information to the maternal care provider. Perinatal depression and anxiety affect one in seven women, with devastating consequences for women and children (65). Screening for symptoms with a validated instrument, such as the Patient Health Questionnaire-9 or the Edinburgh Postnatal Depression Scale, is recommended by the U.S. Preventive Services Task Force (66) and by all major medical organizations that care for women and infants (65, 67, 68). The American Academy of Pediatrics recommends postpartum depression screening at the time of well-child visits at 1, 2, 4, and 6 months of age (67). Although screening alone has been demonstrated to be of benefit (65), ideally screening would be paired with available and accessible mental health interventions. A recent systematic review found that only 22% of women who screened positive for depression attended a mental health visit in the absence of an intervention to facilitate referral (69). Health care providers should be prepared to initiate treatment or refer women to a qualified caregiver, or both.

Managing Other Medical Conditions

In women with chronic medical conditions, interpregnancy care provides an opportunity to optimize health before a subsequent pregnancy. For women who will not have any future pregnancies, the period after pregnancy also affords an opportunity for secondary prevention and improvement of future health. Recommendations for counseling and goals can be found in Table 2, with recommendations for the most common conditions expanded on in the following sections.

Reducing Weight

Women should be encouraged to reach their prepregnancy weight by 6–12 months postpartum and ultimately to achieve a normal body mass index (BMI; calculated as weight in kilograms divided by height in meters squared) of 18.5–24.9. Ideally, a woman's weight should be optimized before she attempts to become pregnant (70), although the health benefits of postponing pregnancy need to be balanced against reduced fecundity with female aging (71). Postpregnancy weight retention and gain have been associated with subsequent adverse obstetric consequences such as gestational diabetes, hypertensive disorders, stillbirth, large-for-gestational age neonates, cesarean delivery, longer-term obesity (72–78), and possibly congenital anomalies (79). Reduction of BMI between pregnancies is associated with improved perinatal outcomes (78), which makes achieving ideal body weight an important component of interpregnancy care.

Health care providers should offer specific, actionable advice regarding nutrition and physical activity, using proven behavioral techniques (70, 80). Health care providers are referred to ACOG's Obesity Toolkit for more resources (81). Several randomized controlled trials have been conducted to encourage weight loss in the postpartum period, with mixed results (82). The most effective means by which to achieve weight loss goals are not clear, but most likely include a program of diet alone or diet in combination with exercise (83, 84). There is insufficient evidence on whether breastfeeding is associated with postpartum weight change (15).

For women with a BMI greater than or equal to 40 or greater than 35 with at least one serious obesity-related morbidity, referral to a bariatric surgery program may be considered because bariatric surgery is associated with improved metabolic health (85). Studies that compared outcomes among women with pregnancies before and after undergoing bariatric surgery have found lower rates of gestational diabetes and hypertension in the postprocedure pregnancy but higher rates of small-for-gestational-age infants (86). Women should be counseled that weight loss after bariatric surgery is associated with improved fertility, and it is recommended to delay pregnancy for 12–24 months after the procedure (87). During the postoperative period, the risk of oral contraceptive failure in patients who have bariatric surgery with a malabsorptive component is increased (54). See the For More Information section for additional resources on reducing weight.

Substance Use and Use Disorders

Tobacco Cessation. Nonpregnant adult smokers should be offered smoking cessation support through behavioral interventions and U.S. Food and Drug Administration-approved pharmacotherapy (88). Tobacco use is a modifiable risk factor for a host of adverse pregnancy outcomes and longer-term health outcomes. The U.S. Preventive Services Task Force

