

# VA/DOD CLINICAL PRACTICE GUIDELINE FOR THE MANAGEMENT OF UNCOMPLICATED PREGNANCY

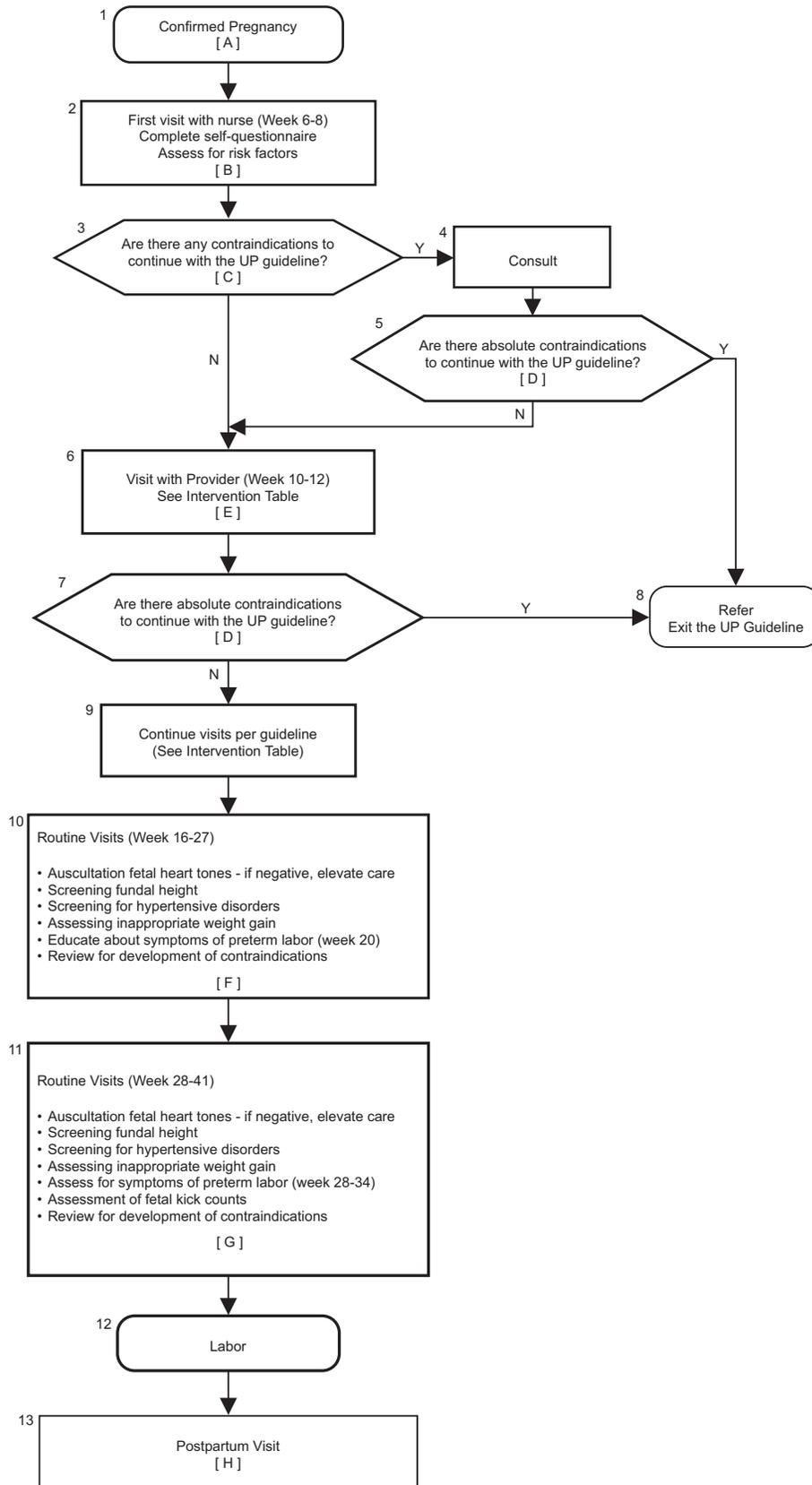
## SUMMARY GUIDELINE

### KEY ELEMENTS

Change in the traditional interval-based visit template to a system with specific gestational age visits, each having a specific well-defined goal and objectives.

- Standardized prenatal care for lower risk patients to minimize variation.
- Standardized care plan to improve overall patient satisfaction with prenatal care.
- Explicit, evidence-based interventions for screening and management.
- Standardized education of patients and providers.
- Standardized counseling for antenatal diagnostic screening
- Standardized prenatal screen to identify women with high-risk pregnancies.
- Accompanying tool kit to empower implementation.

# DoD/VA Clinical Practice Guideline for Management of Uncomplicated Pregnancy



## ANNOTATIONS

### Confirmed Pregnancy

Confirmation of pregnancy is established by a confirmed positive urine or serum pregnancy test.

### First Visit With Nurse At 6-8 Weeks

After confirmation of the pregnancy through a confirmed positive urine or serum pregnancy test, the goal of the first prenatal contact is to exchange information and identify existing risk factors that may impact the

pregnancy. This initial contact may be accomplished in a group setting or during a one-on-one visit. Table 1 contains a checklist of the data collected during the first visit with the nurse and/or health care provider (Family Practitioner, Certified Nurse-Midwife or Obstetrician/Gynecologist [OB/GYN]). These data are required to assess the appropriateness of using the Uncomplicated Pregnancy Guideline follow-up. In addition, all active duty pregnant women are required to have an occupational health screening per AR40-501 exception to policy.

**TABLE 1. PRENATAL RISK ASSESSMENT CHECKLIST**

Risk	SELF-QUESTIONNAIRE (SEE APPENDIX A)	History Taking	Physical Exam (First Visit with Provider)	Lab
Past OB history - If prior macrosomia or prior gestational diabetes mellitus (GDM)	√			Glucola for GDM
Drug use/alcohol use/smoking	√	√		
Prescription, over-the-counter, and herbal medications	√	√		
Thyroid disorders	√		√	
Gastrointestinal disorders	√	√		
Hypertension	√	√	√	
Cardiovascular diseases - pulmonary	√			
Diabetes mellitus (DM) – Type 1 or 2 - Family history of DM in first or second degree relative	√	√		Glucola for GDM
Renal disorder	√			
Autoimmune disorder (AIDS)/ Lupus	√			
Blood disorders	√			
Sexually transmitted disease (STD)	√	√	√	√
Human immunodeficiency virus (HIV)	√			√
Tuberculosis	√	√		
Cancer	√			
Transplant	√			
Surgery/cesarean/breast/gynecology	√			
Mental disease	√			
Uterine abnormality	√			
Genetic disease/family history of genetic disease	√			
Religion		√		
Language barrier		√		
Diet restriction	√			
Eating disorder	√	√		
Body mass index (BMI) - If >29			√	Glucola for GDM
Age (<16 or >40)	√			
Vital signs			√	
Domestic violence	√	√	√	
Homeless		√		
Blood pressure			√	
Cardiac abnormality	√		√	
Vaginal bleeding	√	√	√	
Pelvic exam			√	Cervical smear
Dating criteria	√	√	√	
Complete blood count (CBC)				√
(ABO Rh) blood typing				√
Rapid plasma reagent (RPR)				√
Rubella test				√
Hepatitis B surface antigen test				√
Gonorrhea and chlamydia test				√
Urinalysis and culture				√
Antibody screen				√

*Initial OB labs should be reviewed and documented at the following visit.*

## ARE THERE ANY CONTRAINDICATIONS TO CONTINUE WITH THE UNCOMPLICATED PREGNANCY GUIDELINE?

### Indications for Referral to Physician on First Visit

#### Past OB/GYN History:

- Prior preterm delivery (<37 weeks)
- Intrauterine fetal demise (IUFD) – 10 weeks after cardiac activity
- Prior cervical/uterine surgery
- Prior preterm labor requiring admission (e.g., early cervical change)
- Fetal anatomic abnormality (e.g., open neural tube defects in prior child or first degree relative)
- Past complicated pregnancy

#### Medical History:

- Pre-existing diabetes
- Gestational diabetes
- HIV
- Chronic hypertension

- Systemic disease that requires ongoing care (e.g., severe asthma, lupus, and inflammatory bowel disease)
- Current mental illness requiring medical therapy
- Cancer
- Seizure disorders
- Hematologic disorders
- Recurrent urinary tract infections/stones

#### Psycho-Social:

- Substance use disorders
- Eating disorders
- Postpartum depression

#### Conditions in Current Pregnancy:

- Relative BMI <16.5
- Age (<16 or >40 years at delivery)
- Vaginal bleeding

## ARE THERE ABSOLUTE CONTRAINDICATIONS TO CONTINUE WITH THE UNCOMPLICATED PREGNANCY GUIDELINE?

### Absolute Contraindications to the Uncomplicated Pregnancy Guideline:

Pregnant women identified as having any of the following conditions should exit the Uncomplicated Pregnancy Guideline.

- Pre-existing diabetes
- Gestational Diabetes Mellitus (GDM)
- Fetal anomaly or abnormal presentation ( $\geq 36$  weeks)
- Multiple gestation
- Placenta previa
- Chronic hypertension
- Systemic disease that requires ongoing care (e.g., severe asthma, lupus, and inflammatory bowel disease)
- Drug abuse
- HIV (or abnormal screen)

### Relative Contraindications to the Uncomplicated Pregnancy Guideline:

Pregnant women identified as having one or more of the following conditions should be evaluated by a healthcare provider (experienced in obstetrics) to determine the risk of continuing with the Uncomplicated Pregnancy Guideline.

