VA/DoD Clinical Practice Guidelines

Management of Pregnancy

Provider Summary

Version 4.0 | 2023

VA/DoD CLINICAL PRACTICE GUIDELINE FOR THE MANAGEMENT OF PREGNANCY

Department of Veterans Affairs

Department of Defense

Provider Summary

QUALIFYING STATEMENTS

The Department of Veterans Affairs (VA) and the Department of Defense (DoD) guidelines are based on the best information available at the time of publication. The guidelines are designed to provide information and assist decision making. They are not intended to define a standard of care and should not be construed as one. Neither should they be interpreted as prescribing an exclusive course of management.

This clinical practice guideline (CPG) is based on a systematic review of both clinical and epidemiological evidence. Developed by a panel of multidisciplinary experts, it provides a clear explanation of the logical relationships between various care options and health outcomes while rating both the quality of the evidence and the strength of the recommendation.

Variations in practice will inevitably and appropriately occur when providers consider the needs of individual patients, available resources, and limitations unique to an institution or type of practice. Therefore, every health care professional using these guidelines is responsible for evaluating the appropriateness of applying them in the setting of any particular clinical situation with a patient-centered approach.

These guidelines are not intended to represent VA or DoD policies. Further, inclusion of recommendations for specific testing, therapeutic interventions, or both within these guidelines does not guarantee coverage of civilian sector care.

Version 4.0 – July 2023

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Introduction

The VA and DoD Evidence-Based Practice Work Group (EBPWG) was established and first chartered in 2004, with a mission to advise the VA/DoD Health Executive Committee "on the use of clinical and epidemiological evidence to improve the health of the population . . ." across the Veterans Health Administration (VHA) and Military Health System (MHS), by facilitating the development of CPG for the VA and DoD populations.(1) Development and update of VA/DoD CPGs is funded by VA Evidence Based Practice, Office of Quality and Patient Safety. The system-wide goal of evidence-based CPGs is to improve patient health and wellbeing.

In 2018, VA and DoD published a CPG for the Management of Pregnancy (2018 VA/DoD Pregnancy CPG), which was based on evidence reviewed through May 18, 2017. Since the release of that CPG, the evidence base on pregnancy has expanded. Consequently, the EBPWG initiated the update of the 2018 VA/DoD Pregnancy CPG in 2022. This updated CPG's use of Grading of Recommendations Assessment, Development, and Evaluation (GRADE) approach reflects a more rigorous application of the methodology than previous iterations.(2) Therefore, the strength of some recommendations might have been modified because of the confidence in the quality of the supporting evidence (see Evidence Quality and Recommendation Strength).

This CPG provides an evidence-based framework for evaluating and managing care for pregnant patients toward improving clinical outcomes. Successful implementation of this CPG will

- Assess the patient's condition and collaborate with the patient, family, and caregivers to determine optimal management of patient care;
- Emphasize the use of patient-centered care and shared decision making;
- Minimize preventable complications and morbidity; and
- Optimize individual health outcomes and quality of life (QoL).

The full VA/DoD Pregnancy CPG, as well as additional toolkit materials including a Quick Reference Guide and Patient Summary, can be found at: https://www.healthquality.va.gov/index.asp.

Recommendations

The evidence-based clinical practice recommendations listed in Table 1 were developed using a systematic approach considering four domains as per the GRADE approach (see Summary of Guideline Development Methodology in the full text version of the Pregnancy CPG). These domains include confidence in the quality of the evidence, balance of desirable and undesirable outcomes (i.e., benefits and harms), patient values and preferences, and other implications (e.g., resource use, equity, acceptability).

Table 1. Evidence-based Clinical Practice Recommendations with Strength and Category

Topic	Sub-topic	#	Recommendation	Strength[a]	Category[b]
Routine Care	*Aneuploidy Screening*	1.	We recommend offering non-invasive prenatal testing as the prenatal screening test of choice for all patients with singleton pregnancies who choose aneuploidy screening.	Strong for	Reviewed, New-added
		2.	We suggest non-invasive prenatal testing for patients with twin pregnancies who choose aneuploidy screening.	Weak for	Reviewed, New-added
	Lactation	3.	We suggest assessing all patients for risk factors that impact initiation and continuation of lactation, including obesity, depression, inappropriate gestational weight gain, and gestational diabetes mellitus.	Weak for	Reviewed, New-added
		4.	We suggest individual or group lactation education delivered via in-person, telemedicine, or multimedia modalities be provided for all pregnant and postpartum patients to improve the probability of initiating and continuing lactation.	Weak for	Reviewed, New-replaced
	Pelvic Floor Health	5.	We suggest all patients have an early prenatal evaluation of pelvic floor muscle function and receive pelvic floor muscle exercise instruction during pregnancy for the prevention of urinary incontinence in late pregnancy and up to 6 months postpartum.	Weak for	Reviewed, New-added
		6.	We suggest referral to pelvic health rehabilitation for patients with reported urinary incontinence in the postpartum period.	Weak for	Reviewed, New-added
	Selected Conditions	7.	We recommend offering scheduled delivery to patients who reach 41 weeks and 0/7 days undelivered. Antepartum fetal testing should begin at 41 weeks and 0/7 days if not delivered.	Strong for	Not reviewed, Amended
		8.	We suggest that patients with uncomplicated pregnancies may continue a standard work schedule throughout their pregnancy.	Weak for	Not reviewed, Amended
		9.	We suggest offering telemedicine as a complement to usual perinatal care.	Weak for	Reviewed, New-added
		10.	There is insufficient evidence to recommend for or against specific interventions that would diminish disparities in perinatal care access and maternal and childbirth outcomes.	Neither for nor against	Reviewed, New-added

Topic	Sub-topic	#	Recommendation	Strength[a]	Category[b]
Complicated Obstetrics	*Preterm Delivery*	11.	We recommend considering fetal fibronectin testing as a part of the evaluation strategy in patients between 24 0/7 and 34 6/7 weeks' gestation with signs and symptoms of preterm labor, particularly in facilities where the result might affect management of delivery.	Strong for	Not reviewed, Amended
		12.	We suggest vaginal progesterone or cerclage for singleton pregnancy with short cervix, history of spontaneous preterm birth, or both depending on patient characteristics and preferences.	Weak for	Reviewed, New-added
		13.	There is insufficient evidence to recommend for or against the use of aspirin to reduce recurrent spontaneous preterm birth.	Neither for nor against	Reviewed, New-added
	Hypertensive Disorders	14.	We recommend initiating aspirin therapy at or before 16 weeks' gestation in patients at risk of developing preeclampsia.	Strong for	Reviewed, New-replaced
		15.	We suggest low-dose aspirin of 100–150 mg daily for patients at risk of preeclampsia.	Weak for	Reviewed, New-replaced
		16.	We suggest patients with cardiometabolic disorders (e.g., gestational diabetes mellitus, hypertension, and obesity) be counseled on the benefits of following the Dietary Approaches to Stop Hypertension diet.	Weak for	Reviewed, New-added
		17.	There is insufficient evidence to recommend for or against self-monitoring for blood pressure during pregnancy and the postpartum period.	Neither for nor against	Reviewed, New-added
	Bariatric Surgery	18.	We suggest patients who have undergone bariatric surgery be evaluated for nutritional deficiencies and the need for nutritional supplementation where indicated (e.g., vitamin B12, folate, iron, calcium).	Weak for	Not reviewed, Amended
		19.	There is insufficient evidence to recommend for or against the routine supplementation of vitamins A, D, E, or K for pregnant patients who have undergone bariatric surgery.	Neither for nor against	Not reviewed, Amended
Mental Health	*Screening*	20.	We recommend screening for use of tobacco and nicotine products, alcohol, cannabis, illicit drugs, and inappropriate use of prescription medication. See VA/DoD Substance Use Disorders CPG.	Strong for	Not reviewed, Amended
		21.	We recommend screening for depression periodically using a standardized tool, such as the Edinburgh Postnatal Depression Scale or the 9-item Patient Health Questionnaire, during pregnancy and postpartum.	Strong for	Not reviewed, Not changed
		22.	We suggest screening patients with posttraumatic stress disorder (PTSD) for active PTSD and offering PTSD treatment. See VA/DoD PTSD CPG.	Weak for	Reviewed, New-added

Topic	Sub-topic	#	Recommendation	Strength[a]	Category[b]
Mental Health (cont.)	*Treatment*	23.	We recommend offering individual or group Interpersonal Psychotherapy or cognitive behavioral therapy for pregnant patients at risk of perinatal depression.	Strong for	Reviewed, New-added
		24.	We recommend offering Interpersonal Psychotherapy for treating depression during pregnancy or postpartum.	Strong for	Reviewed, New-added
		25.	We suggest offering cognitive behavioral therapy for treating depression during pregnancy or postpartum.	Weak for	Reviewed, New-added
		26.	We suggest offering peer support for people with perinatal depression or risk of perinatal depression to improve depressive symptoms.	Weak for	Reviewed, New-added
		27.	We suggest exercise, mindfulness, yoga, or any combination of these interventions for depressive symptoms in perinatal patients.	Weak for	Reviewed, New-added
		28.	We suggest offering psychotherapies (e.g., cognitive behavioral therapy, Interpersonal Psychotherapy) or yoga or both for anxiety symptoms during and after pregnancy.	Weak for	Reviewed, New-added

[a] Additional information is available in the full CPG: see Determining Recommendation Strength and Direction.