Table 2. Specific Health Conditions

Condition	Counseling	Interpregnancy Test/Screening	Management Considerations	Goals	Medications of Concern for Pregnancy*
Gestational diabetes	Women with gestational diabetes have a sevenfold increased risk of developing type 2 diabetes.	2-hour OGTT at 4–12 weeks postpartum; screening every 1–3 years	Women with impaired fasting glucose, IGT, or diabetes should be referred for preventive or medical therapy.	Early detection of overt diabetes; diabetes prevention	
Diabetes	Poorly controlled diabetes damages the woman's eyes, heart, blood vessels, and kidneys. Poor control further increases risk of birth defects in the next pregnancy. Diabetes is a risk factor for future heart disease.	Patients should demonstrate good control of blood sugars with hemoglobin A_{1c} <7.0% (53 mmol/mol).	Weight management Testing for underlying vasculopathy: retinal examination, 24-hour urine protein testing, and electrocardiography. Thyroid screening	Hemoglobin A_{1c} <6.5% (48 mmol/mol) if a future pregnancy is desired, to reduce the risk of congenital anomalies Discuss aspirin for future pregnancies.	Medications for comorbidity ACE inhibitors Statins
Preeclampsia	Women with a history of preeclampsia have an increased risk of recurrence in subsequent pregnancies. These women also have a twofold increased risk of subsequent cardiovascular disease.	Evaluate BP for resolution of hypertension.		Maintain BP <120/80. Maintain healthy weight. Discuss aspirin for future pregnancies.	ACE inhibitors Angiotensin receptor blockers
Gestational hypertension	Women with a history of gestational hypertension have an increased risk of developing chronic hypertension. These women also have a twofold increased risk of subsequent cardiovascular disease.	Evaluate BP for resolution of hypertension.		Maintain BP <120/80. Maintain healthy weight. Discuss aspirin for future pregnancies.	ACE inhibitors Angiotensin receptor blockers

(*continued*)

Table 2. Specific Health Conditions (*continued*)

Condition	Counseling	Interpregnancy Test/Screening	Management Considerations	Goals	Medications of Concern for Pregnancy*
Chronic hypertension	Hypertensive disease is a major cause of maternal morbidity and mortality. Uncontrolled hypertension leads to end organ damage, renal disease, and cardiovascular disease such as heart attacks and strokes.	Evaluate BP for resolution of hypertension.		Maintain BP <120/80. Maintain healthy weight. Consider testing for ventricular hypertrophy, retinopathy, and renal disease for women with longstanding or uncontrolled hypertension. Discuss aspirin for future pregnancies.	ACE inhibitors Angiotensin receptor blockers
Cardiovascular disease	Cardiovascular disease is the leading cause of maternal mortality.	Optimal contraception counseling Evaluation and management by a cardiac disease specialist		To be determined with cardiac care provider	ACE inhibitors Warfarin beyond 6 weeks of gestation
Depression or mental health disorders	Screening allows for treatment and control of symptoms that may help prevent self-harm and negative family outcomes, such as impaired infant bonding, or neglect.	Use validated test to monitor.	Referral to mental health providers	Control of symptoms	Valproic acid Lithium
Overweight and obesity	Obesity is associated with increased risk of perinatal and maternal morbidity, as well as infertility. Weight loss in between pregnancy reduces that risk. Obesity increases the risk of type 2 diabetes, hypertension, certain types of cancer, arthritis, and heart disease.	Measure BMI. Preventive screening for diabetes and lipids		Reach prepregnancy weight by 6-12 months after giving birth; ultimately achieve normal BMI. Referral for bariatric surgery when appropriate Discuss aspirin for future pregnancies.	Weight loss drugs: Phentermine–topiramate Limited data on other drugs

(*continued*)

Table 2. Specific Health Conditions (*continued*)