- Age (<16 or >40 years at delivery)
- Past complicated pregnancy

- Prior preterm delivery (<37 weeks)
- Prior preterm labor requiring admission (e.g., early cervical change)
- Intrauterine fetal demise (IUFD) – 10 weeks after cardiac activity was first noted
- Prior cervical/uterine surgery
- Fetal anatomic abnormality (e.g., open neural tube defects in prior child or first degree relative)
- Abnormal fetal growth
- Preterm labor requiring admission (i.e., regular uterine contractions and cervical change)
- Abnormal amniotic fluid
- Second or third trimester bleeding
- Relative BMI <16.5
- Hematologic disorders
- Severe anemia (<24 percent hematocrit)
- Cancer
- Seizure disorders
- Recurrent urinary tract infection/stones
- Substance use disorders (alcohol/tobacco)
- Eating disorders
- Surgery
- Abnormal screen – antibody, hepatitis, syphilis, and Papanicolaou (PAP)
- Abnormal maternal serum analyte test
- Current mental illness requiring medical therapy

### **Visit With Provider At Weeks 10-12**

See *Prenatal Care Interventions and Interventions Summary Table*.

### **Routine Visits At Weeks 16-27**

Visits during this period should include the following:

- Auscultation of fetal heart tones - if negative, elevate care
- Screening fundal height
- Screening for hypertensive disorders
- Assessing inappropriate weight gain
- Educate about symptoms of preterm labor (week 20)
- Review for development of contraindications – exit the Uncomplicated Pregnancy Guideline if absolute contraindications are identified

For specific interventions see *Prenatal Care Interventions – Weeks 16-27*.

### **Routine Visits At Weeks 28-41**

Visits during this period should include the following:

- Auscultation of fetal heart tones - if negative, elevate care
- Screening fundal height
- Screening for hypertensive disorders

- Assessing inappropriate weight gain
- Assess for symptoms of preterm labor (week 28-34)
- Assessment of fetal kick counts
- Review for development of contraindications - exit the Uncomplicated Pregnancy Guideline if absolute contraindications are identified

For specific interventions see *Prenatal Care Interventions – Weeks 28-41*.

### **Postpartum Visit**

The postpartum visit provides the opportunity for providers to interact with the new mother and her infant through interview, exam, and testing. The timing and the content of the postpartum visit have often been topics for debate. Recent literature helps the provider to answer these questions based on the evidence.

- The maternal postpartum visit should occur approximately 8 weeks after delivery. Eight weeks is the optimal time to decrease the rate of false positive cervical smears, though consideration of the mother's schedule should also be taken into account.
- Tests that should be performed at this visit include the cervical smear, pelvic exam, and breast exam.
- Topics addressed at this exam should include contraception, postpartum depression, feeding method, sexual activity, weight, exercise, and the woman's assessment of her adaptation to motherhood.

## PRENATAL CARE INTERVENTION SUMMARY TABLE

Antenatal care for all pregnant women who meet criteria for the Uncomplicated Pregnancy Guideline should include the following interventions. *It is recommended that each intervention be completed by the indicated week (NOTE: Between weeks 38-41, weekly visits are recommended).*

INTERVENTIONS		WEEK							
		6-8	10-12	16-20	24	28	32	36	38-41
<b>Interventions At All Visits</b>									
I-1	Screening for hypertensive disorders	√	√	√	√	√	√	√	√
I-2	Breastfeeding education	√	√	√	√	√	√	√	√
I-3	Exercise during pregnancy	√	√	√	√	√	√	√	√
I-4	Influenza vaccine (* season-related)	√	√	√	√	√	√	√	√
<b>First Visit With Nurse [6-8 Weeks]</b>									
I-5	Screening for tobacco use - offer cessation	√							
I-6	Screening for alcohol use - offer cessation	√							
I-7	Screening for drug abuse - offer treatment	√							
I-8	Screening for domestic abuse	√			√		√		
I-9	Screening for Rh status	√							
I-10	Screening for rubella	√							
I-11	Screening for varicella	√							
I-12	Screening for hepatitis B	√							
I-13	Screening for syphilis rapid plasma reagin	√							
I-14	Screening for asymptomatic bacteriuria	√							
I-15	Screening for HIV - counsel	√							
I-16	Immunization - Td booster (first trimester)	√							
I-17	Immunization - hepatitis B (first trimester)	√							
<b>First Visit With Provider [10-12 Weeks]</b>									
I-18	Assessing weight gain (inappropriate)		√	√	√	√	√	√	√
I-19	Auscultation fetal heart tones		√	√	√	√	√	√	√
I-20	Screening fundal height		√	√	√	√	√	√	√
I-21	Screening for gonorrhea		√						
I-22	Screening for chlamydia		√						
I-23	Screening for cervical cancer		√						
I-24	Counseling for cystic fibrosis screening		√						
<b>Weeks: 16-27</b>									
I-25	Maternal serum analyte screening			√					
I-26	Routine ultrasound			√					
I-27	Counseling for family planning			√					
I-28	Educate regarding preterm labor			√	√				
<b>Weeks: 28-37</b>									
I-29	Assess for preterm labor					√	√	√	
I-30	Daily fetal movement counts					√	√	√	√
I-31	Screening for gestation diabetes					√			
I-32	Iron supplementation					√			
I-33	Anti-D prophylaxis for Rh-negative women					√			
I-34	Screening for Group B Streptococcus (GBS)							√	
I-35	Assessment of fetal presentation							√	√
<b>Weeks: 38-41</b>									
I-36	Weekly cervical check (stripping/sweeping)								√
I-37	Post-dates antenatal fetal testing								√

## INTERVENTIONS AT ALL VISITS

### I-1 Screening for Hypertensive Disorders of Pregnancy

Hypertension in pregnancy can be defined as either a diastolic pressure  $\geq 90$  mmHg or systolic pressure  $\geq 140$  mmHg recorded on two separate occasions more than six hours apart, at any time during the gestation. Hypertension detected at a gestational age of  $< 20$  weeks in the absence of gestational trophoblastic disease or high-order multiple gestation is generally considered indicative of chronic hypertension. Gestational hypertension is defined as isolated hypertension in the absence of proteinuria occurring after 20 weeks' gestation. Hypertension occurring in conjunction with proteinuria  $\geq 20$  weeks' gestation is classified as preeclampsia. Proteinuria is defined as  $\geq 300$  mg in a 24-hour urine collection in the absence of evidence of a urinary tract infection. Regardless of the etiology or specific diagnosis, all hypertensive disorders of pregnancy are associated with an increased risk for adverse perinatal outcome and require monitoring and care outside of the scope of this guideline.

*The Working Group's Recommendations For Women In Low Risk Pregnancy:*

1. Recommend measuring blood pressure of all pregnant women at each prenatal visit, following the guidelines of the National High Blood Pressure Education Program and the VA/DoD Clinical Practice Guidelines for Hypertension.
2. Women diagnosed with hypertension during pregnancy should exit the Uncomplicated Pregnancy Guideline.
3. Korotkoff 5 sound (disappearance of sound) will be used to determine the diastolic pressure.

### I-2 Breastfeeding Education

Breastfeeding is the most nutritious form of feeding for the human infant, offering such immunologic benefits as lowering the incidence of otitis media (Duncan et al., 1993) and gastrointestinal tract disease (Howie et al., 1990). Breastfeeding mothers also benefit, with less postpartum blood loss, faster return to prepartum weight (Dewey et al., 1993) and decrease in incidence of both ovarian (Gwinn et al., 1990) and breast cancers (Layde

et al., 1989). Between 50 and 90 percent of expectant mothers decide how they will feed their children either before conceiving or very early in pregnancy (Bailey & Sheriff, 1992; Dix, 1991). Prenatal breastfeeding education is a key opportunity to educate expectant mothers on the benefits and methods associated with successful breastfeeding during the time they are making their decision on choice of infant feeding method.

*The Working Group's Recommendations For Women In Low Risk Pregnancy:*

1. Recommend offering breastfeeding education to all pregnant women at 10 to 12 weeks or the first visit with the provider.
2. Recommend asking pregnant women, "What do you know about breastfeeding?" rather than, "Do you plan on breast or bottle feeding?" to provide an open opportunity for education.
3. Recommend continuing education throughout pregnancy for those pregnant women who express a desire to breastfeed or for those who are still undecided on feeding method.
4. Recommend including family/significant others in breastfeeding education.

### I-3 Exercise During Pregnancy

Attitudes toward exercise during pregnancy have changed markedly in recent decades. The underlying concern has revolved around fears that the exercise-induced increases in maternal body temperature, circulating stress hormones, and biomechanical stress coupled with the decreased visceral blood flow, could have adverse effects on multiple aspects of the course and outcome of pregnancy. Only recently has a substantial amount of research been completed to support the idea that it is both safe and beneficial to exercise during pregnancy. Currently, there is no evidence to suggest that regular maternal exercise is associated with fetal compromise or unexplained fetal death. Furthermore, regular exercise improves maternal fitness, reduces the usual musculoskeletal complaints associated with pregnancy, enhances feelings of well being, improves body image, and decreases maternal weight gain and fat deposition in late pregnancy (Clapp et al., 2000).

*The Working Group's Recommendations For Women In Low Risk Pregnancy:*

1. Strongly recommend all healthy, pregnant women perform regular mild to moderate exercise sessions, three or more times per week.
2. Recommend individualized exercise programs for all pregnant women, based on their pre-pregnancy activity level.
3. Recommend against high-altitude (>10,000 feet) activities, scuba diving and contact sports during pregnancy.

#### **I-4 Influenza Vaccine (Season-Related)**

Women who acquire influenza during pregnancy may experience an increase in morbidity and mortality during an epidemic, with a possible increased abortion rate. Immunization of pregnant women for influenza has been found to be safe for both the mother and the fetus.

*The Working Group's Recommendations For Women In Low Risk Pregnancy:*

1. Recommend immunizing for influenza all pregnant women who will be in the second or third trimester during the epidemic season

### **INTERVENTIONS AT FIRST VISIT WITH NURSE [6-8 WEEKS].**

#### **I-5 Screening for Tobacco Use-Offer Cessation (Weeks 6-8)**

Tobacco use in pregnancy is associated with decreased birth weight, as well as risk for spontaneous abortion and preterm labor. Newborns exposed to environmental tobacco smoke experience increased incidence of upper respiratory infections and deaths from Sudden Infant Death Syndrome (SIDS). Behavioral and pharmacologic methods for smoking cessation are both safe and effective in pregnancy.