[b] Additional information is available in the full CPG: see Recommendation Categorization.

Algorithm

This algorithm is designed to inform providers of the recommended interventions and appropriate timing of each of the recommended interventions for pregnant patients during pregnancy and in the postpartum period. The interventions included in the algorithm are paired with the corresponding recommendation in the VA/DoD Clinical Practice Guideline for the Management of Pregnancy. Following the algorithm, the narrative sections in the full text CPG and the Routine Pregnancy Care section in the full text CPG provide additional information.

A. Algorithm Key

Table 2 displays the key to the algorithm symbols and their meanings.

Table 2. Algorithm Key

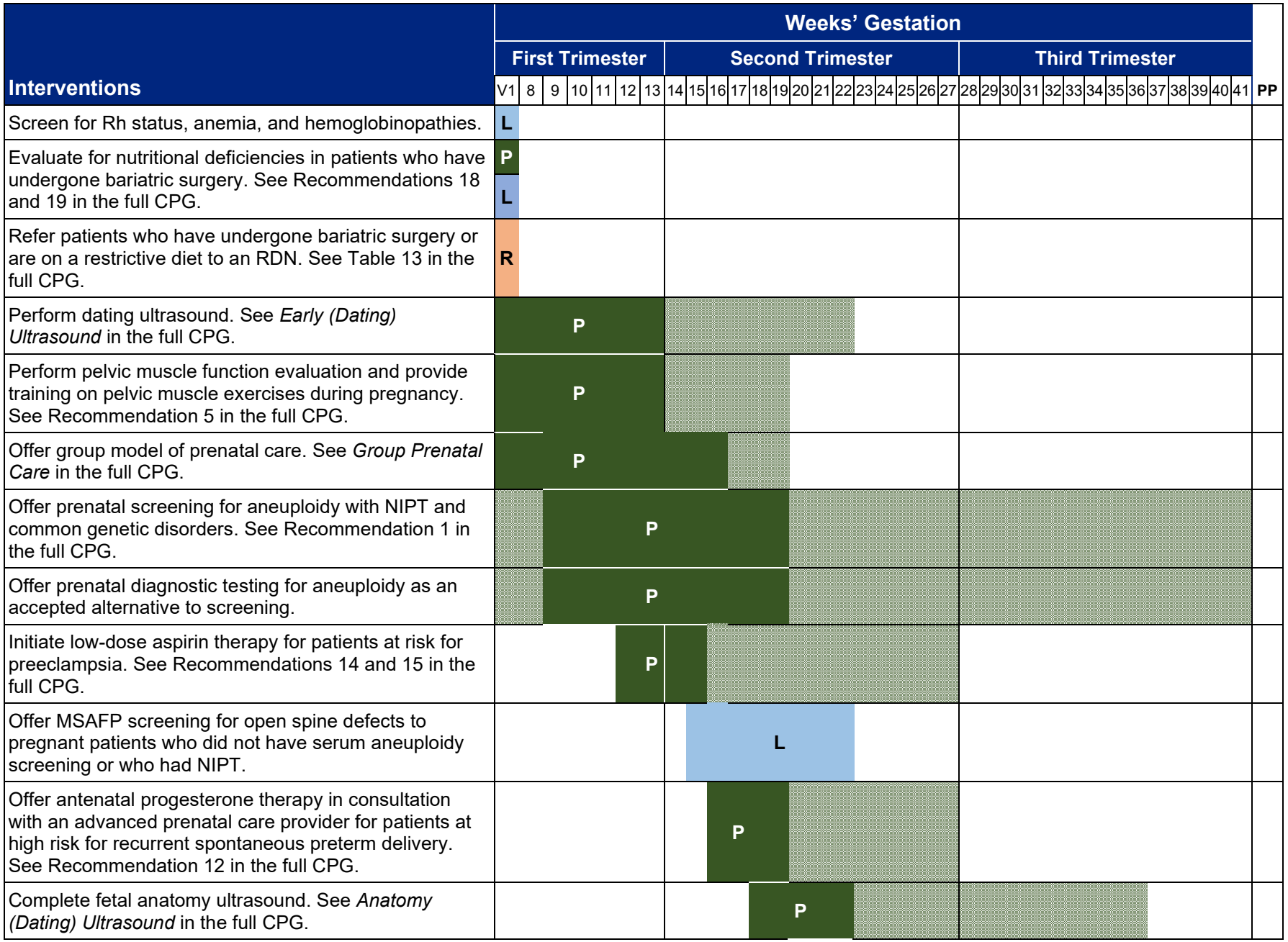
Symbol	Meaning
P	Action to be carried out by obstetric provider
R	Referral to be made to an advanced prenatal care provider (e.g., obstetrician, maternal-fetal medicine physician) or other allied health professional
L	Lab or labs to be ordered
Dotted	Pregnant patient to receive this action at this time (Timing is not ideal, but it is still helpful for the patient rather than not at all.)
V1	First visit
PP	Postpartum visit