Condition	Counseling	Interpregnancy Test/Screening	Management Considerations	Goals	Medications of Concern for Pregnancy*
HIV	HIV infection increases risk of maternal morbidity and fetal vertical transmission.	CD4 and viral load	Management by an HIV care provider	Nondetectable viral load	If future pregnancy desired, avoid antiviral medications suspected to be teratogenic.
Renal disease	Pregnancy may be associated with irreversible worsening of renal function in women with moderate to severe renal disease.	Serum creatinine Urine protein		To be determined with renal specialist Discuss aspirin for future pregnancies.	ACE inhibitors
Epilepsy	Epilepsy is associated with increased risk of malformations and seizures in offspring.	Whenever possible, monotherapy in the lowest therapeutic dose should be prescribed.	Coordination of care for optimal suppression of seizures. Maintain therapeutic levels of antiepileptic agents.	Cessation of seizure activity	Valproic acid Carbamazepine
SLE and autoimmune disease	Poorly controlled autoimmune disorders are associated with increased miscarriages and maternal morbidity. Some of these conditions are associated with cardiovascular disease.	Evaluate for renal function and end-organ disease.	Optimize disease control Evaluate for antiphospholipid antibody syndrome if there are qualifying clinical events, renal disease, and diabetes if managed with chronic steroids.		Cyclophosphamide Methotrexate Mycophenolate Leflunomide
Thyroid disease	Poorly controlled thyroid disease is associated with adverse pregnancy outcomes, such as spontaneous abortion, preterm delivery, low birth weight, preterm birth, impaired neuropsychological development of the offspring, and possibly miscarriage.	Thyrotropin (also known as thyroid-stimulating hormone) Free T4	Management by primary provider to remain euthyroid Women with symptoms of hypothyroidism should undergo thyroid screening before attempting pregnancy.	Achieve euthyroid state	Radioactive iodine

(*continued*)

Table 2. Specific Health Conditions (*continued*)

Condition	Counseling	Interpregnancy Test/Screening	Management Considerations	Goals	Medications of Concern for Pregnancy*
STI	STIs increase the risk of preterm birth and puerperal infections. Untreated STIs are associated with impairment of fertility and increased risk of HIV infection.	Screening per CDC recommendations	Counseling to engage in safer sex practice; partner screening or treatment, or both	Remain free of STI infection or reinfection	
Tobacco cessation	Tobacco use (smoked, chewed, ENDS, and vaped) is associated with adverse pregnancy outcomes such as small for gestational age and abruption. The long-term health consequences of tobacco use are well established and include increases in cardiovascular disease and cancer.	Screen using the five A's: Ask, Advise, Assess, Assist, and Arrange.	Advise cessation and provide behavioral interventions and U.S. Food and Drug Administration (FDA)-approved pharmacotherapy for cessation to adults who use tobacco.	Reduce tobacco use to none	Nicotine replacement products or other pharmaceuticals for smoking cessation are generally not recommended.
Thrombophilia	Inherited thrombophilias are associated with increased risk of venous thromboembolism and adverse pregnancy outcomes.	Consider screening in these cases: venous thromboembolism that was associated with a nonrecurrent risk factor or a first-degree relative with a high-risk thrombophilia.	Coordinate care for maintenance of thromboprophylaxis if indicated. Consider and plan for thromboprophylaxis during pregnancy.	Determined with hematologist or primary care provider	Warfarin beyond 6 weeks of gestation
Immunizations	Immunization against vaccine preventable diseases are crucial for long-term maternal and infant health.	All women should be screened for relevant vaccination opportunities per CDC guidelines.			MMR HPV Varicella Live attenuated virus

(*continued*)

Table 2. Specific Health Conditions (*continued*)

Condition	Counseling	Interpregnancy Test/Screening	Management Considerations	Goals	Medications of Concern for Pregnancy*
Psychosocial risks	Socioeconomic disadvantage, race or ethnicity, and intimate partner violence are associated with worse health outcomes.	All women should be screened for access to resources	Appropriate referrals to local and community resources should be provided		
Antiphospholipid antibody syndrome	Antiphospholipid antibody syndrome is associated with increased risk of venous thromboembolism and adverse pregnancy outcomes	Screen for anyone with a vascular thrombosis with one of the qualifying clinical scenarios: ≥3 first trimester losses, ≥1 birth at <34 weeks from preeclampsia and ≥1 loss at 10 weeks or greater.		Determine with hematologist Discuss aspirin for future pregnancies.	Warfarin beyond 6 weeks gestation