*The Working Group's Recommendations For Women In Low Risk Pregnancy:*

1. Strongly recommend routine screening for tobacco use in pregnancy at the initial prenatal visit. For patients who smoke, recommend assessment of smoking status at each subsequent prenatal visit.
2. If the screening is positive, cessation should be strongly recommended.
3. There is insufficient data to recommend for or against pharmacologic therapy for tobacco cessation in pregnancy.

#### **I-6 Screening for Alcohol Use-Offer Cessation (Weeks 6-8)**

Alcohol is a known teratogen with adverse effects on fetal facial and central nervous system development. Maternal alcohol consumption is a leading preventable cause of birth defects and childhood disabilities in the United States (Centers for Disease Control [CDC], 1995). While there is a clear dose dependent effect, numerous observational studies have failed to delineate a threshold level for safe alcohol consumption during pregnancy.

*The Working Group's Recommendations For Women In Low Risk Pregnancy:*

1. Recommend routine screening for alcohol consumption using a standardized tool (refer to the VHA/DoD Clinical Practice Guideline for the Management of Substance Use Disorders – Appendix A-1 for screening tools).
2. If the screening is positive, cessation should be strongly recommended.
3. There is insufficient evidence regarding which cessation intervention tool is the most effective.
4. A positive screening does not exclude the pregnant women from the Uncomplicated Pregnancy Guideline.

#### **I-7 Screening for Drug Abuse-Offer Treatment (Weeks 6-8)**

As many as one in ten babies may be exposed to illegal drugs during pregnancy. Use of these drugs may be harmful to the health and growth of the fetus, particularly early in pregnancy. Drug use later in pregnancy increases the risk for preterm delivery and fetal growth restriction. Risks to the mother include HIV, hepatitis and addiction.

*The Working Group's Recommendations For Women In Low Risk Pregnancy:*

1. Recommend routine screening for illicit drug use using a self-report method.
2. Recommend pregnant women identified as abusing drugs be offered treatment, as per the VHA/DoD Clinical Practice Guideline for the Management of Substance Use Disorders.

3. Pregnant women identified as abusing drugs are excluded from the Uncomplicated Pregnancy Guideline.

### **I-8 Screening for Domestic Abuse (Weeks 8, 24, 32)**

Domestic violence is an epidemic problem that may be first identified during pregnancy. Unfortunately, high quality evidence-based documentation does not exist regarding the benefits of specific interventions to decrease domestic violence. However, there are several studies validating multiple screening tools for the occurrence of domestic violence (McFarlane et al., 1995; Norton et al., 1995). The recommendation for the utilization of three simple/direct questions is based on the only study that addressed domestic violence and the pregnant population (McFarlane et al., 1992). Healthcare providers need to be aware that a woman's decision to leave an abusive relationship may result in an escalation of violence.

#### *The Working Group's Recommendations For Women In Low Risk Pregnancy:*

1. Recommend routine screening for domestic abuse at weeks 8, 24 and 32, using the following three simple/direct questions:
  - Within the last year, have you been hit, slapped, kicked or otherwise physically hurt by someone?
  - Since you've been pregnant, have you been hit, slapped, kicked or otherwise physically hurt by someone?
  - Within the last year, has anyone forced you to have sexual activities?
2. There is insufficient evidence to recommend for or against specific interventions for identifying domestic abuse in pregnancy.
3. If the screening is positive, follow appropriate medical/legal mandates for reporting requirements for state/branch of service.

### **I-9 Screening for Rh Status (Weeks 6-8)**

Since the introduction of anti-D (Rhogam) immune globulin injections during and after pregnancy in women who are D antigen negative, the incidence of isoimmunization has fallen from 10 cases to 1.3 cases per 1,000 live births. Testing and identification of pregnant women with non-anti-D antibodies allows for early treatment of infants, which may improve fetal outcomes.

#### *The Working Group's Recommendations For Women In Low Risk Pregnancy:*

1. Recommend routine Rh status at the initial prenatal visit via indirect-antiglobulin (Coombs') testing.
2. Pregnant women with positive screens should be referred for consultation to assist with further management.
3. There is insufficient evidence to recommend for or against routine repeat testing at 28 weeks' gestation.

### **I-10 Screening for Rubella (Weeks 6-8)**

Congenital Rubella Syndrome (CRS) is a constellation of findings in newborns exposed to the rubella virus prior to sixteen weeks' gestation. The syndrome includes hearing loss, developmental delay, and ocular and cardiac defects. The incidence of CRS has declined dramatically since the advent of rubella vaccination in 1969. Identification of women lacking rubella immunity during the preconception period allows for immunization before pregnancy. Identification of non-immune women during pregnancy allows for risk counseling and immunization postpartum.

#### *The Working Group's Recommendations For Women In Low Risk Pregnancy:*

1. Recommend all pregnant women have a serum screen for rubella status at the initial prenatal visit.
2. Recommend seronegative pregnant women be counseled to avoid exposure.
3. Recommend seronegative pregnant women be vaccinated in the immediate postpartum period. Postpartum vaccination demonstrates >90 percent protection against clinical rubella infection and seropositivity is long lasting. Vaccinating healthy women of childbearing age provides protection for the women from adult onset rubella and for their future children from CRS.

### **I-11 Screening for Varicella (Weeks 6-8)**

Varicella infection during pregnancy may lead to poor outcomes for both mother and fetus. The incidence of varicella in pregnancy is less than 1 in 1,000. Most adults are immune to varicella due to previous exposure. In women who report no history of infection, 85 percent are found to have positive antibody titers. Identification of non-immune persons through screening with subsequent immunization may decrease the incidence of varicella.

*The Working Group's Recommendations For Women In Low Risk Pregnancy:*

1. Recommend routine screening for varicella through history.
2. If negative/unsure history, obtain a varicella titer.
3. Recommend offering vaccination postpartum, if varicella is non-immune.

**I-12 Screening for Hepatitis B (Weeks 6-8)**

Each year in the United States an estimated 22,000 infants are born to women with chronic hepatitis B virus. The incidence of acute hepatitis B in pregnancy is 1 to 2/1,000 and the prevalence of chronic hepatitis B is 5 to 15/1,000. Certain groups including Southeast Asians, Pacific Islanders, Alaskan Native Americans, drug addicts, transfusion recipients, women on dialysis and those with tattoos have an increased prevalence of infection (Duff, 1998). Perinatal transmission of hepatitis B virus occurs if the mother has an acute infection during late pregnancy or the early postpartum period or if the mother is a chronic hepatitis B antigen carrier.

*The Working Group's Recommendations For Women In Low Risk Pregnancy:*

1. Recommend routine screening for hepatitis B surface antigen at the initial prenatal visit.
2. Consider rescreening all pregnant women with hepatitis risk factors identified during the pregnancy (e.g., IV drug use, exposure to hepatitis, STDs, new tattoos, and blood transfusion).

**I-13 Screening for Syphilis Rapid Plasma Reagin (RPR) (Weeks 6-8)**

Syphilis is a sexually transmitted disease that can cause significant mortality and morbidity in both the mother and fetus. The disease is acquired through either sexual or congenital transmission and can be effectively treated using broad spectrum antibiotics. Congenital syphilis can be prevented by screening for maternal syphilis, treating and tracking all confirmed cases.

*The Working Group's Recommendations For Women In Low Risk Pregnancy:*

1. Recommend routine screening for syphilis using serologic testing (i.e., RPR or Venereal Disease Research Laboratory [VDRL]) at the initial prenatal visit.

2. Recommend confirmatory test using a more specific treponemal assay (FTA-ABS, MHA-TP, HATTS) for pregnant women who test positive.
3. Strongly recommend therapy with penicillin G antibiotic for pregnant women who have confirmed syphilis, as recommended by other STD guidelines.
4. Recommend appropriate medical/legal mandates follow-up and state/service branch reporting requirements for pregnant women screening positive.

**I-14 Screening for Asymptomatic Bacteriuria (ASB) (Weeks 6-8)**

Bacteriuria occurs in 2 to 7 percent of pregnant women. Asymptomatic bacteriuria (ASB) in pregnant women is an established risk factor for serious complications including pyelonephritis, preterm delivery and low birth weight.

*The Working Group's Recommendations For Women In Low Risk Pregnancy:*

1. Strongly recommend screening for ASB at initial obstetrical visit via urine culture and sensitivity.
2. There is insufficient evidence to recommend for or against repeat screening throughout the remainder of pregnancy.
3. Strongly recommend a three to seven day course of appropriate antibiotics based on positive culture and sensitivity, and woman's history of medication allergies.
4. There is insufficient evidence to recommend for or against a test of cure (TOC) after completion of antibiotic therapy, except in pregnant women with ASB-Group B Strep.

**I-15 Screening for HIV – Counsel (Weeks 6-8)**

During the past decade, HIV infection became a leading cause of morbidity and mortality among women. As the incidence of HIV infection has increased among women of childbearing age, increasing numbers of children have become infected through perinatal transmission.

*The Working Group's Recommendations For Women In Low Risk Pregnancy:*

1. Strongly recommend routine testing at the initial prenatal visit.
2. Pregnant women who test positive for HIV should be referred for treatment and counseling.

3. Recommend retesting all high risk pregnant women during the early third trimester and offer repeat testing for patients who refused the first test.
4. Pregnant women identified with HIV are excluded from the Uncomplicated Pregnancy Guideline.

### **I-16 Immunization - Td Booster (First Trimester) (Weeks 6-8)**

Tetanus and diphtheria were serious causes of infectious morbidity and mortality of people of all ages prior to the advent of widespread effective active immunization programs. The majority of cases of diphtheria and tetanus occur in adults who have not received adequate vaccination, and fatality rates for diphtheria are approximately 10 percent and 25 percent for tetanus. The tetanus-diphtheria vaccine is made up of bacterial toxins which cause the production of antibodies against the live bacterium when administered to an individual.

