2019-2020 Preventive Care Guidelines

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Introduction

Blue Cross and Blue Shield of Illinois, Blue Cross and Blue Shield of Montana, Blue Cross and Blue Shield of New Mexico, Blue Cross and Blue Shield of Oklahoma, and Blue Cross and Blue Shield of Texas ("the Plans") publish and disseminate evidence-derived Preventive Care Guidelines ("Guidelines") based upon the recommendations of recognized sources such as professional medical associations, specialty societies, professional consensus panels, national task forces, and governmental entities. The Guidelines are designed to improve physician/practitioner awareness of (and compliance with) effective clinical preventive care, to improve patient education and to increase the percentage of members who receive recommended clinical preventive care services.

The Guidelines do not cover all possible circumstances, but should be considered a summary of basic preventive services for these populations:

1. Children from birth to 18 years
2. Adults 19 years and older
3. Adults 65 years and older
4. Women needing perinatal care

The Guidelines are focused upon primary prevention; that is, strategies that have been shown to reduce the likelihood of future adverse outcomes in individuals prior to the onset of symptomatic disease. Services such as immunizations, education and counseling, and screening tests are primary preventive services. The Guidelines apply to average risk, asymptomatic and otherwise healthy individuals. Preventive care interventions appropriate for those with other levels of risk (increased or decreased) will vary by individual circumstance, and physicians/practitioners are encouraged to tailor the approach to these patients as necessary. For certain increased risk groups, additional guidelines have been included to assist physicians/practitioners.

Expert groups may disagree on certain preventive interventions, and as a consequence, recommendations regarding preventive services are not always identical. Despite this disparity, there are numerous areas where consensus exists, allowing for the formulation of this set of guidelines. Whenever possible, the Guidelines follow the recommendations of the United States Preventive Services Task Force (USPSTF) that are considered "recommended" ("A" and "B" level recommendations). When USPSTF recommendations do not provide sufficient guidance, the Plans, with input from network providers, have adopted the recommendations of other professional organizations that evaluate the value of clinical preventive services.

The Guidelines represent a minimal set of recommended preventive health services. Additional interventions may be indicated, except where there is a specific recommendation against routine screening. Individual considerations for a given patient should dictate clinical decisions. In addition, physicians/practitioners are encouraged to review the USPSTF statements regarding services that are should not be routinely used (level "D"). These are available at: http://www.uspreventiveservicestaskforce.org/BrowseRec/Index.

The following points should be emphasized when using the guidelines:

- Unless specified, guidelines are meant to apply to average risk, asymptomatic and otherwise healthy individuals. Preventive care interventions appropriate for those with other levels of risk (increased or decreased) will vary by individual circumstance, and physicians are encouraged to tailor the approach to these patients as necessary.
- The interventions listed are minimal guidelines. Additional interventions may be useful.
- The Guidelines are designed to assist clinicians by providing a guide to clinical preventive care that is usually appropriate, and are not intended to replace a clinician’s judgment, establish a protocol for all patients, or define standards of practice. The final decision regarding medical treatment, including preventive care services, is made by the physician and the patient.
- The Guidelines document is not a statement of coverage. Coverage is based upon member eligibility, the member’s specific benefit plan design, and state or federal law. There is substantial variation in coverage between benefit programs, and inclusion of a service in the Guidelines does not imply that the service is necessarily a covered benefit and does not guarantee payment.
Because the Guidelines summarize a large amount of information, all details cannot be provided. The practitioner is, therefore, encouraged to review the original sources for more complete discussion of indications and contraindications for specified preventive care services, and to verify the accuracy of the summary.

Sources are cited for each guideline. Where possible, the exact recommendation of the source is used. In some cases, the recommendation, or its periodicity, has been modified to resolve conflicting recommendations by various sources, or to facilitate practical usage of the guideline in clinical practice settings.

This material is provided for informational purposes only and is not intended to be a substitute for the sound independent medical judgment of health care practitioners. Health care providers are instructed to exercise their independent medical judgment based on the patient’s individual medical circumstances including, but not limited to symptoms, history, family history and other factors. The final decision about whether a particular service or treatment should be rendered is between the health care provider and the member (patient). The fact that a particular medical service is listed in this document is not a guarantee that benefits are available for such service. The member is instructed to refer to their health benefits document or certificate of coverage to determine what benefits are available for the particular medical service.

**Preventive Health Guidelines for Children Age Birth To 18**

**Part I: Neonates (Birth to 1 Month)**

1. **History and Physical Examination** (Reference: 1-AAP)
   
   Perform newborn examination and at 3-5 days:
   
   a) History
   
   b) Physical exam
c) Length and weight, weight for length
d) Head circumference
e) Development surveillance

2. Screening Tests (References: 2, 3 – AAP; 4, 5, 6 – USPSTF; 7, 8, 9, 10, 11 – States of Illinois, Montana, New Mexico, Oklahoma and Texas)
   • Perform screening tests prior to discharge or transfer from the nursery, but no later than 7 days of age. The USPSTF is not updating the recommendation for screening for phenylketonuria, congenital hypothyroidism and sickle-cell disease and refers to the Health Resources & Service Administration (HRSA) and the Recommended Uniform Screening Panel(RUSP). However, state regulations define required screening. The state-specific lists of required newborn screening can be found at these sites:

   IL  http://dph.illinois.gov/topics-services/life-stages-populations/newborn-screening
   MT  http://dphhs.mt.gov/publichealth/cshs/NewbornScreeningPrograms.aspx
   NM  http://nmhealth.org/about/phd/fhb/cms/nbgs/
   OK  https://www.ok.gov/health/Family_Health/Screening_&_Special_Services/Newborn_Screening_Program/index.html
   TX  https://www.dshs.texas.gov/newborn/screened_disorders.shtm

3. Ocular Chemoprophylaxis (Reference: 12 – USPSTF)
   • Prophylactic ocular topical medication for all newborns to prevent gonococcal ophthalmia neonatorum

4. Immunizations (References: 13, 19 – CDC)
   • Administer immunizations in accordance with the ACIP Recommended Immunization Schedules for Persons Aged 0 through 18 Years. Copies of the Schedules are attached at the end of the document.