Abbreviations: ACE, angiotensin-converting-enzyme; BP, blood pressure; BMI, body mass index (calculated as weight in kilograms divided by height in meters squared); CDC, Centers for Disease Control and Prevention; CD4, cluster of differentiation 4; ENDS, electronic nicotine delivery systems; HIV, human immunodeficiency virus; ID, infectious disease; IGT, impaired glucose tolerance; MMR, measles–mumps–rubella; OGTT, oral glucose tolerance test; SLE, systemic lupus erythematosus; STI, sexually transmitted infections; T4, thyroxine.

*Medications listed may or may not be appropriately prescribed during pregnancy. Health care providers should discuss the risks and benefits of the medication, review treatment goals, and discuss family planning and how long-term use might affect care during a future pregnancy before initiating a medication.

and ACOG recommend medications, behavioral interventions, or both in nonpregnant adults (89, 90). For lactating women, nicotine replacement therapy is compatible with breastfeeding because the amounts of nicotine and cotinine transferred with breast milk are generally the same or lower using replacement therapy compared with smoking (91). Specific tools are available to assist health care providers in enabling women to cease smoking after pregnancy (89, 92). Health care providers should reassess tobacco use (smoked, chewed, electronic nicotine delivery systems, vaped) at the postpartum visit (4) and continue to provide, or refer to, assistance with ongoing efforts at cessation (93).

Substance Use Disorder. In the interpregnancy period, all women should be routinely asked about their use of alcohol and drugs, including prescription opioids, marijuana, and other medications used for nonmedical reasons and referred as indicated. Substance use disorder and relapse prevention programs also should be made available (4, 48, 94). Untreated substance use disorders have implications for long-term maternal health and increase the risk of adverse pregnancy outcomes. Moreover, psychiatric disorders such as depression, anxiety, bipolar disorder, and posttraumatic stress disorder are prevalent among women with substance use disorders. Women with substance use disorder have higher rates of unintended pregnancies and lower rates of use of reliable contraception (95). Therefore, it is particularly important to ensure continuation of treatment or to identify and initiate treatment for substance use disorder during the interpregnancy period.

Women who are planning to become pregnant in the immediate future should be encouraged to discontinue recreational substance use and should be counseled that there is no safe level or type of alcohol use during pregnancy. Women who are unable to quit before or during pregnancy likely have a substance use disorder and should be referred to treatment as indicated, if this has not already been done. See the For More Information section for additional resources on substance use.

Social Determinants of Health and Racial and Ethnic Disparities

Health care providers should inquire about and document social and structural determinants of health and maximize referrals to social services to help improve patients' abilities to access health care (96). Social determinants of health (eg, stable housing, access to food and safe drinking water, utility needs, safety in the home and community, immigration

status, and employment conditions) relate closely with health outcomes, health-seeking behaviors, and health care (96, 97). Many of the resources available to women and families with specific needs are provided through state departments of health, insurers, or community health organizations, but individual health care providers and practices should engage in evaluation and referral as well. Estimates of the benefit of such programs are derived largely from observational cohort and preintervention and postintervention designs, but many demonstrate improved health outcomes (98–101).

Health care providers should be aware of prevailing disparities in health care and outcomes in order to understand the risks faced by the populations they care for, but no current evidence guides variation in care by race or ethnicity that may be needed to improve outcomes. Women of color and of low socioeconomic status are at risk of adverse pregnancy and overall poor health outcomes (102). These women may be least likely to receive prepregnancy and interpregnancy care despite their disproportionate need (7, 103). Although some interpregnancy interventions (eg, home visits, social supports) have been demonstrated to be of benefit within specific populations at risk, data on differential effects of interventions by population are scarce.