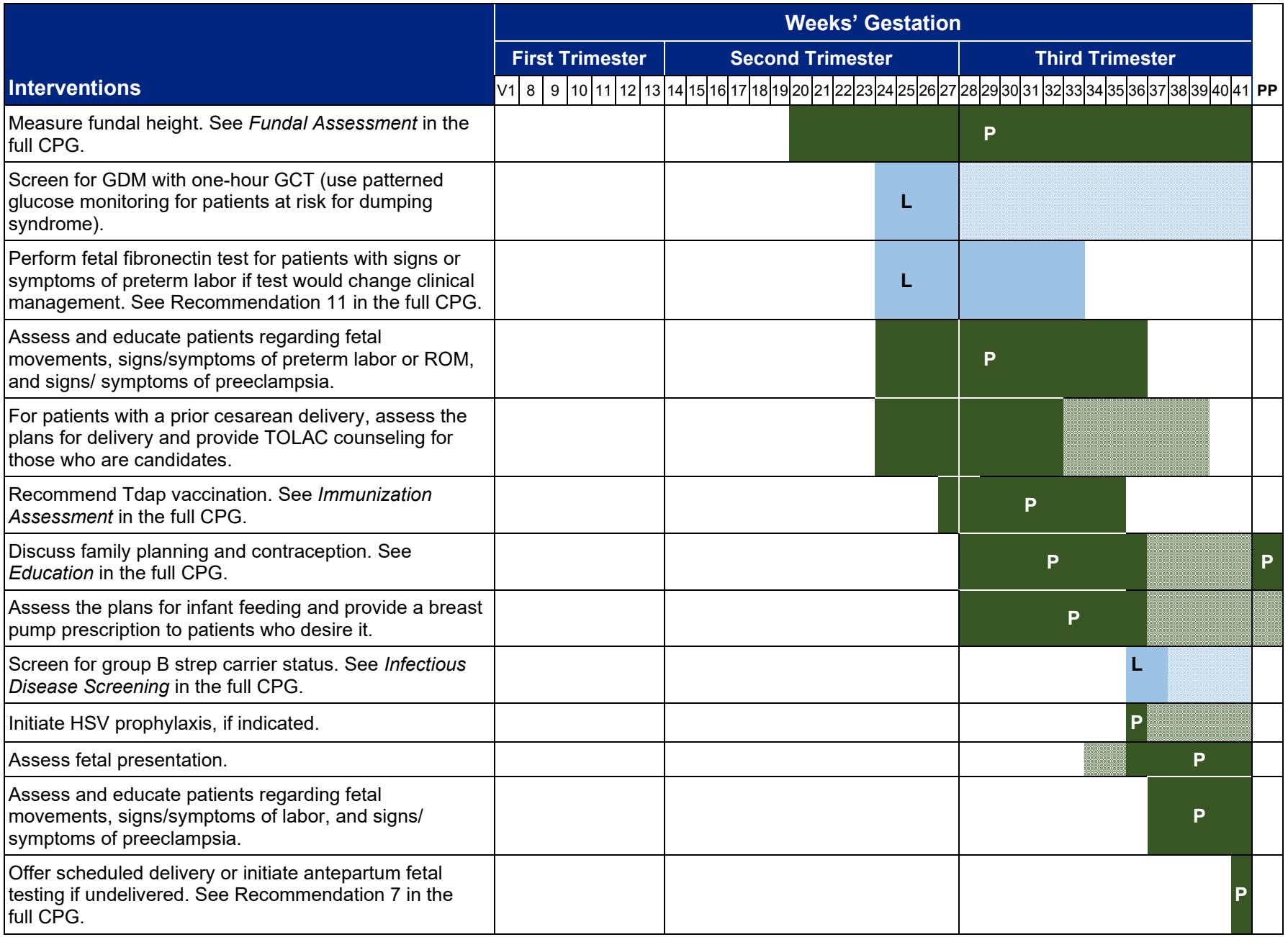
B. Interventions by Weeks' Gestation

Table 3 presents a week-by-week guide to prenatal care, including all interventions for a healthy pregnancy.

Table 3. Interventions by Weeks' Gestation

Interventions	Weeks' Gestation																																			
	First Trimester							Second Trimester														Third Trimester														
	V1	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	PP
Screen for tobacco and nicotine products, alcohol, cannabis, illicit drugs, caffeine use, herbal supplements, and inappropriate use of prescription medication; if positive, recommend cessation, and offer assistance. See Recommendation 20 in the full CPG.																			P																	
Provide prenatal education (e.g., dental health, breastfeeding, exercise, weight gain, work schedules, dietary supplementation). See *Education* in the full CPG.																			P																	
Recommend influenza vaccination (seasonal) for pregnant patients and family. See *Immunization Assessment* in the full CPG.																			P																	
Recommend COVID-19 vaccination. See *Immunization Assessment* in the full CPG.																			P																	
Screen for indications for referral to advanced prenatal care provider. See Table 11 in the full CPG.																			R																	
Screen for intimate partner violence using a validated tool (e.g., HITS). See *IPV Screening* in the full CPG.	P																					P														P
Screen for depression using a standardized tool (e.g., EPDS, PHQ-9). See Recommendation 21 in the full CPG.	P																					P														P
Perform routine prenatal lab evaluation for all pregnant patients and selective labs as indicated. See Table 8 in the full CPG.	L																																			
Screen for infectious diseases; treat or manage as indicated. See *Infectious Disease Screening* in the full CPG.	L																																			


Interventions
Weeks' Gestation
First Trimester
Second Trimester
Third Trimester
V1 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 PP
Screen for Rh status, anemia, and hemoglobinopathies.
L
Evaluate for nutritional deficiencies in patients who have undergone bariatric surgery. See Recommendations 18 and 19 in the full CPG.
P
L
Refer patients who have undergone bariatric surgery or are on a restrictive diet to an RDN. See Table 13 in the full CPG.
R
Perform dating ultrasound. See *Early (Dating) Ultrasound* in the full CPG.
P
Perform pelvic muscle function evaluation and provide training on pelvic muscle exercises during pregnancy. See Recommendation 5 in the full CPG.
P
Offer group model of prenatal care. See *Group Prenatal Care* in the full CPG.
P
Offer prenatal screening for aneuploidy with NIPT and common genetic disorders. See Recommendation 1 in the full CPG.
P
Offer prenatal diagnostic testing for aneuploidy as an accepted alternative to screening.
P
Initiate low-dose aspirin therapy for patients at risk for preeclampsia. See Recommendations 14 and 15 in the full CPG.
P
Offer MSAFP screening for open spine defects to pregnant patients who did not have serum aneuploidy screening or who had NIPT.
L
Offer antenatal progesterone therapy in consultation with an advanced prenatal care provider for patients at high risk for recurrent spontaneous preterm delivery. See Recommendation 12 in the full CPG.
P
Complete fetal anatomy ultrasound. See *Anatomy (Dating) Ultrasound* in the full CPG.
P


Interventions
Weeks' Gestation
First Trimester
Second Trimester
Third Trimester
V1 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 PP
Measure fundal height. See Fundal Assessment in the full CPG.
Screen for GDM with one-hour GCT (use patterned glucose monitoring for patients at risk for dumping syndrome).
Perform fetal fibronectin test for patients with signs or symptoms of preterm labor if test would change clinical management. See Recommendation 11 in the full CPG.
Assess and educate patients regarding fetal movements, signs/symptoms of preterm labor or ROM, and signs/ symptoms of preeclampsia.
For patients with a prior cesarean delivery, assess the plans for delivery and provide TOLAC counseling for those who are candidates.
Recommend Tdap vaccination. See Immunization Assessment in the full CPG.
Discuss family planning and contraception. See Education in the full CPG.
Assess the plans for infant feeding and provide a breast pump prescription to patients who desire it.
Screen for group B strep carrier status. See Infectious Disease Screening in the full CPG.
Initiate HSV prophylaxis, if indicated.
Assess fetal presentation.
Assess and educate patients regarding fetal movements, signs/symptoms of labor, and signs/ symptoms of preeclampsia.
Offer scheduled delivery or initiate antepartum fetal testing if undelivered. See Recommendation 7 in the full CPG.
P
L
P
L
P
P
P
P
L
P
P
P
P

Interventions	Weeks' Gestation																																					PP
	First Trimester							Second Trimester														Third Trimester																		
	V1	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41			
Educate patients about lifetime risk of CVD and DM for patients with GDM, HTN, preeclampsia or any combination of these problems.																																						P
Screen for current vaccination status in accordance with CDC guidance. See *Immunization Assessment* in the full CPG.																																						P
Screen for type 2 DM with a 2-hour GCT in patients who had GDM.																																						P
Screen for pelvic floor dysfunction and urinary incontinence; refer to Pelvic Health Rehabilitation if positive. See Recommendation 6 in the full CPG.																																						P R

Abbreviations: CDC: Centers for Disease Control and Prevention; COVID-19: coronavirus disease of 2019; CVD: cardiovascular disease; DM: diabetes mellitus; EPDS: Edinburgh Postnatal Depression Scale; GCT: glucose challenge test; GDM: gestational diabetes mellitus; HITS: Hits, Hurts, Insult, Threaten, Scream tool; HSV: herpes simplex virus; HTN: hypertension; IPV: intimate partner violence; MSAFP: maternal serum alpha-fetoprotein; NIPT: non-invasive prenatal testing; PHQ-9: 9-item Patient Health Questionnaire; RDN: registered dietician nutritionist; rh: rhesus; ROM: rupture of membranes; Tdap: tetanus, diphtheria, pertussis; TOLAC: trial of labor after cesarean

Routine Pregnancy Care

This CPG does not address every aspect of routine pregnancy care and is not intended to be a comprehensive guide to all care needed in pregnancy. In some cases, clinically important and part of the generally accepted standard of pregnancy care interventions do not have sufficient high-quality evidence to support a standalone recommendation. Additionally, some recommendations included in past versions of this CPG were determined by the Work Group to consistently be supported by the evidence to warrant inclusion as accepted standards of care without needing further evidence review. Lastly, the scope of the Work Group was limited to selected priority topics based on the needs of pregnant patients served by the VA and DoD health systems, which precluded review of all potentially relevant aspects of pregnancy care. The below information can be used to help guide providers during the routine aspects of the management of pregnancy.

A. Initial Prenatal Visit

a. Routine Lab Screening

The following panel of labs is recommended for all patients at the beginning of pregnancy to be done in conjunction with the initial prenatal visit. There are also optional labs that should be offered to all patients and some selective labs performed in response to the presence of certain risk factors. Table 4 lists the three types of prenatal lab panels.