5. Counseling/Anticipatory Guidance (Reference: 1 – AAP)
   • Relevant topics include injury prevention, nutrition, and sleep positioning.

Part II: Children Age 1 month through 17 years – Average Risk Pediatric Population

1. General Recommendations – see table below. Provide preventive services for children in accordance with the recommendation summarized in the following table. (References: 1, - AAP; 14, 16, 17, 18, 21, 22, 56, 66 - USPSTF).
   • For Texas Medicaid, ages 0 to 21, please use the periodicity schedule at https://www.dshs.texas.gov/imunize/.
### Recommendations for Preventive Pediatric Health Care

**Bright Futures/American Academy of Pediatrics**

**Infections**

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**Developmental, Behavioral Health**

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**Diabetes**

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<tr>
<td>Development</td>
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**Notes**

1. If a child comes under the care of a family doctor, follow the schedule of care in the schedule attached to this document.
2. A regular visit to a health professional is recommended at regular intervals, and for use in any regular care regimen. Regular visits should be followed by an annual physical examination, and at least once every 2 years, a 3-year physical examination should be performed. Children should receive a complete physical examination at ages 6 and 12 years of age.
3. Growth charts should be used to monitor growth and development, and to assess the need for medical intervention. Growth charts should be followed by an annual physical examination, and at least once every 2 years, a 3-year physical examination should be performed. Children should receive a complete physical examination at ages 6 and 12 years of age.

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**References**


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**Contact Information**

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All rights reserved. No part of this publication may be reproduced, stored in a retrieval system, or transmitted in any form or by any means, electronic, mechanical, photocopying, recording, or otherwise, without prior written permission from the American Academy of Pediatrics.
2. **Immunizations** (References: 13 - CDC, 19 – ACIP)
   - Administer immunizations in accordance with ACIP Recommended Immunization Schedules for Persons Aged 0 through 18 years, or in accordance with state law or mandates if such exist. Copies of the ACIP immunization schedules are attached at the end of this document.

3. **Prevention of Dental Caries in Children from Birth through Age 5 Years** (Reference: 67- USPSTF)
   - The USPSTF recommends that primary care clinicians prescribe oral fluoride supplementation starting at age 6 months for children whose water supply is deficient in fluoride. It is also recommended that primary care clinicians apply fluoride varnish to the primary teeth of all infants and children starting at the age of primary tooth eruption.

**Part III: Recommendations for Select Populations at Risk**

1. **Iron Supplementation** (Reference: 15 – USPSTF)
   - The U.S. Preventive Services Task Force (USPSTF) concludes that evidence is insufficient to recommend for or against routine screening for iron deficiency anemia in asymptomatic children aged 6 to 12 months.

2. **Hepatitis B Screening** (Reference: 68 – USPSTF)
   - Screen for Hepatitis B in adolescents at high risk for infection. Risk factors include country of origin, HIV-positive persons, injection drug users, household contacts or sexual partners of persons with HBV infection, and men who have sex with men. Screening is also recommended for persons receiving hemodialysis or cytotoxic or immunosuppressive therapy.

3. **Behavioral Counseling to Prevent Skin Cancer** (Reference: 62- USPSTF, 76-AAP)
   - All children and adolescents age 6 months to 24 years especially those with fair skin types should be counseled about minimizing ultraviolet radiation to reduce risk for skin cancer.

4. **Sexually Transmitted Infections** (Reference: 16, 17, and 18 – USPSTF)
   - a) Gonorrhea - Screen for Gonorrhea in sexually active adolescent females.
   - b) Chlamydia - Screen for Chlamydia in sexually active adolescent females.
   - c) Behavioral Counseling - Intensive behavioral counseling is recommended for all sexually active adolescents

**Preventive Health Guidelines for Adults 18 years and Older**

**Part I: Adults at Average Risk**

1. Periodic evaluations (Reference 28- SGIM)
   - a) Height and Weight Measurement: Get baseline height at initial visit and weight at every visit (References: 29 – AHA; 30 - USPSTF)
   - b) Calculation of Body Mass Index: At every visit (References: 30 – USPSTF; 29 - AHA)
   - c) Blood Pressure Measurement: At every visit (References: 31 - USPSTF)

2. Counseling
   - Provide health counseling regarding the following topics: (Reference: 18, 30, 34, 35, 37, 62 – USPSTF, 38 - ACS)
a) Avoidance of tobacco and/or tobacco cessation
b) Weight loss for obese adults
c) Promotion of healthy diet
d) Benefits of physical activity
e) Alcohol use
f) Sexually transmitted infection prevention
g) Risks and symptoms of endometrial cancer to women of average risk at the time of menopause. Strongly encourage women to report and unexpected bleeding or spotting to their physicians.
h) Minimizing exposure to ultraviolet radiation to reduce risk for skin cancer