Unfortunately, the immune response is not lifelong, thus periodic revaccination is required to ensure immunity. Since the vaccine is made up of inactive bacterial particles and not live bacteria, pregnancy is not a contraindication to providing indicated preventive services such as tetanus booster vaccination.

#### *The Working Group's Recommendations For Women In Low Risk Pregnancy:*

1. Strongly recommend routine screening for Td booster status at the initial prenatal visit.
2. If there is no documentation of Td booster within the last ten years, Td booster should be provided.

There are no contraindications other than a previous severe reaction to Td vaccination, such as anaphylaxis, generalized urticaria or angioedema.

3. If the pregnant woman is an immigrant and it is unclear that she ever received the primary vaccination series, she should be given a primary series with an initial dose, a second dose a month later and a third dose 12 months later.

### **I-17 Immunization - Hepatitis B (First Trimester) (Weeks 6-8)**

Each year in the United States an estimated 22,000 infants are born to women with chronic hepatitis B virus. Infection with hepatitis B is associated with multiple sexual partners, presence of a sexually transmitted disease, personal or significant other's use of illicit drugs, household contact with hepatitis B, working in a health care field or public safety field, and working with patients who live in chronic residential facilities or who are on dialysis. Hepatitis B infection during pregnancy can lead to preterm labor and liver failure in the mother and perinatal transmission to the fetus. Pregnancy is not a contraindication to immunization with hepatitis B vaccine.

#### *The Working Group's Recommendations For Women In Low Risk Pregnancy:*

1. Recommend immunizing for hepatitis B all pregnant women with high-risk factors predicting positive hepatitis B during pregnancy.

## **INTERVENTIONS AT FIRST VISIT WITH PROVIDER [10-12 WEEKS]**

### **I-18 Assessing Weight Gain (Inappropriate) (Weeks All)**

Pregnant women who experience inappropriate weight gain may be at risk for a number of complications. Excessive weight gain may increase the risk for macrosomic infants, shoulder dystocia, operative delivery and postpartum obesity. Inadequate weight gain is associated with preterm delivery, intrauterine growth retardation, and low birth weight. Screening for inappropriate weight gain allows for early intervention to prevent these complications.

#### *The Working Group's Recommendations For Women In Low Risk Pregnancy:*

1. Recommend assessing and documenting body mass index (BMI) of all pregnant women at the initial visit.
2. Pregnant women found to have a BMI <20 should be referred for nutrition counseling and considered at increased risk for fetal growth restriction.
3. Recommend screening for inappropriate weight gain for all women at every visit during pregnancy.
4. Pregnant women with inadequate weight gain at 28 weeks who are unresponsive to nutritional treatment exit the Uncomplicated Pregnancy Guideline.

### **I-19 Auscultation Fetal Heart Tones (Weeks 10-12)**

No studies show improved perinatal outcome from identifying fetal heart tones, but expert opinion concurs that an occasional fetal demise may be found (with no other signs or symptoms) or an occasional cardiac anomaly might be detected. The primary indication for identifying fetal heart tones is the enormous psychological benefit to parents.

*The Working Group's Recommendations For Women In Low Risk Pregnancy:*

1. Recommend assessing fetal heart tones at each prenatal visit, starting at 10 to 12 weeks.

### **I-20 Screening Fundal Height (Weeks All)**

Fundal height is commonly used as an indicator of fetal growth. A discrepancy between fundal height and gestational age in weeks, particularly between weeks 20 and 36, may indicate abnormal growth and/or abnormalities in amniotic fluid volume. Timely detection and treatment of these abnormalities may improve fetal outcomes.

*The Working Group's Recommendations For Women In Low Risk Pregnancy:*

1. Recommend measuring fundal height in all pregnant women at each visit during the second and third trimesters.
2. There is insufficient evidence to recommend for or against measuring fundal height after 36 weeks' gestation.

### **I-21 Screening for Gonorrhea (Weeks 10-12)**

The CDC (1998) reports that there are approximately 1 million new cases of gonorrhea each year, and up to 80 percent of women infected with gonorrhea are asymptomatic. The reported prevalence among pregnant women varies from 0.4 to 7.5 percent. In pregnancy, infection with this organism can be asymptomatic or cause cervicitis, endometritis, or systemic illness. It has also been associated with septic abortion, neonatal ophthalmic infections, and abscesses of Bartholin's or Skene's glands. Maternal infection with gonorrhea has been associated with adverse pregnancy outcomes such as preterm labor, premature rupture of membranes (PROM), and preterm delivery (McGregor et al, 1990).

*The Working Group's Recommendations For Women In Low Risk Pregnancy:*

1. Recommend screening for gonorrhea in all pregnant women.
2. Pregnant women with positive cultures should be treated with ceftriaxone, per CDC guidelines.
3. Pregnant women with positive screens for gonorrhea should be screened for other STDs.
4. Recommend performing a TOC during pregnancy after completing antibiotic therapy. TOC in pregnant women, unlike non-pregnant women, is recommended due to risk of complications resulting from persistent or recurrent infections.
5. Recommend counseling to decrease rate of reinfection.
6. Recommend referring partner for testing and treatment, as appropriate. Pregnant women must abstain from intercourse pending TOC.

### **I-22 Screening for Chlamydia (Weeks 10-12)**

Chlamydia trachomatis is one of the most common STDs in the United States. It is a leading cause of urethritis, cervicitis, PID, infertility, chronic pelvic pain, and ectopic pregnancy. In pregnancy, it can lead to preterm labor and delivery with resultant complications. Infection rates for neonatal conjunctivitis range between 15 and 25 percent and for neonatal pneumonitis between 5 and 15 percent. The morbidity and mortality rates for pregnant and nonpregnant women are equal.

*The Working Group's Recommendations For Women In Low Risk Pregnancy:*

1. Recommend screening all pregnant women for chlamydia trachomatis at the initial physical examination.
2. Pregnant women with positive cultures should be treated with azithromycin or erythromycin, per CDC guidelines.
3. Pregnant women with positive screens for chlamydia should be screened for other STDs.
4. Recommend performing a TOC during pregnancy after completing antibiotic therapy. TOC in pregnant women, unlike non-pregnant women, is recommended due to risk of complications resulting from persistent or recurrent infections.
5. Recommend counseling to decrease rate of reinfection.
6. Recommend referring partner for testing and treatment, as appropriate. Pregnant women must abstain from intercourse pending TOC.

### **I-23 Screening for Cervical Cancer (Weeks 10-12)**

Population-based studies have shown that early detection of cervical neoplasia through Pap (cervical) smear testing may provide an opportunity to prevent or delay progression to invasive cancer. In spite of this history of success, the incidence of invasive cervical cancer in Caucasian women under 35 is increasing, suggesting a need for continued vigilance. Prenatal visits during pregnancy provide an opportunity to test reproductive aged women who may have missed earlier opportunities for screening.

*The Working Group's Recommendations For Women In Low Risk Pregnancy:*

1. Recommend screening all pregnant women for cervical cancer at the first prenatal visit, or as early in pregnancy as possible.
2. Recommend performing cervical screening in pregnancy with a brush sampler and spatula.
3. Recommend women with abnormal cervical smears during pregnancy be managed based on local algorithms, which may include repeat testing, observation or colposcopy.

### **I-24 Counseling For Cystic Fibrosis Screening (Weeks 10-12)**

Cystic fibrosis (CF) is the most common autosomal recessive genetic disease among Caucasians, with a

frequency of 1/3,300 (ACOG, 2001). It also affects other races, though at significantly lower rates. Affected individuals experience substantial morbidity and early death, and require lifelong medical care as a result of their disease. Although there is currently no gene therapy available to treat CF, some couples wish to know if their child will be affected, and subsequently choose to terminate the pregnancy.

*The Working Group's Recommendations For Women In Low Risk Pregnancy:*

1. Recommend educating all pregnant women using a CF carrier-screening brochure about possible risk of CF.
2. Recommend offering CF screening to all pregnant women who desire it.
3. Recommend referring all pregnant women with a family history of CF for genetic counseling.
4. For couples who desire screening at <18 weeks' gestation, only one partner should be initially screened; if the screening is positive then the other partner should be screened.
5. For couples who desire screening at >18 weeks' gestation, both partners should be screened simultaneously. This reduces the increased time frame of sequential screenings and provides couples wishing to terminate the pregnancy faster access to the screening results.

## **INTERVENTIONS - WEEKS: 16-27**

### **I-25 Maternal Serum Analyte Screening (Weeks 15-20)**

Maternal serum analyte screening with multiple serum markers (e.g., alphafetoprotein, human chorionic gonadotropin [HCG], and unconjugated estriol) has been demonstrated to be a cost-effective means of antenatal screening for several categories of serious fetal structural abnormalities, fetal aneuploidy, and placental abnormalities. Specific structural fetal abnormalities include open neural tube defects (ONTD) (e.g., anencephaly and open spinal defects), ventral wall defects (e.g., omphalocele and gastroschisis), as well as other rare conditions (e.g., skin disorders and congenital nephrosis).

ONTDs occur in 1 to 2/1,000 live births; 90 to 95 percent of ONTD cases occur in mothers without risk factors such as a positive family history, medical therapy for maternal seizure disorder, or pregestational diabetes mellitus. ONTDs are associated with high rates of perinatal mortality, morbidity, and long term developmental disability.

Ventral wall defects occur in 0.5 to 1 infants/1,000 live births and are associated with an increased incidence of associated serious fetal anomalies and aneuploidy, omphalocele, or fetal growth restriction. Both require immediate postnatal surgical treatment for optimal outcome.

The specific fetal aneuploid conditions commonly detected through maternal serum analyte screening include Down Syndrome (trisomy 21) or Edward's Syndrome (trisomy 18). Sex chromosome abnormalities or other aneuploid conditions are less reliably detected.