Table 4. Prenatal Lab Panels

Prenatal Lab Panels		
Recommended for All Patients	• Blood type • Antibody screen • Complete blood count • Rubella status • Varicella status • Hepatitis B surface antigen	• Hepatitis C antibody • HIV status • Syphilis screen • Urine culture • Gonorrhea screen • Chlamydia screen
Offered to All Patients	• Hemoglobin electrophoresis • Aneuploidy screening • Cystic fibrosis carrier screening	• Spinal muscle atrophy carrier screening • Maternal serum alpha fetoprotein (15-22 weeks)
Selective Labs	• Cervical cytology, with or without HPV DNA • Comprehensive metabolic panel • Urine spot protein/creatinine ratio • 1-hour 50 gm oral glucose challenge test • Hemoglobin A1C • Thyroid stimulating hormone test	• If due for screening or surveillance • At risk for developing preeclampsia • At risk for developing preeclampsia • Increased risk for GDM • Pregestational diabetes mellitus • Pregestational diabetes mellitus, thyroid disease

Prenatal Lab Panels		
Selective Labs (cont.)	• Free thyroxine test • Fragile X screening	• Thyroid disease • Family history of related disorder, or suggestive intellectual disability

Abbreviations: GDM: gestational diabetes mellitus; HIV: human immunodeficiency virus; HPV: human papillomavirus

b. Early (Dating) Ultrasound

Accurate dating is crucial to the management of pregnancy because it drives the milestones and decision making for the application of appropriate monitoring and intervention as the pregnancy proceeds. The estimated due date is initially established by calculating 280 days from the first day of the last normal menstrual period. This practice has the potential to produce an inaccurate due date because only about 50% of patients accurately recall the date of the last menstrual period or because menstrual cycles might be shorter or longer than 28 days or might be irregular.(3) The Work Group advises a first-trimester ultrasound to establish or confirm the gestational age and estimated birth date and to confirm the presence of cardiac activity. For pregnant patients who present after the first trimester, we advise performing a dating and anatomical ultrasound at the earliest opportunity, preferably before 22 weeks. Besides confirming or establishing an estimated due date, there are other indications for performing an ultrasound early in pregnancy, including evaluation of vaginal bleeding, confirmation of an intrauterine location, presence and chronicity of multiple gestations, presence of uterine anomalies, or presence of other pelvic pathology. Patients with complaints of bleeding or pain should be referred for immediate ultrasound on presentation.

c. Genetic Screening

The many different methods for screening for fetal aneuploidy are offered at different times during a pregnancy. Although considered optional, prenatal fetal aneuploidy screening and diagnostic testing should be offered to all pregnant patients, regardless of risk of aneuploidy. Offering prenatal screening and diagnostic testing for aneuploidy, regardless of maternal age or risk factors, respects the values and preferences of patients who make this choice. See Recommendations 1 and 2 in the full CPG for further information on screening recommendations.

In addition to tests that screen for aneuploidy, maternal serum alpha-fetoprotein (MSAFP) can be used to screen for neural tube defects (NTD) such as open spina bifida. When performed between 15 and 22 weeks, this test is not a part of NIPT (prenatal cell-free DNA screening [cfDNA]) and should, therefore, be offered to patients who choose to undergo NIPT for their aneuploidy screening test. That MSAFP might have limited use on its own as a screening test is important to note given studies suggesting high-quality ultrasound has a higher detection rate for NTDs.(4) However, unexplained elevated MSAFP (elevated MSAFP unrelated to a diagnosis of open NTD or other anatomic malformation) is associated with an increased risk of adverse outcomes, such as preterm birth, preterm rupture of membranes (ROM), preeclampsia, fetal growth restriction,

abnormal placentation, and intrauterine fetal death.(5, 6) Therefore, we advise that pregnant patients with an unexplained elevation of MSAFP be evaluated and counseled by an advanced prenatal care qualified obstetric provider because of the increased risk for adverse perinatal outcomes. If cfDNA testing is chosen for aneuploidy screening, and MSAFP testing is desired, providers should *not* order serum screening (e.g., quad screen) with MSAFP because additional aneuploidy screening increases the risk of false positives and inconsistent lab results with no additional benefit.

In contrast to aneuploidy screening and MSAFP, genetic testing (e.g., parental carrier testing) can be done before or during pregnancy without need to repeat in a future pregnancy. These genetic tests include hemoglobin electrophoresis (to screen for hemoglobinopathy), carrier screening for cystic fibrosis (CF) and spinal muscular atrophy (SMA), which should be offered to all patients. In addition, fragile X carrier screening should be offered to patients at increased risk of the condition based on personal or family history of fragile X–related disorders (e.g., premature ovarian insufficiency, elevated follicle stimulating hormone level before age 40, a known FMR1 premutation, family history of intellectual disability suggestive of fragile X syndrome). A more comprehensive carrier screen panel may be considered for patients of Ashkenazi Jewish ancestry.(7)

d. Infectious Disease Screening

Screening for infectious diseases, listed below, during pregnancy per current guidance from the CDC is recommended. Appropriate follow-up treatment, prophylaxis treatment, or both depending on the history, known exposure, and symptoms of infectious disease are necessary.

- Gonorrhea
- Chlamydia
- Syphilis
- Human immunodeficiency virus (HIV)
- Hepatitis B virus
- Hepatitis C virus
- Rubella
- Varicella
- Human papillomavirus (HPV) (if the patient has a history of an abnormal cervical screen)
- Herpes simplex virus (HSV)
- Asymptomatic bacteriuria
- Tuberculosis
- Group B streptococcus (GBS)

Infectious diseases during pregnancy can cause significant morbidity and mortality in both the pregnant patient and the fetus. According to the CDC, screening for infectious diseases, counseling, and treatment can improve maternal and fetal outcomes.(8)

Group B streptococcus infections are the leading cause of serious neonatal infections (e.g., sepsis, meningitis, pneumonia) within the first 7 days of life (early-onset infection). Antenatal screening is recommended for all pregnant patients between 36 0/7–37 6/7

weeks, except for patients already identified as candidates for GBS prophylaxis based on urine culture or history of a prior affected infant. Because new exposures and infectious agents can emerge (e.g., Zika, COVID, monkeypox), referring to the most recent CDC guidance is important. Screening can lead to diagnosis in asymptomatic persons and can allow pregnant patients an opportunity to be treated.

e. Obstetric Risk Factor Assessment

Many conditions can adversely impact the outcome of a pregnancy, potentially placing the patient and fetus at risk for complications. Although this resource is not intended to provide guidance on the management of high-risk pregnancies, it does identify conditions that should be managed in consultation with an advanced prenatal care provider, as detailed in Tables 10.1–10.3 in the full CPG. As part of the initial evaluation, the primary obstetric provider must assess for certain risk factors early in the pregnancy because interventions, monitoring, and education throughout the pregnancy can have a positive impact on outcomes.

f. Preeclampsia

Given that preeclampsia is one of the leading causes of maternal morbidity and mortality, early identification of patients at risk for developing it is important. As detailed in Recommendations 14 and 15 in the full CPG, patients at high risk for developing preeclampsia should be treated with low-dose aspirin therapy to reduce that risk. An early evaluation might also consist of a complete metabolic panel and urine protein/creatinine ratio in patients at risk for having underlying hepatic or renal disease. Table 5 delineates risk factors associated with developing preeclampsia. Patients with one or more high-risk factors or two or more moderate-risk factors should be offered low-dose aspirin therapy between 12 and 28 weeks' gestation (optimally before 16 weeks) and should be continued daily until delivery.

Table 5. Clinical Risk Factors for Preeclampsia(9)

High Risk Factors	Moderate Risk Factors
• History of preeclampsia • Multifetal gestation • Chronic hypertension • Pregestational Type 1 or 2 diabetes mellitus • Renal disease • Autoimmune disease (e.g., antiphospholipid syndrome, systemic lupus erythematosus)	• Nulliparity • Obesity (body mass index >30) • Family history of preeclampsia • Black persons (due to social, rather than biological, factor[a]) • Lower income • Age 35 years or older • In vitro conception • Personal risk factors[b]

[a] These factors are associated with increased risk due to environmental, social, and historical inequities shaping health exposures, access to health care, and the unequal distribution of resources, not biological propensities.