3. Screening Tests
a) Cholesterol
   Note: Recommendations from different national entities vary. We encourage review of the detailed and nuanced language in the following references: (References: 39 – USPSTF; 40 - ADA; 70 - AHA).
   • Screen men age 35 and older for lipid disorders.
   • Screen women age 45 and older for lipid disorders if they are at increased risk for coronary heart disease.
   • Men age 20 to 35 and women age 20 to 45 that are at increased risk for coronary heart disease should be screened for lipid disorder.
   • Reasonable options for screening interval include: every 5 years; screening at < 5 year intervals for people who have lipid levels close to those warranting therapy; and screening at intervals >5 years for low-risk people who have had low or repeatedly normal lipid levels.
   • For adult diabetics, perform a lipid profile at least annually. If lipid values are low-risk, the lipid profile may be performed every two years.

b) Breast cancer screening (female only)
   Note: Recommendations from different national entities vary. We encourage review of the detailed and nuanced language in the following references: (References: 33, 41 – USPSTF; 32 – ACS)
   • Screen women aged 50 to 74 years for breast cancer with biennial mammography. Some entities recommend annual mammography in this age group.
   • The decision to start regular, biennial screening mammography before the age of 50 years should be an individual one and take patient context into account, including the patient’s values regarding specific benefit and harm. Some entities recommend annual mammography in the 40 to 49 age group.
   • The USPSTF recommends that primary care clinicians assess women with a personal or family history of breast, ovarian, tubal, or peritoneal cancer or who have an ancestry associated with breast cancer susceptibility 1 and 2 (BRCA1/2) gene mutations with an appropriate brief familial risk assessment tool. Women with a positive result on the risk assessment tool should receive genetic counseling and, if indicated after counseling, genetic testing.

C) Cervical Cancer Screening (Pap) (female only) (References: 25 – USPSTF; 26 – ACS; also see Reference 27 – ACOG)
   • The USPSTF recommends screening for cervical cancer every 3 years with cervical cytology alone in women aged 21 to 29 years.
   • For women aged 30 to 65 years, the USPSTF recommends screening every 3 years with cervical cytology alone, every 5 years with high-risk human papillomavirus (hrHPV) testing alone, or every 5 years with hrHPV testing in combination with cytology (cotesting).

d) Prostate Cancer Screening (male only) (Reference: 42 – ACS; also see references 43 – USPSTF and 44 – AUA)
• Prostate cancer screening recommendations vary, and review of the detailed language in the references is recommended. The USPSTF recommends men ages 55 to 69 make an individual decision about prostate cancer screening with their clinician. The Task Force recommends against routine screening for men age 70 and older. The American Cancer Society (ACS) and the American Urological Association (AUA) recommend an informed decision-making process for men age 50 and older (ACS) or men age 55-69 (AUA) who have at least a ten-year life expectancy. Among the potential considerations for informed decision making are the risks, benefits and uncertainties of screening, as well as individual values and preferences. ACS states that prostate cancer screening should not occur without an informed decision-making process.

e) Colorectal Cancer Screening (Reference: 46 – USPSTF; also see References 45 – ACS and 47 - ACOG)

Screen men and women age 50-75 for colorectal cancer using:
• Guaiac Fecal Occult Blood Test (gFOBT) annually or;
• Fecal Immunochemical Testing(FIT) annually or;
• Fecal Immunochemical Testing(FIT)-DNA every 3 years or;
• Flexible sigmoidoscopy every 5 years or;
• Flexible sigmoidoscopy every 10 years with FIT annually or;
• Colonoscopy every 10 years or;
• CT Colonography every 5 years

For pt. at high risk it is recommend you have an in-depth conversation with your physician (e.g., personal family history of colorectal disease or other hereditary syndromes.

Note: Single–panel gFOBT performed in the medical office using a stool sample collected during a digital rectal examination is not a recommended option for CRC screening due to its very low sensitivity for advanced adenomas and cancer.
• Some entities recommend annual colorectal cancer screening in the 45 to 49 age group. The decision to start colorectal cancer screening before the age of 50 years should be an individual one and take into account patient context, disease risk, and include the patient’s preferences and values regarding specific benefit and harm.

f) Screening for Depression (Reference: 48, 75 – USPSFT)
• Screening for depression in the general adult population, including pregnant and postpartum women. Screening should be implemented with adequate systems in place to ensure accurate diagnosis, effective treatment, and appropriate follow-up.
• Clinicians should provide or refer pregnant and postpartum persons who are at increased risk of perinatal depression to counseling interventions

g) Screening for Alcohol Misuse (Reference: 35 – USPSTF)
• Screen for unhealthy alcohol use in primary care settings in adults 18 years or older, including pregnant women, and providing persons engaged in risky or hazardous drinking with brief behavioral counseling interventions to reduce unhealthy alcohol use

h) Counseling and Interventions to Address Tobacco Use (Reference: 34 – USPSTF).
• Ask all adults about tobacco use and provide tobacco cessation interventions for those who use tobacco products. Provide augmented, pregnancy-tailored counseling for pregnant women who use tobacco

i) Screening for Obesity (Reference: 30 - USPSTF)
• Screen all adults for obesity. Clinicians should offer or refer patients with a body mass index (BMI) of 30 kg/m2 or higher to intensive, multicomponent behavioral interventions.