*The Working Group's Recommendations For Women In Low Risk Pregnancy:*

1. Recommend offering multiple marker maternal serum analyte screening to all pregnant women at gestational ages between 15 and 20 weeks. The ideal screening period is 15 to 18 weeks in order to maximize test accuracy and allow time for adequate follow-up counseling and testing.
2. Recommend providing pre-test patient education and counseling to ensure that women understand screening test limitations and false-positive rates, as well as the need for subsequent diagnostic tests for screen-positive women.
3. If the screening is positive, targeted ultrasound examinations can be used for risk modification and counseling prior to making the decision for invasive testing.
4. Pregnant women with persistent unexplained elevations of maternal serum alpha-fetoprotein (MSAFP) are at increased risk for adverse perinatal outcome and should exit the Uncomplicated Pregnancy Guideline.

### **I-26 Routine Ultrasound (Weeks 16-20)**

Fetal assessment by a comprehensive sonographic survey has been proven to be a useful means of ascertaining fetal health and establishing an accurate gestational age in women with complicated pregnancies. However, the routine use of this technology in uncomplicated pregnancies remains controversial.

*The Working Group's Recommendations For Women In Low Risk Pregnancy:*

1. Recommend counseling and educating all pregnant women prior to scheduling sonographic study. Education will include information on potential benefits, limitations, and safety of prenatal ultrasound. Documentation of education and counseling is recommended; however, written informed consent is not deemed necessary.
2. Recommend offering a complete obstetric sonographic examination between 16 and 20 weeks' gestation to all low-risk consenting pregnant women (see Appendix A-2: Standard for Performance of

Antepartum Obstetrical Ultrasound Examination).

3. Strongly recommend all complete obstetric sonographic studies be performed and interpreted by qualified healthcare providers (see Appendix A-2: Standard for Performance of Antepartum Obstetrical Ultrasound Examination).

### **I-27 Counseling for Family Planning (Start at Week 20)**

Antepartum counseling for family planning allows the pregnant woman and provider ample time for discussion and informed decision making. The different options for birth control discussed during pregnancy, including permanent sterilization, may enable the woman to consider the pros and cons of each method and choose the one that best fits her lifestyle.

*The Working Group's Recommendations For Women In Low Risk Pregnancy:*

1. Recommend antepartum counseling and educating all pregnant women regarding family planning, to include various temporary contraceptive means and/or permanent sterilization.

### **I-28 Educate Regarding Preterm Labor (Week 20)**

Preterm delivery, defined as delivery prior to 37 weeks' gestation occurs in approximately 11 percent of all pregnancies in the United States (Berkowitz & Papiernik, 1993) and the rate of preterm delivery has not declined appreciably over the last several decades, in spite of extensive and costly research initiatives. Preterm delivery is the primary cause of adverse perinatal outcomes, accounting for approximately 75 percent of perinatal deaths in the U.S. While it is apparent that there are multiple pathways to delivery of a preterm infant, the primary cascade of events leading to the majority of preterm deliveries remains somewhat enigmatic and is referred to as idiopathic preterm labor and delivery. The likelihood that a specific patient will develop preterm labor has been subjected to risk assessment and profiling, so that preventive or early treatment efforts may be explored. Accordingly, early efforts at lowering the preterm delivery rate focused primarily on the use of risk factor profiling. Unfortunately, subsequent analysis of such risk profiles demonstrated that only approximately 50 percent of women who deliver prematurely have an identified risk factor. Furthermore, the majority of women with at least one risk factor deliver at term. Consequently, all

pregnant women must be considered at risk for preterm labor until they reach term. A maximum reduction in preterm deliveries requires a high state of vigilance by both patients and care providers.

An individual pregnant woman's risk for preterm labor and delivery can potentially span a wide spectrum and depends on a multitude of factors. Some of these factors are addressed in other portions of the Clinical Practice Guideline for the Management of Uncomplicated Pregnancy, such as domestic violence, smoking, bacterial vaginosis, malnutrition, and will not be expanded further in this section. However, even in the absence of such factors, all pregnant women remain at risk for preterm labor and delivery; thus, interventions directed at reducing preterm labor and delivery employed in the guideline will be as follows:

- Screen every pregnant woman for clinically substantive risk factors that are anticipated to result in a sufficiently high enough risk for preterm delivery to warrant care outside of the scope of the guideline (see Table 2). Essentially, pregnant women with any condition or risk factor that results in having at least a 10 percent or greater risk for preterm delivery will exit the Uncomplicated Pregnancy Guideline.
- Educate each patient in the mid portion of the second trimester about early symptoms of preterm labor and appropriate responses if she experiences any of these symptoms.
- Inquire about the presence of clinical signs or symptoms of preterm labor at each visit between 20 and 36 weeks' gestation. Initiate appropriate evaluation and intervention for any positive responses.

*This specific intervention will focus on screening patients for clinically significant risk factors for preterm labor, providing the initial patient education of early symptoms of preterm labor, and instructing the pregnant woman in the appropriate response if she experiences any of symptoms suggestive of preterm labor.*

*The Working Group's Recommendations For Women In Low Risk Pregnancy:*

1. Pregnant women will be screened for factors that would result in a 10 percent or greater risk of preterm delivery and, if present, will be excluded from further care in the Uncomplicated Pregnancy Guideline. Risk factors that would place a patient at a > 10 percent risk of preterm delivery include the following:

- Prior spontaneous preterm delivery (following preterm labor or preterm premature rupture of membranes)
  - History of cervical incompetence
  - Tobacco abuse and poor nutrition (i.e., BMI <18)
2. Pregnant women will be educated about the most common symptoms of preterm labor:
    - Low, dull backache
    - Four or more uterine contractions per hour. Uterine contractions may be perceived by the patient as:
      - Menstrual-like cramps
      - Sensation of the "baby rolling up in a ball"
      - Abdominal cramping (may be associated with diarrhea)
      - Increased uterine activity compared to previous patterns.
    - Increased pelvic pressure (may be associated with thigh cramps)
    - Change in vaginal discharge such as change in color of mucus, leaking of clear fluid, spotting or bleeding
    - Vaginal discharge associated with itching or fish-like odor immediately after intercourse
    - General sensation that "something feels different" (e.g., agitation, flu-like syndrome, and sensation that baby has "dropped")
  3. If the pregnant woman experiences any of the above symptoms or is unsure about the presence of any of the above, she should lie down on her side with one of her hands on her lower abdomen to palpate for uterine contractions an additional hour, if symptoms persist and/or she palpates four or more uterine contractions in the hour, she should seek immediate medical care. The exception to this is the pregnant woman who notes the presence of vaginal bleeding, leaking of clear fluid from the vagina or a vaginal discharge with a fish-like odor immediately after intercourse, all of which should prompt immediate medical attention.
  4. Educate the pregnant woman that she is the most important link in the early diagnosis of preterm labor, and that early diagnosis and treatment of preterm labor increases the chances for successful prolongation of the pregnancy and the probability of a healthy infant

**TABLE 2: RISK FACTORS FOR PRETERM DELIVERY**

RISK FACTOR	RELATIVE INCREASE IN RISK FOR PTD <sup>1</sup>	REFERENCE	EXCLUDE GUIDELINE
Age <17 or >35	Low	Wen et al., 1990	No
African American race	High	Wen et al., 1990	No
Prior spontaneous preterm delivery	High	Iams et al., 1998	Yes
Vaginal bleeding in more than one trimester	Moderate	Strobino & Pantel-Silverman, 1989	Yes <sup>3</sup>
Stressful job or more than 3 hours working on feet per 8-hour work day	Low	Mourkewich et al., 2000 Luke et al., 1995 Teitelman et al., 1990	No (attempt to modify work environment/demands)
Smoking	Moderate	Kramer, 1987 Cnattingius et al., 1999	No (see Smoking Intervention)
Cervical surgery (Cone, Loop Electrosurgical Excisional Procedure [LEEP])	Low	Kramer, 1987	No
Poor nutrition or low pre-pregnancy weight (BMI <18)	Moderate	Buescher et al, 1993 Kramer, 1993 Higgins et al, 1989	No
Multiple first trimester abortions	Low	Lettieri et al., 1993	No
Mullerian Anomaly	High	Lettieri et al., 1993	Yes
Abdominal surgery between 20 and 36 weeks' gestation	High	Dudley & Cruikshank, 1990 Coleman et al., 1997	Yes
Cocaine or methamphetamine use	High	St. Pierre et al., 1996	Yes
Single parent	Low	Lettieri et al., 1993	No
Placenta previa persisting after 24 weeks	High	Lettieri et al., 1993	Yes
Lower genital tract infection at 24 weeks' gestation (Gonococcus, chlamydia, Bacterial Vaginosis) <sup>2</sup>	Low (if treated appropriately)	Andrews et al., 2000 Goldenberg et al., 2000 Hauth et al., 1995	No
Cervical dilation ≥2cm at 24 - 28 weeks' gestation <sup>2</sup>	High	Papernik et al., 1986 Stubbs et al., 1986 Copper et al., 1995	Yes (symptomatic patient)
Soft consistency of the cervix and nulliparous woman at 24 - 28 weeks <sup>2</sup>	High	Copper et al., 1995	Yes
Signs/symptoms as listed in Recommendation #2	Moderate	Iams et al., 1990 Kragt, 1990 Kramer, 1987	No

<sup>1</sup> Increase in Relative Risks (RR): Low = 1.0 – 1.99; Moderate = 2.0 – 2.99; and High = ≥3.0

<sup>2</sup> Cervical examination (digital or sonographic) and testing for gonorrhea, chlamydia or bacterial vaginosis in the midtrimester are not recommended as routine interventions in the antenatal care of a woman with an uncomplicated pregnancy; however, a digital or sonographic cervical examination and evaluation for lower genital tract infection may be performed during the evaluation of a woman presenting with signs or symptoms of preterm labor as listed in Recommendation #2.

<sup>3</sup> While vaginal bleeding in more than one trimester increases the risk for preterm delivery by a RR of approximately 2.5, removal of the pregnant woman from the Uncomplicated Pregnancy Guideline is recommended based on additive risks for fetal growth restriction, fetal demise, nonreassuring fetal testing and intrapartum/postpartum problems.