If available, health care providers should consider patient navigators, trained medical interpreters, health educators, and promotoras (lay community health care workers who work in Spanish-speaking communities [104]) to facilitate quality interpregnancy care for women of low-health literacy, with no or limited English proficiency, or other communication needs.

Intimate Partner Violence

Women of childbearing age should be screened for intimate partner violence (IPV), such as domestic violence, sexual coercion, and rape and referred for intervention services if they screen positive. Sample questions to begin the conversation and guidance on how to appropriately and safely screen for IPV are provided in ACOG Committee Opinion *Intimate Partner Violence* (105). Given the high incidence of IPV, screening for IPV should occur during all encounters (postpartum, well-woman, and at the first prenatal visit and at least once per trimester for pregnant women) (48, 106). During a lifetime, more than one in three women experience rape, physical violence, or stalking by an intimate partner (105). Intimate partner violence has a period prevalence of 17% in the first year postpartum (107). Some women experience IPV as reproductive coercion, including pregnancy pressure, pregnancy coercion, and sabotaging contraception (108).

Sexually Transmitted Infections

Women with histories of STIs before or during pregnancy should have thorough sexual and behavioral histories taken to determine risk of repeat infection or current or subsequent infection with human immunodeficiency virus (HIV) or viral hepatitis. All women should be encouraged to engage in safe sex practices; partner screening and treatment should be facilitated as appropriate. As part of interpregnancy care, women at high risk of STIs should be offered screening, including for HIV, syphilis, and hepatitis. Screening should follow guidance set forth by the CDC (109). Sexually transmitted infections have clear implications for a woman's overall health, fertility, and pregnancy outcomes. Unrecognized and untreated infections may have important sequelae. Women with history of prior STIs are at increased risk of recurrent STIs (110) and, thus, should be considered for rescreening.

Immunizations

The interpregnancy period is ideal to initiate or complete appropriate adult vaccinations that are contraindicated during pregnancy or were not completed during pregnancy but are medically indicated (111) (see Table 1 in ACOG's Committee Opinion on *Maternal Immunization*). The current recommended immunization schedule for adults 19 years or older can be found on the CDC's website. The American College of Obstetricians and Gynecologists reviews these schedules annually for endorsement. Immunizations are a proven way to prevent and, in some cases, eradicate disease. Attention to vaccines needed during the interpregnancy period can play a major role in reducing morbidity and mortality from a range of preventable diseases, including pertussis, influenza, human papillomavirus, hepatitis, and rubella for nonimmune women.

Other Components of the Well-Woman Visit

The periodic well-woman visit as a component of interpregnancy care provides the opportunity for women to receive necessary preventive services. This may include multiple well-woman visits for women who have an interpregnancy interval that lasts for more than 1 year. Guidance for the components of the well-woman examination can be found in ACOG's Committee Opinion on *Well-Woman Visit*, and at www.acog.org/wellwoman (112, 113).

► *What Is Role of Interpregnancy Care in Specific Populations?*

The provision of interpregnancy care may be particularly effective when targeted to high-risk and special populations. In addition to the aforementioned universal recommendations listed in this document, the following recommendations should be considered for specific populations. More details on each topic are provided in the For More Information section.

History of High-Risk Pregnancy

Preterm Birth

For women who delivered early, obstetrician–gynecologists and other obstetric care providers should obtain a detailed medical history of all previous pregnancies and offer women the opportunity to discuss the circumstances that led to the preterm birth. Ideally this would occur within 6–8 weeks of delivery in order to facilitate record review and accurate information gathering; a suggested plan for management of subsequent pregnancies (eg, 17α-hydroxyprogesterone, cervical cerclage, cervical length surveillance) based on current available evidence should be provided to the patient and documented in an accessible location in the medical record. Women with a history of preterm birth, whether indicated or spontaneous, are at increased risk of recurrence (114, 115) and at risk of longer-term maternal morbidity (116). A prior preterm birth is associated with an increased risk of subsequent cardiovascular disease (117). Although women with obstetric complications such as preterm birth may need greater health care services than women with normal delivery outcomes, some evidence suggests that women with obstetric complications are no more likely to access interpregnancy services (118).