j) HIV Serology (Reference: 56 – USPSTF)
• Screen for HIV infection in adults age 18 to 65 years. Older adults who are at increased risk should also be screened. Screen all pregnant women for HIV. The USPSTF recommends that primary care clinicians assess women with a personal or family history of breast, ovarian, tubal, or peritoneal cancer or who have an ancestry associated with breast cancer susceptibility 1 and 2 (BRCA1/2) gene mutations with an appropriate brief familial risk assessment tool. Women with a positive result on the risk assessment tool should receive genetic counseling and, if indicated after counseling, genetic testing.
• The evidence is insufficient to determine optimum time intervals for HIV screening.

k. **Screening for Intimate Partner Violence** (Reference: 59 – USPSTF)
   • Screen for intimate partner violence (IPV) in women of reproductive age and provide or refer women who screen positive to ongoing support services

l. **Screening for Hepatitis C** (Reference: 64 – USPSTF)
   • Screen for Hepatitis C (HCV) infection in persons at high risk for infection and offer one-time screening for HCV infection to adults born between 1945 and 1965.

m. **Screening for Lung Cancer** (Reference: 69 - USPSTF)
   • Screen annually for lung cancer with low-dose computed tomography in adults ages 55 to 80 who have a 30 pack-year smoking history and currently smoke or have quit within the past 15 years. Screening should be discontinued once a person has not smoked for 15 years or develops a health problem that substantially limits life expectancy or the ability or willingness to have curative lung surgery.

4. **Immunizations** (References: 49, 50, 19 – ACIP)
   • Administer immunizations in accordance with the ACIP Recommended Adult Immunization Schedule or in accordance with state law or regulations. See the ACIP Recommended Adult Immunization Schedule at the end of this document.

5. **Preventive Treatment**
   a) **Aspirin** (Reference: 51 – USPSTF, 20- ACC)
      • Adults aged 50 to 59 years with a ≥10% 10-year CVD risk: The USPSTF recommends initiating low-dose aspirin use for the primary prevention of cardiovascular disease (CVD) and colorectal cancer (CRC) in adults aged 50 to 59 years who have a 10% or greater 10-year CVD risk, are not at increased risk for bleeding, have a life expectancy of at least 10 years, and are willing to take low-dose aspirin daily for at least 10 years.
   
   b) **Folic acid** (Reference: 52 – USPSTF)
      • All women planning or capable of pregnancy should take a daily supplement containing 0.4 to 0.8 mg (400 to 800 µg) of folic acid.
   
   c) **Chemoprevention of breast cancer** (Reference: 53 – USPSTF)
      • Engage in shared, informed decision making with women who are at increased risk for breast cancer about medications to reduce their risk. For women who are at increased risk for breast cancer and at low risk for adverse medication effects, clinicians should offer to prescribe risk-reducing medications.
   
   d) **Statins for Cardiovascular Disease Prevention** (Reference 39-USPSTF, 20 ACC)
      • The USPSTF recommends that adults without a history of cardiovascular disease (CVD) (i.e. symptomatic coronary artery disease or ischemic stroke) use a low- to moderate-dose statin for the prevention of CVD events and mortality when all the following criteria are met:
         o they are aged 40 to 75 years;
         o they have 1 or more CVD risk factors (i.e. dyslipidemia, diabetes, hypertension, or smoking);
         o they have a calculated 10-year risk of a cardiovascular event of 10% or greater.
      • Identification of dyslipidemia and calculation of 10-year CVD event risk requires universal lipids screening in adults aged 40 to 75 years.
Part II: Recommendations for Select Adult Populations at Increased Risk

1. **Screening for Diabetes** (References: 54 – USPSTF; 55 – ADA)
   Screening for abnormal blood glucose as part of cardiovascular risk assessment in adults aged 40 to 70 years who are overweight or obese. Clinicians should offer or refer patients with abnormal blood glucose to intensive behavioral counseling interventions to promote a healthful diet and physical activity.

   **Prevention or Delay of Type 2 Diabetes**
   • Test all adults, beginning at age 45, regardless of weight.
   • Test asymptomatic adults of any age who are overweight, are obese, or have one or more additional risk factors for diabetes.
   • Consider metformin therapy to prevent type 2 diabetes for:
     o Prediabetes;
     o BMI > 35 kg/m²
     o Age < 60 years
     o Women who have had gestational diabetes
   • Refer patients with prediabetes to a program of intensive diet and physical activity with a behavioral counseling component:
     o Target 7% body weight loss
     o Encourage at least 150 minutes/week of moderate-intensity physical activity.
     o Offer follow-up, including counseling, diabetes self-management education, and ongoing support.

2. **Tuberculosis Testing: Test person at increased risk for TB**, (References: 23, 24 – CDC)
   • Persons with increased risk for developing TB include the following:
     o Persons who may have recent infection, including: close contacts of persons with infectious pulmonary TB; persons who have recently immigrated from areas of the world with high rates of TB; or groups of people with high rates of TB transmission (homeless persons, those with HIV infections, injection drug use, persons who reside or work in institutional settings).
     o Persons with clinical conditions that are associated with progression to active TB, including: HIV infection, injections drug use, pulmonary fibrotic lesions on CXR, underweight, silicosis, chronic renal failure on hemodialysis, diabetes, gastrectomy, jejunoileal bypass, renal and cardiac transplantation, head and neck cancer, other neoplasms, prolonged corticosteroid or immunosuppressive therapy.