[b] Low birth weight, previous adverse pregnancy outcomes, >10 years since last pregnancy.

g. Diabetes Mellitus

With increasing rates of both pregestational diabetes mellitus and GDM in the pregnant population in the U.S., providers might encounter patients who potentially benefit from early identification of GDM or new diagnoses of pregestational diabetes mellitus made in early pregnancy. Gestational diabetes mellitus affects about 4% of all pregnancies, and risk factors include having a prior pregnancy affected by GDM; having a prior delivery of a baby weighing more than 9 pounds at birth; being overweight or obese; having a family history of DM; being African American, Hispanic, American Indian, Alaska Native, Native Hawaiian, or Pacific Islander; being treated for HIV.(10) The Work Group did attempt to specifically examine the evidence on the utility of early GDM screening to reduce the incidence of gestational hypertension (GHTN), preeclampsia, or GDM. With this focused, narrow prompting question, only one pragmatic RCT met review criteria, which randomized 922 obese patients with a BMI greater than 30 to either early screening (14–20 weeks) or treatment as usual (TAU) (GDM screening at 24–28 weeks).(11) The results showed a potentially associated increased risk for GHTN and preeclampsia in the early GDM screening group, but the confidence intervals around the effect estimates for each of the three outcomes were wide and crossed 1.0, such that the differences between early care and TAU screening groups did not reach statistical significance. Future research is needed to define more clearly the benefits and harms of early GDM screening, optimal diagnostic thresholds and testing strategies for early screening, and potentially the patients who benefit most.

When considering early GDM screening for patients with multiple risk factors for GDM, providers should use clinical judgment regarding the benefits and harms of offering such early screening depending on individual patient characteristics. The Work Group also notes that American College of Obstetricians and Gynecologists (ACOG) and the United States Preventative Services Task Force (USPSTF) both offer guidance on early GDM screening for patients with multiple risk factors to support provider decision making regarding early GDM screening for patients with risk factors.(12, 13)

h. Spontaneous Preterm Birth

Affecting nearly 1 in 10 newborns, preterm birth is a major cause of perinatal morbidity and mortality. One-half of preterm births are related to spontaneous preterm labor. Although many risk factors are associated with spontaneous preterm birth, the strongest predictor is the history of spontaneous preterm birth. Other strong risk factors include prior preterm pre-labor ROM, multiple gestation, and short cervix. Given the time-sensitive nature to implement preventive strategies, the primary obstetric provider should assess the patient's risk for preterm birth at the initial prenatal visit. Patients at high risk for subsequent spontaneous preterm delivery should be counseled on the options for prevention. Women experiencing psychological distress related to high-risk status of having a spontaneous preterm birth or because of a history of spontaneous preterm birth should be offered mental health treatment. See Recommendation 12 in the full CPG for further information.

i. Screening for Intimate Partner Violence

Women who have served in the military are at higher risk of experiencing IPV than those who have never served in the military.(14) Women who experience IPV have a higher likelihood of unintended pregnancies and shorter interpregnancy intervals, in part because of reproductive coercion and reduced access to contraception.(15-18) Experiencing IPV during pregnancy is associated with reduced prenatal care and increased use of addictive substances.(19, 20) Independent of those factors, experiencing IPV while pregnant is associated with an increased risk of preterm birth, low birth weight, perinatal loss, and death by homicide or suicide.(21-23)

Perinatal care providers are especially well positioned to screen for IPV because of the frequency of health care contacts and opportunities for privacy.(24) It is important to screen more than once because individuals might feel unready to disclose initially. Several IPV screening tools have been validated, including the Modified E-HITS (Extended Hurt – Insult – Threaten – Scream), which has been validated for use with women Veterans.(25, 26) For patients who screen positive for IPV, we recommend completing an assessment and providing information, intervention, referrals, or any combination of these supports, as needed.

j. Depression Screening

Screening pregnant and postpartum patients for depression using a validated screening tool is more effective than usual clinical assessment in detecting depression and in reducing depressive symptoms, particularly when performed with access to interventions such as treatment protocols, care management, and trained providers.(27) Providers should screen patients at the first presentation, week 28 of gestation, and at the postpartum visit.

The Edinburg Postnatal Depression Scale (EPDS) and the Patient Health Questionnaire-9 (PHQ-9) are among the screening tools validated for perinatal use. Both screening tools are readily available in VA and DoD clinical settings. See Recommendation 21 in the full CPG for further information.

k. Substance Use Assessment

Perinatal use of alcohol, cigarettes, cannabis, illicit drugs, or unauthorized use of prescription medication is common and might be associated with adverse effects. Screening for use of these substances should occur at each prenatal and postpartum visit followed by additional evaluation and treatment based on screening results. See Recommendation 20 for further information.

l. Immunization Assessment

All pregnant and breastfeeding patients should be immunized according to current CDC schedules for vaccination. Immunizations of the birthing patient decrease the risk of life- or fetus-threatening diseases during pregnancy. Pregnant people are relatively

immunocompromised and can be severely affected by influenza, COVID-19, and other infectious pathogens. Immunizations help protect the birthing patient from infection. They also enhance the passive immunity of infants to pathogens that cause life-threatening illnesses.(28) Pertussis and influenza vaccines are recommended to be given during each pregnancy. Some patients might have concerns about the safety of vaccination in pregnancy; therefore, providers should be well versed in the safety and benefits of vaccine administration. In addition, providers should discuss with patients the immunization recommendations for the baby's family members and caregivers as provided by the CDC.(29)

Although the following list represents recommended vaccines to receive as a part of routine prenatal and postpartum care, active duty Service members are required to obtain many more vaccines for mission readiness. That pregnant Service members consult with their perinatal care provider is important to determine which vaccines are safe to take during pregnancy and which ones should be delayed until the postpartum period.

1. Given during Pregnancy

- **Pertussis:** Also known as whooping cough, pertussis is a highly contagious bacterial disease that can cause coughing and difficulty breathing. Pertussis poses a significant burden on infants and can be very serious or deadly, especially in those younger than 1 year. Pertussis-related hospitalizations and deaths are highest in infants younger than 2 months.(28) People who are pregnant should receive the Tdap (tetanus, diphtheria, and pertussis) vaccine during each pregnancy to provide passive immunity to infants, who would not otherwise routinely receive it until 2 months of age.(30) Although a pregnant person can receive the Tdap vaccine at any time during pregnancy, the optimal time to receive the vaccine is from 27–36 weeks' gestation, maximizing maternal antibody response and passive antibody transfer to the newborn. People who do not receive the Tdap vaccine during pregnancy should receive it in the immediate postpartum period if they had never received a prior dose. People who did not receive the Tdap vaccine during pregnancy but had received a prior dose of Tdap in their lifetime should not receive Tdap postpartum.(31)
- **Influenza:** Patients who acquire influenza during pregnancy are at increased risk for spontaneous abortion, maternal morbidity, and even death.(32) For this reason, all people who are or will be pregnant during influenza season should receive the influenza vaccine (an inactivated virus). According to the CDC, influenza vaccination is safe for both the pregnant patient and the fetus, regardless of gestational age. Influenza immunization has also been proven to protect both the birthing parent and child from influenza for several months after birth.(33)
- **COVID-19:** Pregnant and recently pregnant patients are more likely to develop severe illness from COVID-19 compared with people who are not pregnant. The CDC recommends COVID-19 vaccination and staying up-to-date with boosters

for everyone age 6 months and older, including pregnant and lactating patients.(34) COVID-19 infection during pregnancy is associated with an increased likelihood of adverse pregnancy outcomes including preterm birth and stillbirth.(35) Accumulating evidence supports the safety and effectiveness of COVID-19 vaccination during pregnancy. No increased risk of miscarriage, stillbirth, or birth defects have been identified with mRNA COVID-19 administration. No safety concerns were observed in animal studies. COVID-19 vaccination has been shown to reduce the risk of severe illness because of COVID-19 during pregnancy when comparing vaccinated versus nonvaccinated populations. Preliminary data suggest that there might be passive immunity and protection of infants, but more study is needed.(28)