Women with prior preterm births should be counseled that short interpregnancy intervals may differentially and negatively affect subsequent pregnancy outcomes and, as such, the birth spacing recommendations listed earlier are particularly important (119). Given insufficient evidence of benefit, screening and treating asymptomatic genitourinary infections in the interpregnancy period in women at high risk of preterm birth is not recommended (120, 121).

Fetal Anomalies

For women who have had pregnancies affected by congenital abnormalities or genetic disorders, health care providers should review postnatal or pathologic information with the women and offer genetic counseling, if appropriate, to estimate potential recurrence risk. Approximately 2–4% of live births are affected by congenital abnormalities. The strongest risk factors, such as age, family history, and a previously affected child, are usually nonmodifiable. In some cases, the finding of a malformation may have implications for maternal health. For example, maternal obesity and pregestational diabetes mellitus are risk factors for congenital anomalies (122, 123). In these cases, interventions to prevent a recurrence should focus on improvement in the underlying maternal medical conditions.

Modifiable risk factors for congenital birth defects also can be identified and addressed in the interpregnancy period. All women who are planning a pregnancy or capable of becoming pregnant should take 400 micrograms of folic acid daily. Supplementation should begin at least 1 month before fertilization and continue through the first 12 weeks of pregnancy. All women planning a pregnancy or capable of becoming pregnant who have had a child with a neural tube defect should take 4 mg of folic acid daily. Supplementation should begin at least 3 months before fertilization and continue through the first 12 weeks of pregnancy. A thorough review of all prescription and nonprescription medications and potential teratogens and environmental exposures should be undertaken before the next pregnancy.

The responsibility of caring for a medically fragile infant may deter women from accessing interpregnancy care. Novel strategies, such as embedding screening and referral services within pediatric follow-up clinics (124), may help women to address their own health needs.

Genetic Testing

The interpregnancy period is an ideal time for genetic counseling and carrier screening if they have not been previously completed, which allows for informed planning of the subsequent pregnancy (125, 126). Family history and carrier status are important considerations. A genetic and family history of the patient and her partner should be obtained (126–128). This may include family history of genetic disorders; birth defects; mental disorders; and breast, ovarian, uterine, and colon cancer. Further guidance on carrier screening and counseling can be found in ACOG's Committee Opinion on *Carrier Screening in the Age of Genomic Medicine* (125), ACOG's Committee Opinion on *Carrier Screening for Genetic Conditions* (126), and ACOG's Technology Assessment on *Modern Genetics in Obstetrics and Gynecology* (128).

Infertility

Underlying conditions that may contribute to subfertility (eg, polycystic ovary syndrome, infections, obesity, and thyroid dysfunction) should be evaluated and treatments optimized before a woman attempts to become pregnant. Generally, recommendations for the length of the interpregnancy interval should not differ for women with prior infertility compared with women with normal fertility. Women with histories of infertility or subfertility may need to rely on assisted reproduction to become pregnant; the timing of the next pregnancy attempt is, therefore, often more readily influenced by health care providers than it might be for other women.

Prior Cesarean Delivery

Women with prior cesarean deliveries, and particularly those who are considering a trial of labor after cesarean

delivery, should be counseled that a shorter interpregnancy interval in this population has been associated with an increased risk of uterine rupture and risk of maternal morbidity and transfusion. Evidence exists of increased risk of uterine rupture after cesarean delivery following delivery-to-delivery intervals of 18–24 months or less (43, 129). Evidence also indicates that there is increased risk of maternal morbidity and blood transfusion among women with interpregnancy intervals of less than 6 months (44, 130). Furthermore, women should be counseled that the incidence of placenta accreta spectrum increases with the number of prior cesarean deliveries (131).