3. **Syphilis Serology** (References: 57, 58 – USPSTF)
   • The USPSTF recommends screening for syphilis infection in persons who are at increased risk for infection.
   • Perform early screening for all pregnant women.

4. **Gonorrhea Screening** (References: 17 – USPSTF)
   • Screen for gonorrhea in sexually active women age 24 years and younger and in older women who are at increased risk for infection.

5. **Chlamydia Screening** (References: 16 – USPSTF)
   • Screen for chlamydia in sexually active women age 24 years and younger and in older women who are at increased risk for infection.

6. **Counseling and Interventions to Address Tobacco Use** (Reference: 34 – USPSTF).
   • Ask all adults about tobacco use and provide tobacco cessation interventions for those who use tobacco products. Provide augmented, pregnancy-tailored counseling for pregnant women who use tobacco.
7. **Healthful Diet and Physical Activity for Cardiovascular Disease Prevention in Adults With Cardiovascular Risk Factors: Behavioral Counseling** (Reference: 37 - USPSTF)
   - Offer or refer adults who are overweight or obese and have additional cardiovascular disease (CVD) risk factors to intensive behavioral counseling interventions to promote a healthful diet and physical activity for CVD prevention.

8. **Screening for Hepatitis B Virus Infection** (Reference: 68 - USPSTF)
   - Screen for Hepatitis B in adults at high risk for infection.
   - Risk factors include country of origin, HIV positive persons, injection drug users, household contacts or sexual partners with HBV infection, and men who have sex with men.
   - Screening is also recommended for persons receiving hemodialysis or cytotoxic or immunosuppressive therapy.

9. **Sexually Transmitted Infections: Behavioral Counseling** (Reference: 18- USPSTF)
   - Intensive behavioral counseling for adults who are at increased risk for sexually transmitted infections (STIs).

**Part III: Additional Recommendations for Adults Age 65 and Older**

In addition to the services recommended in the guidelines for adults age 19 and older, the following services are recommended for individuals age 65 and older.

1. **Immunizations** (Reference: 49 – ACIP)
   - Administer immunizations in accordance with the ACIP Recommended Adult Immunization Schedule. A copy is attached.

2. **Osteoporosis Screening** (Reference: 60, 74 – USPSTF)
   - Screen for osteoporosis with bone measurement testing to prevent osteoporotic fractures in women 65 years and older.
   - Screen for osteoporosis with bone measurement testing to prevent osteoporotic fractures in postmenopausal women younger than 65 years who are at increased risk of osteoporosis, as determined by a formal clinical risk assessment tool.

3. **Screening for Abdominal Aortic Aneurysm** (Reference: 61 - USPSTF)
   - Men ages 65 to 75 who have ever smoked should be screened one time for abdominal aortic aneurysm, using ultrasonography.

4. **Prevention of Falls in Community Dwelling Older Adults** (Reference: 63 - USPSTF)
   - The USPSTF recommends exercise interventions to prevent falls in community-dwelling adults 65 years or older who are at increased risk for falls.

**Part IV: Women Receiving Perinatal Care** (References: 49 - ACIP; 65, 73 - ACOG; 71, 72 - USPSTF)

The following summary addresses key aspects of the American College of Obstetricians and Gynecologists Guidelines for Preconception Care, Prenatal Care and Postpartum Care, as they apply in uncomplicated situations. However, it does not attempt to cover all details, and readers are encouraged to refer to the original source document for the comprehensive guidelines.
I. Preconception Care

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Preconception care aims to optimize a woman’s health, health behaviors, and knowledge prior to conception. Recommended care includes:

- **History**
  - Gynecologic, obstetrical, medical, surgical and psychiatric histories
  - Family history and genetic history
  - Assessment of socioeconomic, educational and cultural context
  - Immunization status
  - Medications (prescription and nonprescription)

- **Physical Exam**
- **Preconception counseling and interventions, including:**
  - Substance use (tobacco, alcohol, and drugs)
  - Family planning
  - Sexually transmitted diseases including HIV
  - Nutritional counseling and folic acid use
  - Safety and social supports
  - Immunizations, as indicated
  - Evaluation of medications
  - Consideration of preconception genetic screening

- **Management of medical conditions, including diabetes, hypertension, epilepsy, thyroid conditions, maternal phenylketonuria, asthma, history of bariatric surgery, hemoglobinopathies, inherited thrombophilias, obesity, and other chronic diseases**
II. Prenatal Care

Prenatal care involves an ongoing process of risk identification, assessment and management. Prenatal care visits should begin in the first trimester. A typical visit schedule is every 4 weeks for the first 28 weeks of gestation, every 2 weeks until 36 weeks of gestation, and weekly thereafter. The visit schedule may be altered for women requiring close surveillance, such as those with medical or obstetric problems or at the extremes of reproductive age.