## Reinforce Education of Patient About Preterm Labor Risk

The majority of women who are admitted for the treatment of preterm labor, often in the advanced stages of labor and delivering within 12 hours of admission, recognized that there was something “different” about their pregnancy for hours or even days prior to seeking medical attention. Potential etiologies for these delays include denial, naïveté, receiving misinformation from others, or ignorance.

True preterm labor is defined as progressive cervical effacement and dilation in the presence of regular uterine contractions at a gestational age of at least 20 weeks, but no more than 37 weeks. There is no solid medical evidence base suggesting that there is an effective medical intervention that “cures” preterm labor; however, there is an evidence base for the ability to delay preterm delivery for several days in women destined to deliver prematurely. While in itself, a few extra days in-utero has no clinically significant positive impact on perinatal outcome, when those few extra days are used to administer parenteral corticosteroids to the fetus (via the mother) in appropriate clinical situations, dramatic improvements in the perinatal outcome are realized. Therefore, a critical component of optimizing perinatal outcomes in preterm infants is early recognition and intervention of women with preterm labor. Towards this end, comprehensive patient education is the key element in maintaining the balance between vigilant surveillance and timely reporting of potential early symptoms of preterm labor and the maintenance of a normal lifestyle.

*This specific intervention will focus on enhancing the pregnant woman’s awareness of early symptoms of preterm labor and her appropriate response if she experiences such symptoms, as well as reinforcing the elements of her normal lifestyle that she can continue to enjoy and experience as long as her pregnancy remains uncomplicated.*

*The Working Group’s Recommendations For Women In Low Risk Pregnancy:*

1. Pregnant women will be educated about the most common symptoms of preterm labor:
  - Low, dull backache
  - Four or more uterine contractions per hour. Uterine contractions may be perceived by the patient as:

- Menstrual-like cramps
  - Sensation of the “baby rolling up in a ball”
  - Abdominal cramping (may be associated with diarrhea)
  - Increased uterine activity compared to previous patterns
  - Increased pelvic pressure (may be associated with thigh cramps)
  - Change in vaginal discharge, such as change in color of mucus, leaking of clear fluid, spotting or bleeding
  - Vaginal discharge associated with itching or fish-like odor immediately after intercourse
  - General sensation that “something feels different” (e.g., agitation, flu-like syndrome, and sensation that baby has “dropped”)
2. If the pregnant woman experiences any of the above symptoms or is unsure about the presence of any of the above, she should lie down on her side with one of her hands on her lower abdomen to palpate for uterine contractions for an additional hour. If symptoms persist and/or she palpates 4 or more uterine contractions in the hour, she should seek immediate medical care. The exception to this is the pregnant woman who notes the presence of vaginal bleeding, leaking of clear fluid from the vagina or a vaginal discharge with a fish-like odor immediately after intercourse, all of which should prompt immediate medical attention.
  3. Re-emphasize to the pregnant woman that she is the most important link in the early diagnosis of preterm labor, and that early diagnosis and treatment of preterm labor increases the chances for a healthy infant.
  4. Educate the pregnant woman that she can safely continue moderate exercise and activity during her pregnancy as long as she does not notice any of the symptoms of preterm labor. The exception to this is that she may notice some increase in uterine cramping with moderate exercise or activity. This is of no consequence so long as the cramping ceases when she stops her activity. She should be told to limit her activity to no more than two hours per session.
  5. Women with uncomplicated pregnancies may continue a standard work schedule throughout their pregnancy. If their work is strenuous or they spend long periods of time on their feet, such as a nurse, they should limit their work week to 40 hours and

workday to 8 hours during the last trimester (beginning at 28 weeks) or sooner if they frequently experience symptoms of preterm labor while at work. Pregnant women should attempt to limit periods of time on her feet to 3 hours.

6. There is no evidence that sexual intercourse increases the probability of preterm labor in women

with uncomplicated pregnancy. They may experience some uterine contractions following orgasm; however, this is a normal response and she only needs to seek medical attention if they persist at four or more per hour for at least three hours, or if vaginal bleeding or spotting is noted.

## INTERVENTIONS – WEEKS: 28-37

### I-29 Assess for Preterm Labor (Weeks 28-34)

The assessment of risk for various adverse perinatal outcomes has become a routine component of prenatal care. One of the principal adverse outcomes that has been subjected to such risk assessment and profiling is preterm labor and subsequent preterm delivery. Preterm delivery, defined as delivery prior to 37 weeks' gestation, occurs in approximately 11 percent of all pregnancies in the United States. Efforts to identify and prevent preterm delivery have been hampered by the lack of an effective preventive method and treatment modalities that are only effective in delaying preterm births for a few days. Early efforts at lowering the preterm delivery rate focused on the use of risk factor profiling. Unfortunately, subsequent analysis of such risk profiles demonstrated that only approximately 50 percent of women who delivered prematurely were identified by the risk profile system. Thus, all pregnant women must be considered at risk for preterm labor until they reach 37 weeks' gestations. This risk spans a wide spectrum and the approach of the practice guideline will be as follows:

- Screen each pregnant woman for clinically substantive risk factors that will remove the patient from care within the Uncomplicated Pregnancy Guideline.
- Provide patient education regarding early clinical signs and symptoms of preterm labor and appropriate responses.
- Inquire about the presence of clinical signs or symptoms of preterm labor at each visit between 24 and 36 weeks' gestation.

*This specific intervention will focus on patient education of early symptoms of preterm labor and her appropriate*

*response.*

*The Working Group's Recommendations For Women In Low Risk Pregnancy:*

1. All pregnant women at risk for preterm labor at week 28 will be asked if they have experienced any of the following symptoms since the previous visit:
  - Low, dull backache
  - Menstrual-like cramps or sensation the “baby is rolling up in a ball”
  - Increased pelvic pressure (may be with thigh cramps)
  - Abdominal cramping (may be associated with diarrhea)
  - Increased uterine activity compared to previous patterns (more than 4 contractions per hour)
  - Change in vaginal discharge such as change in color of mucus, leaking of clear fluid, spotting or bleeding
  - Sensation that “something feels different” (e.g., agitation, flu-like syndrome, and sensation that baby has “dropped”)
2. If the pregnant woman experiences any of the above symptoms or is unsure about the presence of any of the above, she should lie down on her side with one of her hands on her lower abdomen to palpate for uterine contractions for an additional hour. If symptoms persist and/or she palpates 4 or more uterine contractions in the hour, she should seek immediate medical care. The exception to this is the pregnant woman who notes the presence of vaginal bleeding, leaking of clear fluid from the vagina or a vaginal discharge with a fish-like odor immediately after intercourse, all of which should prompt immediate medical attention.
3. If no diagnosis of preterm labor is established, continuation in the guideline is appropriate.

### **I-30 Daily Fetal Movement Counts (Weeks 28-37)**

Nearly one-half of all fetal deaths occur in pregnancies of low risk women. Since fetal movement is a sign of fetal well being, it may be beneficial for all women to learn to assess fetal movement during the third trimester. One hundred percent of fetuses between 30 to 39 weeks' gestation and 98 percent of fetuses 24 to 27 weeks' gestation, move by the 75th minute of observation, so maternal perception of movement should occur within 1½ hours (Patrick et al., 1982). A decrease in fetal movement may indicate fetal jeopardy and should immediately prompt the pregnant woman to seek further evaluation of fetal well being.

*The Working Group's Recommendations For Women In Low Risk Pregnancy:*

1. Recommend instructing all pregnant women about the importance of assessing fetal movement on a daily basis beginning in the third trimester.
2. Recommend instructing all pregnant women as to the course of action they should take if they do not perceive the minimum fetal movement counts within the time frame specific to their health care facility.

### **I-31 Screening for Gestational Diabetes (Week 28)**

Routine screening of all pregnant women for GDM should be performed at 24 to 28 weeks' gestation. GDM is defined as marked impairment of glucose metabolism initially identified during pregnancy, and has also been associated with childhood obesity. Pregnant women with GDM are at increased risk for developing fetal macrosomia and requiring operative delivery. Uncontrolled or poorly controlled gestational diabetes may also lead to neonatal morbidity, such as hypoglycemia, polycythemia, and hyperbilirubinemia. Treatment aimed at normalizing glucose metabolism has been shown to reduce these risks. Therefore, any pregnant woman with GDM should receive specialized prenatal care, which falls outside the scope of the Uncomplicated Pregnancy Guideline.

*The Working Group's Recommendations For Women In Low Risk Pregnancy:*

1. Recommend screening all pregnant women for GDM at 24 to 28 weeks' gestation.
2. Screening for GDM should be performed by randomly administering a 50 gram oral glucose tolerance test (GTT) followed by a blood draw one

hour later. Generally accepted threshold values of the 1-hour screen are between 130 mg/dL and 140 mg/dL. Pregnant women who are positive require the diagnostic 3-hour GTT.

3. In the 3-hour GTT a 100 gram-glucose load is administered to a woman who has fasted overnight (minimum 8 hours). Blood draws are performed fasting and at 1, 2 and 3 hours after the oral glucose load.
4. Two acceptable sets of threshold values for the 3-hour 100 gram GTT that can be used to diagnose gestational diabetes - the National Diabetes Data Group (NDDG) criteria and the Carpenter/Coustan conversion criteria. Institutions should adopt one of these two criteria sets based upon their population demographics. Pregnant women diagnosed with gestational diabetes using these criteria will exit the Uncomplicated Pregnancy Guideline.
5. As impairment of glucose metabolism is a spectrum, pregnant women with just one abnormal value on the 3-hour GTT should exit the Uncomplicated Pregnancy Guideline and be managed using one of the following methods:
  - Undergo a repeat 3-hour 100 gram glucose challenge test approximately one month following the initial test.
  - Have dietary management and intermittent postprandial glucose testing performed in a manner similar to women with gestational diabetes.
  - Pregnant women with a repeat GTT test that shows normal value may reenter the Uncomplicated Pregnancy Guideline.