2. Given Following Pregnancy

- **Varicella:** People with varicella infection during pregnancy have a 10–20% risk of developing pneumonia, a significant risk factor for maternal mortality, which is estimated to be as high as 40%.(36) In pregnancy, varicella might cross the placenta, resulting in congenital or neonatal varicella infection. Infection during the first half of pregnancy has been associated with congenital varicella syndrome.(37) Neonatal varicella zoster virus (VZV) infection is associated with a high neonatal death rate.(38) If the pregnant patient is determined to be not-immune by titers or other screening method (e.g., history of vaccination or disease), vaccination is recommended during the postpartum period. The vaccine is contraindicated during pregnancy. According to the CDC, patients who get the varicella vaccine may continue to breastfeed.(39-41)
- **Rubella:** Infection in the first 16 weeks of pregnancy can cause miscarriage or congenital rubella syndrome.(42) Because of concerns about possible teratogenicity and the theoretical risk to the fetus in administering a live vaccine to a pregnant patient, the measles, mumps, and rubella (MMR) vaccination is not recommended during pregnancy.(43, 44) Patients who are not immune to rubella should be vaccinated postpartum. According to the CDC, MMR vaccine is safe to receive during breastfeeding.(45)
- **Human papillomavirus:** The HPV vaccine is not recommended during pregnancy. It is not known to cause harm in a pregnant patient or fetus, but no specific studies evaluating the safety in the pregnant population exist. Vaccination should be delayed until after pregnancy. The vaccine may be administered to patients who are lactating.(46)

m. Medication and Supplement Review

Taking medicines during pregnancy is common; about 9 in 10 women take at least one medicine during pregnancy, and 7 in 10 take at least one prescription medication.(47) Medication review and reconciliation should occur at every prenatal visit and should include screening for potentially teratogenic medications, newly prescribed medications

since the last prenatal visit, over-the-counter medications, supplements, vitamins, and dietary or herbal products. The CDC has partnered with other federal agencies and non-federal partners to improve the health of pregnant people and fetuses by working to identify the safest treatment options for the management of common conditions before and during pregnancy.(48) As potentially teratogenic medications are identified, we recommend referral to a maternal-fetal medicine specialist.

n. Pelvic Muscle Function

A brief pelvic floor muscle evaluation should be conducted early in pregnancy, using a single-digit palpation to assess pelvic muscle strength, with follow-up instructions on how to properly facilitate an appropriate muscle contraction without compensatory patterns (e.g., gluteal or adductor muscle activation). If a patient is unable to activate their pelvic floor musculature, referral to a pelvic health rehabilitation specialist for PFMT would be appropriate. See Table 11 in the full CPG and Recommendation 5 and Recommendation 6 in the full CPG for further details.

A pelvic floor muscle activation exercise involves a muscle contraction and upward/inward movement of at least the following muscles: levator ani, obturator internus, transverse perineal, bulbocavernosis, ischiocavernosis, and anal sphincters.(49) Adjacent supporting muscle groups include the adductors, gluteals, and abdominal wall musculature commonly activated using compensatory strategies when pelvic floor muscle weakness or mobility limitations exist. The quality of the pelvic muscle contraction can be documented with the Laycock Pelvic Floor Manual Muscle Test Scale, which uses a 6-point Oxford scale (0=no contraction, 1=flicker, 2=weak, 3=moderate, 4=good [with lift], and 5=strong) during the internal examination to measure pelvic floor muscle strength in women.(50, 51) Defined as repeated voluntary muscle contractions, PFMT can be conducted independently or with supervision by trained providers as part of a comprehensive exercise program during pregnancy. Provider feedback training on proper pelvic floor muscle activation is critical before prescribing PFMT to patients.

Providers should also screen and adhere to trauma-informed care concepts while considering a patient's receptivity to pelvic examinations. Rates of sexual trauma are known to be high in military female Veterans and Service members.(52) (53) The recommended examination and training can be conducted easily in a short amount of time during an early pregnancy visit concurrent with a cervical cancer screening or ultrasound examination. If the patient is unable to appropriately activate the pelvic floor musculature or has a significant weakness, referral to a pelvic health rehabilitation specialist for further evaluation and treatment would be suitable (Table 11 in the full CPG).

B. Subsequent Prenatal Visits

a. Actions at Every Visit

The frequency of obstetric visits should be individualized. Typically, a patient with an uncomplicated first pregnancy is examined every 4 weeks until 28 weeks' gestation, every 2 weeks from 28–36 weeks' gestation, and then every week until delivery. People with medical or obstetric complications might require closer surveillance, and parous people without medical or obstetric complications, who have had prior normal pregnancy outcomes, may be seen less frequently as long as additional appointments are available as needed.(54)

Certain actions should be completed consistently at every visit, but other actions will be more specific to the gestational age.

During each regularly scheduled visit, the obstetric provider should evaluate the blood pressure, patient weight, uterine size for progressive growth and consistency with gestational age, and presence of fetal heart activity at appropriate gestational ages. After the pregnant patient reports quickening and at each prenatal visit thereafter, the obstetric provider should ask about fetal movement.(54)

b. Blood Pressure

Routinely measuring blood pressure at every visit is important in the early detection and continued management of HDP.(54, 55) Hypertensive disorders of pregnancy are associated with severe maternal complications, including myocardial infarction (MI) and stroke, and are a leading cause of pregnancy-related death in the U.S.(56) Early identification of HDP through blood pressure measurement can reduce morbidity, mortality, and severe complications, including death, through timely intervention and treatment.

c. Weight Gain

Routinely measuring weight for pregnant patients at every visit is useful in monitoring appropriate weight gain and allows the provider to offer interventions that can improve the short-term and long-term health of a pregnant patient and their fetus. Patients who are overweight or obese are at greater risk for adverse health conditions during the preconception, antepartum, and postpartum periods. Patients with low body mass index (BMI) are also at risk for adverse maternal and neonatal outcomes. Inadequate weight gain is a risk factor for spontaneous abortion, preterm birth, fetal growth restriction, HDP, and poor perinatal outcomes. Patients with anorexia nervosa might be identified by a low initial BMI, inadequate antepartum weight gain, or both.(57) This screening is particularly important in the military and Veteran population because studies have suggested that this population might be at greater risk for BMI-associated obstetrical complications.(58) More information regarding recommended weight gain is shown in Table 6.

Table 6. Weight Gain Recommendations for Singletons and Twins(59)

Pre-pregnancy Weight (BMI in kg/m^2)	Singletons	Twins
Underweight (BMI <18.5)	12.7–18.2 kgs (28–40 lbs)	22.7–28.1 kgs (50–62 lbs)
Normal Weight (BMI 18.5–24.9)	11.3–15.9 kgs (25–35 lbs)	16.8–24.5 kgs (37–54 lbs)
Overweight (BMI 25.0–29.9)	6.8–11.3 kgs (15–25 lbs)	14.1–22.7 kgs (31–50 lbs)
Obese (BMI ≥30.0)	5.0–9.1 kgs (11–20 lbs)	11.3–19.1 kgs (25–42 lbs)

Abbreviations: BMI: body mass index; kg/m^2: kilograms per square meter; kgs: kilograms; lbs: pounds

d. Fundal Assessment, Fetal Heart Tones, Fetal Movement

Assessment of the fundal height at each visit, beginning at 20 weeks' gestation, is a simple, inexpensive test to monitor expected growth. Fetal heart tones are recommended at each antenatal visit to confirm a viable fetus and to provide psychological reassurance to the pregnant patient. The pregnant patient's perception of fetal movements is the oldest and most commonly used method to assess fetal wellbeing as decreased fetal movement has been associated with an increased risk of stillbirth.(60)

e. Anatomy (Dating) Ultrasound

An integral part of routine antenatal care, antenatal ultrasonography is widely used in pregnancy to assess fetal growth and anatomy and to detect fetal anomalies. It is recommended as an accurate method of determining gestational age, fetal number, viability, anatomic survey, placental location, amniotic fluid, and assessment of pelvic organs. The optimal timing of the complete fetal anatomy ultrasound is in the second trimester between 18 and 22 weeks' gestation. Ultrasonography should be performed by technologists or providers who have undergone specific training and only when a valid medical indication for examination is present.

The diagnosis of a fetal anomaly significantly reduces perinatal mortality and morbidity and maternal morbidity. Prenatal diagnosis enables a psychologically less traumatic and early medical termination of pregnancy for patients who choose abortion. It also enables planning for specific fetal palliative care for patients who elect to continue pregnancy. It decreases probable complications of continuation of pregnancy and labor, prevents an unnecessary cesarean section for a fetus with lethal anomalies diagnosed too late for medical termination of pregnancy, allows planning delivery at the optimal time in a well-equipped tertiary care center with necessary neonatal care facilities, and allows in utero therapy in selected cases. Based on evidence currently available, routine clinical scanning of every pregnant patient using real-time B-mode (2-D) imaging is not contraindicated.

The standard ultrasound evaluation includes the evaluation of fetal presentation, amniotic fluid volume, fetal cardiac activity, placental position, fetal biometry, and fetal number plus an anatomic survey.

f. 24–28 Weeks

1. Family Planning

The ideal time to begin an in-depth discussion with the patient with respect to family planning goals is 24–28 weeks' gestation. Formulating these goals at this point better prepares the patient for an optimal individualized plan in the event of a preterm delivery or if immediate postpartum contraception is desired. See the Education section for additional details on family planning.