### First Prenatal Visit

- **History**
  - Obstetrical and medical histories
  - Family history and genetic history
  - History of substance use and abuse, including tobacco, alcohol, drugs
  - Assessment of socioeconomic, educational and cultural context
  - Immunization status
  - Medications (prescription and nonprescription) and allergies
- **Physical exam including pelvic exam**
- **Education** about the expected course of pregnancy, nausea and vomiting, signs and symptoms to report to the physician, laboratory tests to be done, costs, physician/midwife coverage for labor and delivery
- **Education and counseling** about safety practices (lap and shoulder belt use, infection prevention), counseling about substance use and abuse, psychosocial issues, nutrition, exercise, air travel
- **Documentation** of Last Menstrual Period (LMP) and assignment of Estimated Date of Delivery (EDD) / Estimated Date of Confinement (EDC)
- Recommend prenatal vitamins with folic acid and iron

### Each Subsequent Prenatal Visit

- **Blood pressure**
  - Screen for preeclampsia in pregnant women with blood pressure measurements throughout pregnancy
- **Weight**
- **Uterine size** for progressive growth and consistency with EDD
- **Presence of fetal heart activity** at appropriate gestational ages
- **Ask about fetal movement** (at appropriate gestational ages), leakage of fluid, vaginal bleeding
- **Urine dipstick**, as clinically indicated

### Initial Testing

- Blood type, D(Rh) type, Antibody screen
- Complete blood count
- Urinalysis
- Hepatitis B (HBsAg)
- Syphilis (VDRL/RDR)
- Rubella titer
- HIV
- Chlamydia
- For women at higher risk:
  - Gonorrhea
  - Tuberculin skin test
- Ultrasound, as indicated to address specific clinical questions

### Antepartum Genetic Screening and Diagnosis
- Family history and ethnic background are key considerations in the need for genetic testing. There are a variety of ways to screen for fetal birth defects or genetic abnormalities. Obstetric providers should provide recommended screening or establish referral sources for screening. Patients should be educated about available options.
- Screening for aneuploidy should be offered to all women who seek prenatal care before 20 weeks gestation, regardless of maternal age, along with counseling to assist in informed decision-making.

### Recommended Subsequent Testing

#### Testing recommended for all pregnant women
- Hematocrit or hemoglobin – early in third trimester
- Diabetes screening – usually at 24-28 weeks with a plasma glucose one hour after a 50-g oral glucose challenge. A 3-hour oral glucose tolerance test should be performed for those with an abnormal screening test.
- Screening for Group B streptococcal disease at 35-37 weeks
  - Women with group B streptococcal bacteriuria during the current pregnancy and those who have previously given birth to a neonate with early-onset group B streptococcal disease do not need to be screened but should be treated with intrapartum prophylactic antibiotics.

#### Testing recommended when indicated
- Ultrasound
  - The timing and type of ultrasound should be based on the clinical question being asked. The optimal timing for a single ultrasound examination in the absence of specific indications for a first trimester exam is 18-20 weeks of gestation.
- Antepartum tests of fetal well-being are indicated when there is increased risk of fetal demise.
  - The type of test, when to start testing, and frequency of testing are dependent upon the clinical situation.

#### Testing recommended only for women at increased risk
- Antibody tests in unsensitized D-negative patients at 28-29 weeks
- Third trimester HIV, chlamydia, syphilis, gonorrhea
- Testing at time of hospital admission: Hepatitis B

### Education and Counseling (After Initial Prenatal Visit)
- Working
- Childbirth education classes
- Newborn care provider
- Anticipating labor
- Preterm labor
- Trial of labor after Cesarean delivery
- Elective deliveries are not recommended prior to 39 weeks of gestation without medical indication and documentation of term gestation
• Breastfeeding
• Postpartum contraception/sterilization/tubal ligation
• Psychosocial issues, including substance use or abuse, depression, intimate partner violence

### Treatment

- Anti-D immune globulin for unsensitized D-negative patients at 28-29 weeks and at the time of ectopic gestation, abortion, procedures associated with possible fetal-to-maternal bleeding, conditions associated with fetal-maternal hemorrhage, unexplained vaginal bleeding, delivery of a newborn who is D-positive.
- Immunizations:
  - Influenza vaccine for women who will be pregnant during the influenza season, using inactivated influenza vaccine.
  - Tdap – Administer one dose of Tdap during each pregnancy, preferably between 27 and 36 weeks gestation, regardless of the interval since prior Td or Tdap vaccination.
  - Other vaccines when specifically indicated: Hepatitis A, Hepatitis B, pneumococcal, meningococcal
- Use low-dose aspirin (81 mg/d) as preventive medication after 12 weeks of gestation in women who are at high risk for preeclampsia.

### III. Postpartum Care

For women with a Cesarean section or complicated pregnancy, 7-14 days after delivery may be recommended. A postpartum visit is recommended for all women approximately 4-6 weeks after delivery. Services at that visit should include:

#### Postpartum Visit

**Interval History**

**Physical Exam**
- Weight, blood pressure, breasts, abdomen, pelvic exam (including examination of episiotomy repair and evaluation of uterine involution)
- Pap test if needed

**Testing**
- Women with gestational diabetes should be screened for diabetes 6-12 weeks postpartum

**Counseling**
- Breastfeeding
- Screen for postpartum depression, postpartum blues
- Discuss contraception and plans for future pregnancies
- Discuss implication of any pregnancy complications on future pregnancies
- Review immunizations and administer Tdap, rubella and/or varicella vaccines if indicated
- Counseling regarding behaviors, such as tobacco, alcohol, and other substance use, with referrals for follow up care if appropriate
# Immunization Schedules 2019 Childhood: 0-18 Years

## Table 1: Recommended Child and Adolescent Immunization Schedule for ages 18 years or younger United States, 2019

These recommendations must be read with the Notes that follow. For those who fall behind or start late, provide catch-up vaccination at the earliest opportunity as indicated by the green bars in Table 1. To determine minimum intervals between doses, see the catch-up schedule (Table 2). School entry and adolescent vaccine age groups are shaded in gray.