For More Information

The American College of Obstetricians and Gynecologists has identified additional resources on topics related to this document that may be helpful for obgyns, other health care providers, and patients. You may view these resources at www.acog.org/More-Info/InterpregnancyCare.

These resources are for information only and are not meant to be comprehensive. Referral to these resources does not imply the American College of Obstetricians and Gynecologists' endorsement of the organization, the organization's website, or the content of the resource. The resources may change without notice.

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Society for Maternal–Fetal Medicine Grading System: Grading of Recommendations Assessment, Development, and Evaluation (GRADE) Recommendations

Obstetric Care Consensus documents will use Society for Maternal-Fetal Medicine's grading approach: http://www.ajog.org/article/S0002-9378%2813%2900744-8/fulltext. Recommendations are classified as either strong (Grade 1) or weak (Grade 2), and quality of evidence is classified as high (Grade A), moderate (Grade B), and low (Grade C)*. Thus, the recommendations can be 1 of the following 6 possibilities: 1A, 1B, 1C, 2A, 2B, 2C.

Grade of Recommendation	Clarity of Risk and Benefit	Quality of Supporting Evidence	Implications
1A. Strong recommendation, high-quality evidence	Benefits clearly outweigh risk and burdens, or vice versa.	Consistent evidence from well-performed randomized controlled trials or overwhelming evidence of some other form. Further research is unlikely to change confidence in the estimate of benefit and risk.	Strong recommendations, can apply to most patients in most circumstances without reservation. Clinicians should follow a strong recommendation unless a clear and compelling rationale for an alternative approach is present.
1B. Strong recommendation, moderate-quality evidence	Benefits clearly outweigh risk and burdens, or vice versa.	Evidence from randomized controlled trials with important limitations (inconsistent results, methodologic flaws, indirect or imprecise), or very strong evidence of some other research design. Further research (if performed) is likely to have an impact on confidence in the estimate of benefit and risk and may change the estimate.	Strong recommendation, and applies to most patients. Clinicians should follow a strong recommendation unless a clear and compelling rationale for an alternative approach is present.
1C. Strong recommendation, low-quality evidence	Benefits appear to outweigh risk and burdens, or vice versa.	Evidence from observational studies, unsystematic clinical experience, or from randomized controlled trials with serious flaws. Any estimate of effect is uncertain.	Strong recommendation, and applies to most patients. Some of the evidence base supporting the recommendation is, however, of low quality.
2A. Weak recommendation, high-quality evidence	Benefits closely balanced with risks and burdens.	Consistent evidence from well-performed randomized controlled trials or overwhelming evidence of some other form. Further research is unlikely to change confidence in the estimate of benefit and risk.	Weak recommendation, best action may differ depending on circumstances or patients or societal values.
2B. Weak recommendation, moderate-quality evidence	Benefits closely balanced with risks and burdens; some uncertainty in the estimates of benefits, risks, and burdens.	Evidence from randomized controlled trials with important limitations (inconsistent results, methodologic flaws, indirect or imprecise), or very strong evidence of some other research design. Further research (if performed) is likely to have an effect on confidence in the estimate of benefit and risk and may change the estimate.	Weak recommendation, alternative approaches likely to be better for some patients under some circumstances.
2C. Weak recommendation, low-quality evidence	Uncertainty in the estimates of benefits, risks, and burdens; benefits may be closely balanced with risks and burdens.	Evidence from observational studies, unsystematic clinical experience, or from randomized controlled trials with serious flaws. Any estimate of effect is uncertain.	Very weak recommendation, other alternatives may be equally reasonable.
Best practice	Recommendation in which either (i) there is enormous amount of indirect evidence that clearly justifies strong recommendation (direct evidence would be challenging, and inefficient use of time and resources, to bring together and carefully summarize), or (ii) recommendation to contrary would be unethical.		

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