### **I-32 Iron Supplementation (Week 28)**

Iron supplementation in pregnancy is commonly practiced and generally expected by women in the United States. This tradition is based on the assumption that women have increased nutritional requirements during pregnancy that can not be met by diet alone. Maternal anemia may affect oxygen delivery to the fetus resulting in abnormal growth and development. Anemia may also increase symptoms of fatigue in the mother.

*The Working Group's Recommendations For Women In Low Risk Pregnancy:*

1. There is insufficient evidence to recommend for or against routinely supplementing iron for all pregnant women who are not anemic. Women exhibiting signs or symptoms of anemia at any time during their pregnancy should be evaluated upon presentation.

2. Recommend supplementing with at least 50 mg elemental iron (325 mg ferrous sulfate) twice-a-day (bid) in all pregnant women diagnosed with anemia (hematocrit <30). Diagnosis of anemia may vary with smoking status and altitude. Clinical correlation with local laboratory is advised.

### **I-33 Anti-D Prophylaxis for Rh-Negative Pregnant Women (Week 28)**

Pregnant women who have had D antigen isoimmunization in a previous pregnancy have an increased risk for development of fetal anemia and hydrops in future pregnancies. Since the introduction of anti-D (Rhogam) immune globulin injections during and after pregnancy in women who are D antigen negative, the incidence of isoimmunization has fallen from 10 cases to 1.3 cases per 1,000 live births.

*The Working Group's Recommendations For Women In Low Risk Pregnancy:*

1. Recommend administering anti-D prophylaxis to all unsensitized D-negative pregnant women.
2. Recommend using either 300 mcg of anti-D immunoglobulin at 28 weeks or 100 mcg of anti-D-immunoglobulin at 28 and 34 weeks' gestation.

### **I-34 Screening for Group B Streptococcus (GBS) (Week 36)**

In the absence of a preventive strategy, group B streptococcal (GBS) infections are the leading cause of serious neonatal infections (i.e., sepsis, meningitis, and pneumonia) within the first seven days of life (early-onset infection). A preventive strategy using intrapartum antibiotics for prophylaxis (IAP) has been proven to decrease the incidence of early-onset GBS infections of the newborn.

*The Working Group's Recommendations For Women In Low Risk Pregnancy:*

1. Recommend screening all pregnant women for GBS at 35 to 37 weeks' gestation, using a rectovaginal culture and selective broth media to identify colonized women.
2. Pregnant women with positive rectovaginal cultures should be treated with intrapartum IV chemoprophylaxis with either Penicillin or Ampicillin (if no contraindications) <sup>(a)</sup>.

<sup>(a)</sup> *Management of the GBS-colonized parturient with a history of an allergic reaction to penicillin agents: Due to emerging resistance to previous second-line antimicrobial agents, clindamycin and erythromycin (10 to 15 percent resistant strains in most centers), alternative second-line agents for women with a history of allergic reactions to penicillin or ampicillin are listed below:*

- Administer vancomycin 2 gm IV load, followed by 1 gm IV every 12 hours, for immediate hypersensitivity reaction (anaphylaxis, dyspnea, rapid onset of urticarial rash).
- Administer cefazolin 2gm IV load, followed by 1 gm IV every 8 hours, for allergic reaction other than immediate hypersensitivity.

3. Pregnant women who have had a previous child with early-onset GBS infection or have GBS bacteruria in the current pregnancy should receive intrapartum antibiotics, without screening cultures.

### **I-35 Assessment of Fetal Presentation (Week 36)**

Fetal non-cephalic presentation at term can result in cesarean section delivery. Examination at 36 weeks can identify non-cephalic presentation. External version of the fetus to the vertex position can allow a trial of labor for vaginal delivery. Vaginal delivery is associated with less morbidity and mortality than cesarean section delivery.

*The Working Group's Recommendations For Women In Low Risk Pregnancy:*

1. Recommend screening for non-cephalic presentation for all patients at 36 weeks' gestation.
2. There is insufficient evidence to recommend for or against Leopolds versus cervical exam as the best screening method to determine fetal presentation.
3. Recommend ultrasound for confirmation, if non-cephalic presentation is suspected.
4. Recommend offering external cephalic version at 37 weeks or beyond, if non-cephalic presentation is confirmed and there are no contraindications. Exit the Uncomplicated Pregnancy Guideline.

## INTERVENTIONS – WEEKS: 38-41

### I-36 Weekly Cervical Check (Stripping) (Weeks 38-41)

Post-dates pregnancies (over 42 weeks) occur in 10 percent of uncomplicated pregnant women. Post-dates pregnancies have a higher incidence of induction of labor, operative delivery, post-partum hemorrhage and shoulder dystocia. Routine membrane stripping, in low-risk pregnant women with accurate dating criteria, has been proposed as a method of encouraging earlier delivery to prevent post-dates pregnancy.

*The Working Group's Recommendations For Women In Low Risk Pregnancy:*

1. Recommend offering routine membrane stripping to all pregnant women every visit beginning at 38 weeks.

### I-37 Post-Dates Antenatal Fetal Testing (Week 41)

Intrapartum fetal distress, meconium staining, postmaturity syndrome and primary cesarean section rates all increase after the 40th week of gestation (Devoe, 1983).

Pregnancies continuing past the 41st week carry additional risk of oligohydramnios, perinatal morbidity and mortality (Sims & Walther, 1989). The goal of antepartum fetal testing is to prevent adverse fetal and maternal outcomes, to include fetal death. The success of antenatal fetal testing at predicting these outcomes, as well as the appropriate time to initiate antenatal fetal testing both have been topics of debate in the medical community.

*The Working Group's recommendations for women in low risk pregnancy:*

1. Strongly recommend antepartum fetal testing beginning at 41 weeks.
2. Testing should consist of weekly AFI (amniotic fluid index) and twice weekly NST (non-stress testing).
3. An AFI of less than 5 or a non-reactive NST should prompt further evaluation to determine the need for delivery. These women should exit the Uncomplicated Pregnancy Guideline.

## INTERVENTIONS NOT RECOMMENDED IN PRENATAL CARE

### I-38 Screening with Fetal Fibronectin

Fetal fibronectin levels can identify pregnant women at risk for preterm delivery. Routine fetal fibronectin screening of cervical vaginal fluid has been suggested by some experts as a means of reducing preterm delivery among low risk/asymptomatic pregnancies. However, there is insufficient data to support routine fetal fibronectin screening in all pregnant women.

*The Working Group's Recommendations For Women In Low Risk Pregnancy:*

1. Recommend against routine screening for preterm birth with fetal fibronectin test.

### I-39 Cervical Examination

Digital cervical examination can identify pregnant women at risk for preterm delivery. Universal screening of cervical dilation and effacement has been suggested as a means of reducing preterm delivery among low

risk/asymptomatic pregnancies. However, there is insufficient data to support routine digital cervical examination for screening in all pregnant women.

*The Working Group's Recommendations For Women In Low Risk Pregnancy:*

1. Recommend against performing cervical examination to screen for preterm birth prevention in low risk asymptomatic pregnant women.

### I-40 Antenatal Pelvimetry

Traditionally all pregnant women underwent clinical pelvimetry during the course of their pregnancy to detect pelvic diameters that would preclude a trial of labor or place a woman at increased risk of dystocia.

*The Working Group's Recommendations For Women In Low Risk Pregnancy:*

1. Recommend against the use of antenatal pelvimetry (clinical or radiographic) in routine prenatal care.

2. There is fair evidence that clinical pelvimetry is not effective in predicting the actual occurrence of cephalopelvic disproportion (CPD), and its performance is associated with significant increase in cesarean section rates.

#### **I-41 Routine Urine Dipstick Test**

Random urine dipstick testing for protein and glucose has been traditionally done at each prenatal visit. Concerns have been raised about the efficacy of the urine dipstick in detecting protein elevation that may indicate preeclampsia.

*The Working Group's Recommendations For Women In Low Risk Pregnancy:*

1. Recommend against the use of urine dipstick testing for protein and glucose during prenatal visits (the appropriate screening test for gestational diabetes is the one-hour glucola).
2. Recommend the use of selective laboratory urinalysis for pregnant women with signs or symptoms of preeclampsia.

#### **I-42 Routine Edema Evaluation**

Routine clinical evaluation of edema has been performed to screen for preeclampsia. Dependent edema (DE) is a common occurrence in normal pregnancies, thus limiting its usefulness as a screening tool for preeclampsia. The NIH consensus recommended, "Edema occurs in too many normal pregnant women to be discriminant and has been abandoned as a marker in this and other classification schemes (for preeclampsia)" (NIH, 2000).

*The Working Group's Recommendations For Women In Low Risk Pregnancy:*

1. Recommend against routine evaluation for edema in pregnancy

#### **I-43 Screening for Cytomegalovirus (CMV)**

Cytomegalovirus (CMV) is the most common congenitally acquired infection (0.2 to 2 percent of all infants) and may result in significant poor perinatal outcome. Some have suggested routine screening for CMV antibody status to identify women at risk for primary CMV infection during pregnancy.

*The Working Group's Recommendations For Women In Low Risk Pregnancy:*

1. The evidence is insufficient to recommend for or against routine screening for CMV.
2. Recommend counseling pregnant women about methods to prevent acquisition of CMV during pregnancy.

#### **I-44 Screening for Parvovirus**

Acute parvovirus B19 infection in pregnancy has been rarely associated with the development of fetal anemia and hydrops. It has been suggested that early detection of this infection may improve fetal outcomes. There is no immunization or treatment for parvovirus B19.

*The Working Group's Recommendations For Women In Low Risk Pregnancy:*

1. Recommend against routine testing for parvovirus in pregnancy.

#### **I-45 Screening for Toxoplasmosis**

Toxoplasmosis infection has been rarely associated with fetal morbidity and mortality. Common sources for infection include the handling of contaminated meats and cat feces. It has been suggested that early detection and subsequent treatment of this infection may improve fetal outcomes.