<table>
<thead>
<tr>
<th>Vaccine</th>
<th>Birth</th>
<th>1 mo</th>
<th>2 mos</th>
<th>4 mos</th>
<th>6 mos</th>
<th>9 mos</th>
<th>12 mos</th>
<th>15 mos</th>
<th>18 mos</th>
<th>19-23 mos</th>
<th>2-3 yrs</th>
<th>4-6 yrs</th>
<th>7-10 yrs</th>
<th>11-12 yrs</th>
<th>13-15 yrs</th>
<th>16 yrs</th>
<th>17-18 yrs</th>
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</thead>
<tbody>
<tr>
<td>Hepatitis B (HepB)</td>
<td>1st</td>
<td>2nd</td>
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<tr>
<td>Rotavirus (RV) RV1 (2-dose series); RV5 (3-dose series)</td>
<td>1st</td>
<td>2nd</td>
<td>See Notes</td>
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<tr>
<td>Diphtheria, tetanus, &amp; acellular pertussis (DTaP; &lt;7 yrs)</td>
<td>1st</td>
<td>2nd</td>
<td>3rd</td>
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<tr>
<td><em>Haemophilus influenzae type b (Hib)</em></td>
<td>1st</td>
<td>2nd</td>
<td>See Notes</td>
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<tr>
<td>Pneumococcal conjugate (PCV13)</td>
<td>1st</td>
<td>2nd</td>
<td>3rd</td>
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<tr>
<td>Inactivated poliovirus (IPV; ≤18 yrs)</td>
<td>1st</td>
<td>2nd</td>
<td>See Notes</td>
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<td>Influenza (IIV)</td>
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<tr>
<td>Influenza (LAIV)</td>
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<tr>
<td>Measles, mumps, rubella (MMR)</td>
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<td>Varicella (VAR)</td>
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<td>Hepatitis A (HepA)</td>
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<tr>
<td>Meningococcal (MenACWY-D ≥9 mos; MenACWY-CRM ≥2 mos)</td>
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<tr>
<td>Tetanus, diphtheria, &amp; acellular pertussis (Td, ≥7 yrs)</td>
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<tr>
<td>Human papillomavirus (HPV)</td>
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<tr>
<td>Meningococcal B</td>
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<tr>
<td>Pneumococcal polysaccharide (PPSV23)</td>
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</tr>
</tbody>
</table>

- **Range of recommended ages for all children**
- **Range of recommended ages for catch-up immunization**
- **Range of recommended ages for certain high-risk groups**
- **Range of recommended ages for non-high-risk groups that may receive vaccine, subject to individual clinical decision-making**
- **No recommendation**
### Table 2: Catch-up immunization schedule for persons aged 4 months—18 years who start late or who are more than 1 month behind, United States, 2019

The figure below provides catch-up schedules and minimum intervals between doses for children whose vaccinations have been delayed. A vaccine series does not need to be restarted, regardless of the time that has elapsed between doses. Use the section appropriate for the child’s age. Always use this table in conjunction with Table 1 and the notes that follow.

<table>
<thead>
<tr>
<th>Vaccine</th>
<th>Minimum Age for Dose 1</th>
<th>Dose 1 to Dose 2</th>
<th>Dose 2 to Dose 3</th>
<th>Minimum Interval Between Doses</th>
<th>Dose 3 to Dose 4</th>
<th>Dose 4 to Dose 5</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Hepatitis B</strong></td>
<td>birth</td>
<td>4 weeks</td>
<td>8 weeks and at least 16 weeks after first dose. Minimum age for the final dose is 24 weeks.</td>
<td></td>
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</tr>
<tr>
<td><strong>Rotavirus</strong></td>
<td>6 weeks Max. age for first dose is 14 weeks, 6 days</td>
<td>4 weeks</td>
<td>4 weeks Max. age for final dose is 8 months, 0 days.</td>
<td></td>
<td></td>
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</tr>
<tr>
<td><strong>Haemophilus influenzae type b</strong></td>
<td>6 weeks</td>
<td>4 weeks</td>
<td>No further doses needed if first dose was administered at age 15 months or older. 4 weeks if first dose was administered before the 1st birthday. 8 weeks (as final dose) if first dose was administered at age 12 through 14 months.</td>
<td></td>
<td></td>
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</tr>
<tr>
<td><strong>Pneumococcal conjugate</strong></td>
<td>6 weeks</td>
<td>No further doses needed for healthy children if first dose was administered at age 24 months or older. 4 weeks if first dose was administered before the 1st birthday. 8 weeks (as final dose for healthy children) if first dose was administered at the 1st birthday or after.</td>
<td></td>
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</tr>
<tr>
<td><strong>Inactivated poliovirus</strong></td>
<td>6 weeks</td>
<td>4 weeks</td>
<td>4 weeks if current age is &lt; 4 years. 6 months (as final dose) if current age is 4 years or older.</td>
<td></td>
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</tr>
<tr>
<td><strong>Measles, mumps, rubella</strong></td>
<td>12 months</td>
<td>4 weeks</td>
<td>4 weeks</td>
<td></td>
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</tr>
<tr>
<td><strong>Varicella</strong></td>
<td>12 months</td>
<td>4 weeks</td>
<td></td>
<td></td>
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</tr>
<tr>
<td><strong>Hepatitis A</strong></td>
<td>12 months</td>
<td>8 weeks</td>
<td></td>
<td></td>
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</tr>
<tr>
<td><strong>Meningococcal</strong></td>
<td>2 months Meningococcal vaccine</td>
<td>8 weeks</td>
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</tr>
<tr>
<td><strong>Meningococcal</strong></td>
<td>9 years Not Applicable (N/A)</td>
<td>8 weeks</td>
<td></td>
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</tr>
<tr>
<td><strong>Human papillomavirus</strong></td>
<td>9 years Routine dosing intervals are recommended.</td>
<td>4 weeks</td>
<td></td>
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</tr>
<tr>
<td><strong>Hepatitis A</strong></td>
<td>N/A</td>
<td>4 weeks</td>
<td>8 weeks and at least 16 weeks after first dose.</td>
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</tr>
<tr>
<td><strong>Hepatitis B</strong></td>
<td>N/A</td>
<td>6 months</td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td><strong>Inactivated poliovirus</strong></td>
<td>N/A</td>
<td>4 weeks</td>
<td>4 weeks</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Measles, mumps, rubella</strong></td>
<td>N/A</td>
<td>4 weeks</td>
<td>4 weeks if younger than age 13 years. 4 weeks if age 13 years or older.</td>
<td></td>
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</tr>
<tr>
<td><strong>Varicella</strong></td>
<td>N/A</td>
<td>4 weeks</td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>