2. Gestational Diabetes Mellitus

Screening for GDM using the 1-hour 50 gram oral glucose challenge (GCT) test is recommended for all pregnant patients beginning at 24 weeks of pregnancy.(61) Screening is ideally completed by 28 weeks of pregnancy. Patients who screen positive should undergo a 3-hour 100 gram oral glucose tolerance test to establish a diagnosis. See the section on Diabetes Mellitus which discusses the potential role of GDM screening before 24–28 weeks. Should a diagnosis of GDM be established during the pregnancy, maternity care providers should take care to perform a 2-hour 75 gram oral glucose tolerance test at the 6–8 weeks postpartum visit to ensure resolution of the GDM. Given the increased lifetime risk for progression to type 2 DM, communication of this pregnancy complication to subsequent primary care providers is important and affects subsequent lifetime DM screening recommendations.

3. Complete Blood Count – Anemia

Because of plasma volume expansion and increased iron requirements during pregnancy, all pregnant patients should be rescreened for anemia between 24–28 weeks of pregnancy.(62) In the second trimester, hemoglobin and hematocrit values below 10.5 and 32.0, respectively, warrant further investigation and treatment. Values below 11.0 and 33.0 in the third trimester require additional investigation and treatment.

4. Tdap

Pregnant patients should receive the Tdap vaccine during each pregnancy to provide passive immunity through breastmilk to newborns, who would not otherwise routinely receive it until 2 months of age.(30) Although a pregnant patient can receive the Tdap vaccine at any time during pregnancy, the optimal time to receive the vaccine is from 27–36 weeks' gestation, maximizing maternal antibody response and passive antibody transfer to the newborn.

5. Rho(D) Immune Globulin

Rhogam for the prevention of Rh(D) alloimmunization should be given to all Rh-negative pregnant patients at the 28-weeks prenatal visit.

"The USPSTF recommends repeated Rh(D) antibody testing for all unsensitized Rh(D)-negative women at 24 to 28 weeks' gestation unless the biological father is known to be Rh(D)-negative."(63)

6. Depression Screening

Pregnant patients should be screened for depression using validated instruments (e.g., EPDS, PHQ-9) at approximately 28 weeks. See Recommendation 21 for further details.

g. 36 Weeks

1. Group B Streptococcus Screening

Group B streptococcus is the leading cause of early-onset sepsis in newborns, the primary risk factor being maternal colonization of the genitourinary and gastrointestinal tracts. Antenatal screening is recommended for all pregnant patients between 36 0/7–37 6/7 weeks, except for patients already identified as candidates for GBS prophylaxis based on urine culture or history of a prior affected infant.(64) A single vaginal and rectal swab should be used to collect the sample for culture, and antibiotics should be initiated in labor for patients who screen positive.(65) Samples collected by a provider or patient self-collected are acceptable methods of screening.(66) GBS culture is highly predictive of colonization within 5 weeks of collection; repeat screening should be considered if more than 5 weeks have elapsed before the onset of labor.(64)

2. Fetal Presentation

Assessment of fetal presentation should take place at 36 weeks' gestation, ideally, with the use of ultrasound for confirmation.(67, 68) Cephalic presentation will be found in many patients; in the case of non-cephalic presentation, counseling and intervention are recommended. If a breech presentation is found, an external cephalic version (ECV) should be offered at 37 weeks if there is no contraindication.(69) This timing allows adequate opportunity for spontaneous cephalic version, minimizes the chance of reversion if successful, and reduces the chance of iatrogenic preterm delivery. Potential benefits of this management include improving vaginal delivery rates and reducing the morbidity associated with cesarean delivery. ECV can be offered to patients with or without a previous cesarean birth.(70)

C. Postpartum

To optimize the current and future health of recently pregnant patients and their neonates, postpartum care should be treated as an ongoing process, instead of a single encounter. The care should be tailored to the patient's individual needs.(71)

Ideally, all patients should have initial contact with their obstetric provider within 3 weeks of birth; this initial assessment can be done either in-person or via telehealth. By the end of this visit, a plan for individualized postpartum follow-up care should be determined.

Prioritizing early in-person follow-up rather than telehealth alone should be considered for individuals with a high risk of postpartum depression, high risk of cesarean wound infection or perineal wound infection (from third- or fourth-degree lacerations), lactation difficulties, or chronic conditions likely to require postpartum medication titration.

All individuals with HDP should be assessed no later than 7–10 days after delivery. Individuals with severe HTN should additionally have a blood pressure evaluation within 72 hours of hospital discharge after birth.

All patients should have a comprehensive postpartum visit with their obstetric provider no later than 12 weeks after birth. The timing of this visit should be individualized, and patient centered and should take into account insurance coverage for postpartum care but usually occurs 6–12 weeks following birth. The comprehensive postpartum visit should include an interval history and assessment of physical wellbeing as well as screening and assessment of mood and social wellbeing factors, infant care and feeding, sexual function, contraception, birth spacing, sleep and fatigue, physical recovery from birth, pelvic floor disorders, chronic disease management, and health maintenance.

Individuals with uncomplicated medical histories, deliveries, and postpartum courses will generally transition to ongoing routine care with their primary care provider following the comprehensive postpartum visit with their obstetric provider. This ongoing follow-up and adequate transition from obstetric care to primary care is important for all patients, but it is especially important for individuals who experienced complications during pregnancy and in the postpartum period. Hypertensive disorders of pregnancy, preterm delivery, and GDM are associated with a higher lifetime risk of maternal cardiometabolic disease and warrant additional counseling. Hypertensive disorders, DM, thyroid disorders, renal disease, mood disorders, obesity, substance use disorders, and complex social determinants of health needs warrant communication from the obstetric care provider to the primary care provider and team to coordinate ongoing and long-term follow-up care. Within the VA system, MCCs—patient navigators specifically designated to work with pregnant patients and coordinate their care—contact patients postpartum and assess for medical complications of pregnancy as well as ongoing medical, behavioral, and social determinants of health needs. Based on this assessment, the MCC makes appropriate referrals including mental health, social work, and primary care follow-up, highlighting key issues to the primary care team.

a. Postpartum Contraception

Contraceptive counseling should be initiated during prenatal care, and a plan should be made for postpartum contraception before delivery. Patients should be counseled on all available contraceptive options tailored to the patient's preference and medical history. Counseling should include immediate postpartum long-acting reversible contraceptives (LARC).(72) Immediate postpartum LARC, for people who desire them, may support these patients to receive their preferred contraceptive while avoiding the logistical complexity of attending an in-person visit during the first weeks postpartum. Removing these barriers for patients at high risk of future medical complications in future pregnancies might be particularly beneficial.(73)

Contraception should be addressed with all patients during their postpartum visits to make any needed adjustments to the postpartum contraceptive care plan.(72)

D. Education

a. Breastfeeding/Chestfeeding

Current guidelines endorsed by multiple medical organizations recommend exclusive breastfeeding/chestfeeding for 6 months and continued breastfeeding/chestfeeding for up to 2 years or beyond with the addition of complementary foods per the desires and goals of the parent or parents. Birthing parent benefits of breastfeeding/chestfeeding include positive impacts on a person's risk of breast cancer, ovarian cancer, hypertensive heart disease, and DM. Child benefits include reduced risk of otitis media, SIDS, childhood leukemia, obesity, and many other acute and chronic disorders.(74, 75) Even with these known benefits and recommendations, more than one-half of women in the U.S. stop breastfeeding earlier than they desire.(76) Breastfeeding rates of Service members are lower than the national average in the U.S. general population by 7% at 6 months (51%) and 10% at 12 months (25%).(77) We advise health care providers to incorporate mechanisms and processes within their practice to enable people to achieve their infant feeding goals, including patient education throughout pregnancy, access to lactation specialists, community support, and active mitigation of potential barriers. See Recommendation 3 and Recommendation 4 in the full CPG for further information.