*The Working Group's Recommendations For Women In Low Risk Pregnancy:*

1. Recommend against routine testing for toxoplasmosis in pregnancy.
2. Recommend counseling pregnant women about methods to prevent acquisition of toxoplasmosis during pregnancy.

#### **I-46 Screening for Bacterial Vaginosis**

Bacterial vaginosis is found in approximately 10 to 20 percent of normal pregnancies and is a common condition in pregnancy that has been associated with an increased risk for preterm delivery. It has been suggested that screening for bacterial vaginosis may improve fetal outcomes through reduction of preterm labor.

*The Working Group's Recommendations For Women In Low Risk Pregnancy:*

1. Recommend against routine screening for bacterial vaginosis in asymptomatic pregnant women.

### **I-47 Vitamin Supplementation**

Multivitamin supplementation throughout pregnancy is commonly practiced and expected by women in the United States. This tradition is based on the assumption that women have increased nutritional requirements during pregnancy that can not be met by diet alone.

*The Working Group's Recommendations For Women In Low Risk Pregnancy:*

1. Recommend that multivitamin supplements taken one month preconceptually should be continued through the first trimester.
2. Strongly recommend that folate supplement taken one month preconceptually should be continued through the first trimester.
3. The evidence is insufficient to recommend for or against routine multivitamin, pyridoxine and vitamin D supplementation beyond the first trimester.
4. Recommend that women who have delivered a child with an open neural tube defect (NTD) should supplement their diets with 4 mg folate for at least one month prior to conception and through the first trimester to reduce the risk of recurrence.
5. Recommend that pregnant women taking nutritional supplements for a medical condition should continue that supplementation throughout pregnancy (e.g., B-12 with pernicious anemia and folate with seizure disorders).
6. Recommend that pregnant women on restrictive diets should have nutrition consultation to customize vitamin supplementation regimen.

### **I-48 Immunization - MMR**

Rubella in the first 16 weeks of pregnancy causes miscarriage, abortion, stillbirth, and Congenital Rubella Syndrome (CRS). The most common manifestations of CRS are hearing loss, developmental delay, growth retardation, and cardiac and ocular defects. Since 1969, when the vaccine was made available in the United States and childhood immunization was initiated, no major periodic rubella epidemics have occurred.

*The Working Group's Recommendations For Women In Low Risk Pregnancy:*

1. Recommend against routine measles/mumps/rubella (MMR) immunization during pregnancy.

### **I-49 Immunization - Varicella**

The CDC recommends that all adults should be immunized for varicella, if seronegative. Immunization prevents over 90 percent of varicella infections. Congenital varicella syndrome, while rare, can cause significant neonatal morbidity and mortality. There are theoretical concerns regarding administration of an attenuated virus during pregnancy. These include potential alterations in fetal immunity and inducement of a congenital varicella-like syndrome in the fetus.

*The Working Group's Recommendations For Women In Low Risk Pregnancy:*

1. Recommend against routine varicella vaccination in pregnancy.
2. Recommend seriological testing early in pregnancy for all pregnant women with a negative or uncertain history.
3. Recommend offering vaccination postpartum for pregnant women who are non-immune.

### **I-50 Ultrasound (US) Evaluation of Cervical Length At Week 24**

Preterm delivery remains one of the principal causes of adverse perinatal outcomes. Multiple interventions to identify pregnant women at risk for preterm delivery have been studied in the recent past. It has been determined that cervical length, as measured by transvaginal sonography correlates with the incidence of preterm delivery. Observational studies have found a linear relationship between cervical length and the rate of preterm delivery as well as the gestational age of delivery. This finding has prompted questions regarding the usefulness of routine screening of cervical length in pregnant women.

*The Working Group's Recommendations For Women In Low Risk Pregnancy:*

1. Recommend against routine cervical length screening at 24 weeks' gestation.

### **I-51 Repeat Screening for Anemia, Syphilis, and Isoimmunization**

Traditional maternal care often requires repeat testing of all women for anemia, syphilis and anti-D and non-anti-D antigen antibody development in the mother at 24 to 28 weeks' gestation. This testing was done to identify correctable causes of potential morbidity and mortality in the mother and fetus. Pregnant women with anemia may respond to vitamin and iron supplementation and those with syphilis can be treated with antibiotics. The unborn fetus with D isoimmunization may be helped by in utero transfusion or early delivery.

*The Working Group's Recommendations For Women In Low Risk Pregnancy:*

1. Recommend against routine repeat screening for blood group antibodies.
2. Recommend against routine repeat screening for anemia and syphilis.
3. Recommend providers consider repeat testing for anemia or syphilis at 24 to 28 weeks for women who are at higher risk for these conditions.

### **I-52 Screening for Hypothyroidism**

Recent publications have drawn attention to the role of thyroid hormone status of the mother on the future neuropsychological development of the child. Screening all pregnant women for thyroid hormone status has been suggested. To date, however, there are no evidence based studies to provide meaningful and clinically relevant data to guide the practitioner.

*The Working Group's Recommendations For Women In Low Risk Pregnancy:*

1. Recommend against screening for thyroid hormone status of the mother.
2. Recommend ensuring adequate iodine intake during pregnancy for pregnant women in areas of the country with questionable levels of dietary iodine.

## APPENDIX A-1

### SCREENING ITEMS FOR SELF-ADMINISTERED QUESTIONNAIRE – FIRST VISIT

#### IMMEDIATE CONCERNS

1	Are you currently having any vaginal bleeding?
2	Are you currently experiencing any significant abdominal pain/cramping?
3	Do you have a history of ectopic pregnancy?
4	Do you have a history of any severe pelvic infections requiring hospitalization?
5	Do you have a history of pelvic surgery for either infertility or infection?
6	Do you have diabetes that requires medication?
7	Do you have any other chronic medical condition that requires medication?

#### INFECTIONS

8	Do you currently have, have you ever had or been exposed to tuberculosis, or have you lived with anyone who had tuberculosis?
9	Were you ever stationed overseas?
10	Were you born outside of the United States?
11	Do you currently have, have you ever had or been exposed to hepatitis?
12	Do you currently have, have you ever had or been exposed to any sexually transmitted diseases including chlamydia, herpes, gonorrhea, syphilis, venereal warts, HPV or HIV?
13	Have you had a rash or viral illness since your last menstrual period?
14	Do you live in a house with cats?

#### MEDICAL HISTORY

15	Do you currently have or have you ever had kidney or bladder problems, urine tract infection, or cystitis?
16	Do you currently have or have you ever had ulcers, stomach problems, or colitis?
17	Do you currently have or have you ever had an abnormal Pap smear or female or gynecological problems?
18	Have you ever had infertility problems?
19	Do you currently have or have you ever had heart disease?
20	Do you currently have or have you ever had rheumatic fever?
21	Do you currently have or have you ever had high blood pressure?
22	Do you currently have or have you ever had pneumonia or asthma?
23	Do you currently have or have you ever had epilepsy or seizures?
24	Do you currently have or have you ever had emotional problems?
25	Do you currently have or have you ever had thyroid problems?
26	Do you currently have or have you ever had diabetes?
27	Do you currently have or have you ever had varicose veins or blood clots in your legs?
28	Do you currently have or have you ever had bleeding tendencies?
29	Are you currently in need of or have you ever had an operation?
30	Do you currently have or have you ever had broken bones or concussions?
31	Are you currently having or have you ever had blood transfusions?
32	Do you currently have or have you ever had lupus or other autoimmune diseases?
33	Are you allergic to any medications?

## SCREENING ITEMS FOR SELF-ADMINISTERED QUESTIONNAIRE – FIRST VISIT (continued)

### GENETIC SCREENING

34	Will you be 35 years old or older when the baby is due?
35	Have you, the baby's father, or anyone in either of your families ever had Down's syndrome (mongolism)?
36	Have you, the baby's father, or anyone in either of your families ever had any other chromosomal abnormality?
37	Have you, the baby's father, or anyone in either of your families ever had neural tube defect (e.g., Spina Bifida or Meningomyelocele)
38	Has anyone in either of your families ever had anencephaly?
39	Have you, the baby's father, or anyone in either of your families ever had hemophilia or other bleeding disorders?
40	Have you, the baby's father, or anyone in either of your families ever had muscular dystrophy?
41	Is there a family history of multiple births?

### MISCELLANEOUS

42	Do you wear seat belts?
43	Do you live with anyone who hits you or hurts you in any way?
44	Have you, the baby's father, or anyone in either of your families ever had cystic fibrosis?
45	Have you, the baby's father, or anyone in either of your families ever had sickle cell disease?
46	Do you or the baby's father have a birth defect?
47	Have you or the baby's father have any close relatives with mental retardation?
48	Do you, the baby's father, or a close relative in either of your families have a birth defect, family disorder, or a chromosomal abnormality not listed above?

### SOCIAL & LIFESTYLE HISTORY

49	Do you smoke?
50	Do you use alcohol?
51	Have you used marijuana, LSD, speed, heroin, crystal, crack, or cocaine?
52	What medicines or recreational drugs have you taken since becoming pregnant (include all prescription and nonprescription drugs)?
53	What is your occupation?
54	Is this a planned pregnancy?
55	What is the highest level of education you have completed?
56	Are you a vegetarian?
57	Since becoming pregnant, have you been exposed to any x-rays or toxic chemicals?

### MENSTRUAL HISTORY

58	What was the first day of your last normal menstrual period?
59	Was your last menstrual period on time?
60	Have you taken birth control pills or Depo Provera in the last year?
61	How many days from the first day of your period to the first day of your next period?
62	How many days does your period last?

### PREGNANCY HISTORY

63	How many previous pregnancies did you have (include miscarriages and abortions)?
64	For each pregnancy what was the date, hospital, number of weeks pregnant, type of delivery (vaginal/c-section), birth weight, sex, and what were the complications (if any)?

## APPENDIX A-2

### **Standard for Performance of Antepartum Obstetrical Ultrasound Examination**

See: <http://www.aium.org/consumer/standards/obstetrical.pdf>