b. Oral Health

Pregnancy presents a unique opportunity for health care professionals to positively impact the oral health of patients. Occurring in up to 40% of pregnant people, periodontal disease is associated with adverse perinatal outcomes, including preterm delivery, low birth weight, fetal grown restriction, and preeclampsia.(78, 79) Although recommendations for treatment of periodontal disease cannot be endorsed specifically at this time to decrease these outcomes, evidence indicates that treatment is safe and is associated with the improvement in maternal oral health.(78-80) Pregnancy is not a significant contraindication to most dental services, though some procedures requiring general anesthesia might be deferred to the postpartum period. Oral health care is not just a component of a healthy pregnancy; evidence suggests that most infants and young children acquire caries-causing bacteria from their mothers.(81) Routine dental care, including x-rays (with proper anatomic shielding) and periodontal therapy, along with good oral hygiene, should be encouraged throughout pregnancy.(81, 82)

c. Family Planning and Contraception

Assessment of future reproductive goals during the prenatal period is important to allow for adequate education and planning for the implementation of desired contraceptive therapies during the postpartum period. Providers should counsel patients on the recommendations for interpregnancy intervals to optimize their overall health and reduce the risk of adverse perinatal outcomes in subsequent pregnancies.(83) Given that 70% of pregnancies occurring within 1 year after delivery are unintended, access to and initiation of reliable forms of contraception to include emergency contraception during the postpartum period are essential to ensure women meet their reproductive

and family-planning goals.(84) These measures include access to the immediate postpartum placement of LARCs and postpartum sterilization, where appropriate, because these methods are associated with lower rates of unintended pregnancies in active duty Service members.(85) Contraceptive education and counseling should be an integral part of routine prenatal care to optimize the provision of contraceptive and family-planning services during the postpartum and interpregnancy periods.

d. Exercise and Work

The U.S. Department of Health and Human Services recommends that pregnant patients engage in at least 150 minutes of moderate-intensity aerobic activity each week during pregnancy and postpartum barring no complications that would prevent otherwise.(86) Benefits of exercising during pregnancy include an increased chance for a vaginal delivery and reductions in weight gain, GDM, gestational HDP, preterm birth, low birth rate, and cesarean birth.(87) We recommend that all healthy, pregnant patients without known contraindications participate in regular mild to moderate exercise sessions, three or more times per week. We suggest that patients be provided with education on the safety and benefits of maintaining appropriate levels of activity and exercise during the pregnancy and postpartum period. We also suggest that patients with uncomplicated pregnancies may continue a standard work schedule throughout their pregnancy. See Recommendation 8 in the full CPG for more details. Patients should be instructed to conduct pelvic floor muscle exercises during and after pregnancy to improve function and reduce the risk of developing urinary incontinence during and after pregnancy. See Recommendation 5 in the full CPG for more details.

e. Vitamins

We suggest a daily multivitamin that includes at least 400 micrograms of folic acid be taken starting 1 month before conception and continued throughout pregnancy and lactation. People in the U.S. commonly supplement their diet with vitamins and minerals during pregnancy. Supplementation with multivitamins and minerals has also been associated with improved outcomes, including lower risks of preeclampsia and three forms of childhood cancer (pediatric brain tumors, neuroblastomas, and leukemia).(88, 89) Studies have found that preconception folic acid supplements, either alone or combined with other vitamins or minerals (e.g., in a multivitamin), reduce the risk of NTDs and should be continued through the first trimester of pregnancy.(90-92) Higher doses of folic acid are recommended in certain patients at high risk for NTDs (e.g., patients with a history of an NTD-affected pregnancy).

f. Group Prenatal Care

A group model of prenatal care can be an acceptable alternative to individual provider appointments. Evidence exists that group prenatal care is associated with lower rates of preterm delivery, especially among African-American women.(93-95) Also, no evidence of harm through participation in group prenatal care has been found. Given that patient preferences and values might affect a patient's desire to pursue individualized care

versus group care, offering group prenatal care would allow patients to choose how they engage in health care and could potentially lead to increased patient satisfaction in their care. It also might allow for more efficient use of resources to include low-density specialists who can offer preventive education and support (e.g., pelvic health rehabilitation providers, registered dietician nutritionists [RDN], lactation consultants). Patients should be educated on these potential benefits and offered a group model option of prenatal care, where available, as an acceptable alternative to individual appointments.

Scope of the CPG

This CPG is based on published clinical evidence and related information available through June 1, 2022. It is intended to provide general guidance on best evidence-based practices (see Appendix A in the full text CPG for additional information on the evidence review methodology). Although the CPG is intended to improve the quality of care and clinical outcomes (see Introduction), it is not intended to define a standard of care (i.e., mandated or strictly required care).

The patient population of interest for this CPG is pregnant patients who are eligible for care in the VA or DoD health care delivery systems, and those who receive care from community-based providers. It includes Veterans and Service members as well as their dependents.

This CPG is intended for use by VA and DoD providers and other providers involved in the care of pregnant patients. Additionally, this CPG is intended for community-based providers involved in the care of pregnant Service members, beneficiaries, or Veterans.

Methods

The Work Group used the GRADE approach to craft each recommendation and determine its strength. Per the GRADE approach, recommendations must be evidence based and cannot be made based on expert opinion alone. The GRADE approach uses the following four domains to inform the strength of each recommendation (see Determining Recommendation Strength and Direction).(96)

1. Confidence in the quality of the evidence
2. Balance of desirable and undesirable outcomes
3. Patient values and preferences
4. Other considerations, as appropriate (e.g., resource use, equity, acceptability, feasibility, subgroup considerations)

Using these four domains, the Work Group determined the relative strength of each recommendation (*Strong* or *Weak*). The strength of a recommendation is defined as the extent to which one can be confident that the desirable effects of an intervention outweigh its undesirable effects and is based on the framework above, which incorporates the four

domains.(97) A *Strong* recommendation generally indicates *High* or *Moderate* confidence in the quality of the available evidence, a clear difference in magnitude between the benefits and harms of an intervention, similar patient values and preferences, and understood influence of other implications (e.g., resource use, feasibility).

In some instances, insufficient evidence exists on which to base a recommendation for or against a particular therapy, preventive measure, or other intervention. For example, the systematic evidence review might have found little or no relevant evidence, inconclusive evidence, or conflicting evidence for the intervention. The manner in which this finding is expressed in the CPG might vary. In such instances, the Work Group might include among its set of recommendations a statement of insufficient evidence for an intervention that might be in common practice although it is unsupported by clinical evidence and particularly if other risks of continuing its use might exist (e.g., high opportunity cost, misallocation of resources). In other cases, the Work Group might decide to exclude this type of statement about an intervention. For example, the Work Group might remain silent where an absence of evidence occurs for a rarely used intervention. In other cases, an intervention might have a favorable balance of benefits and harms but might be a standard of care for which no recent evidence has been generated.

Using these elements, the Work Group determines the strength and direction of each recommendation and formulates the recommendation with the general corresponding text, as shown in Table 7.

Table 7. Strength and Direction of Recommendations and General Corresponding Text

Recommendation Strength and Direction	General Corresponding Text
Strong for	We recommend . . .
Weak for	We suggest . . .
Neither for nor against	There is insufficient evidence to recommend for or against . . .
Weak against	We suggest against . . .
Strong against	We recommend against . . .

Guideline Development Team

Table 8. Guideline Work Group and Guideline Development Team

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Patient-centered Care

Intended to consider patient needs and preferences, guideline recommendations represent a whole/holistic health approach to care that is patient centered, culturally appropriate, and available to people with limited literacy skills and physical, sensory, or learning disabilities. VA/DoD CPGs encourage providers to use a patient-centered, whole/holistic health approach (i.e., individualized treatment based on patient needs, characteristics, and preferences). This approach aims to treat the particular condition while also optimizing the individual's overall health and wellbeing.

Regardless of the care setting, all patients should have access to individualized evidence-based care. Patient-centered care can decrease patient anxiety, increase trust in providers, and improve treatment adherence.(98, 99) A whole/holistic health approach (https://www.va.gov/wholehealth/) empowers and equips individuals to meet their personal health and wellbeing goals. Good communication is essential and should be supported by evidence-based information tailored to each patient's needs. An empathetic and non-judgmental approach facilitates discussions sensitive to sex, culture, ethnicity, and other differences.

Shared Decision Making

This CPG encourages providers to practice shared decision making, a process in which providers, patients, and patient care partners (e.g., family, friends, caregivers) consider clinical evidence of benefits and risks as well as patient values and preferences to make decisions regarding the patient's treatment.(100) Shared decision making is emphasized in *Crossing the Quality Chasm,* an Institute of Medicine, now NAM, report in 2001 (101) and is inherent within the whole/holistic health approach. Providers must be adept at presenting information to their patients regarding individual treatments, expected risks, expected outcomes, and levels or settings of care or both, especially where patient heterogeneity in weighing risks and benefits might exist. VHA and MHS have embraced shared decision making. Providers are encouraged to use shared decision making to individualize treatment goals and plans based on patient capabilities, needs, and preferences.

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Access to the full guideline and additional resources is available at: https://www.healthquality.va.gov/.