**Children and adolescents age 7 through 18 years**

**Meningococcal**

- Not Applicable (N/A) 7 years
- Minimum Interval Between Doses: 8 weeks

**Human papillomavirus**

- 9 years Routine dosing intervals are recommended.
- Minimum Interval Between Doses: 4 weeks

**Hepatitis A**

- N/A 6 months
- Minimum Interval Between Doses: 8 weeks and at least 16 weeks after first dose.

**Hepatitis B**

- N/A 4 weeks
- Minimum Interval Between Doses: 6 months

**Inactivated poliovirus**

- N/A 4 weeks
- Minimum Interval Between Doses: 6 months

**Measles, mumps, rubella**

- N/A 4 weeks
- Minimum Interval Between Doses: 4 weeks

**Varicella**

- N/A 4 weeks
- Minimum Interval Between Doses: 4 weeks
Recommended Child and Adolescent Immunization Schedule for ages 18 years or younger, United States, 2019

Diphtheria, tetanus, and pertussis (DTaP) vaccination (minimum age: 6 weeks [4 years for Kinrix or Quadracell])

Routine vaccination
- 5-dose series at 2, 4, 6, 15–18 months, 4–6 years
  - Prospectively: Dose 4 may be given as early as age 12 months if at least 6 months have elapsed since dose 3.
  - Retrospectively: A 4th dose that was inadvertently given as early as 12 months may be counted if at least 4 months have elapsed since dose 3.

Catch-up vaccination
- Dose 5 is not necessary if dose 4 was administered at age 4 years or older.
- For other catch-up guidance, see Table 2.

Haemophilus influenzae type b vaccination (minimum age: 6 weeks)

Routine vaccination
- ActHIB, Hiberix, or Pentacel: 4-dose series at 2, 4, 6, 12–15 months
- PedvaxHIB: 3-dose series at 2, 4, 12–15 months

Catch-up vaccination
- Dose 1 at 7–11 months: Administer dose 2 at least 4 weeks later and dose 3 (final dose) at 12–15 months or 8 weeks after dose 2 (whichever is later).
- Dose 1 at 12–14 months: Administer dose 2 (final dose) at least 8 weeks after dose 1.
- Dose 1 before 12 months and dose 2 before 15 months: Administer dose 3 (final dose) 8 weeks after dose 2.
- 2 doses of PedvaxHIB before 12 months: Administer dose 3 (final dose) at 12–59 months and at least 8 weeks after dose 2.
- Unvaccinated at 15–59 months: 1 dose
- For other catch-up guidance, see Table 2.

Special situations
- Chemotherapy or radiation treatment:
  - 12–59 months
    - Unvaccinated or only 1 dose before age 12 months: 2 doses, 8 weeks apart
    - 2 or more doses before age 12 months: 1 dose at least 8 weeks after previous dose
    - Doses administered within 14 days of starting therapy or during therapy should be repeated at least 3 months after therapy completion.
- Hematopoietic stem cell transplant (HSCT):
  - 3-dose series 4 weeks apart starting 6 to 12 months after successful transplant regardless of Hib vaccination history

Anatomic or functional asplenia (including sickle cell disease):
- 12–59 months
  - Unvaccinated or only 1 dose before 12 months: 2 doses, 8 weeks apart
  - 2 or more doses before 12 months: 1 dose at least 8 weeks after previous dose

Elective splenectomy:
- Unvaccinated persons age 5 years or older
  - 1 dose

HIV infection:
- 12–59 months
  - Unvaccinated or only 1 dose before age 12 months: 2 doses, 8 weeks apart
  - 2 or more doses before age 12 months: 1 dose at least 8 weeks after previous dose

Immunoglobulin deficiency, early component complement deficiency:
- 12–59 months
  - Unvaccinated or only 1 dose before age 12 months: 2 doses, 8 weeks apart
  - 2 or more doses before age 12 months: 1 dose at least 8 weeks after previous dose

*Unvaccinated = Less than routine series (through 14 months) or no doses (14 months or older)
### Recommendations for Child and Adolescent Immunization

**Hepatitis A vaccination**
(minimum age: 12 months for routine vaccination)

**Routine vaccination**
- 2-dose series (Havrix 6–12 months apart or Vaqta 6–18 months apart, minimum interval 6 months); a series begun before the 2nd birthday should be completed even if the child turns 2 before the second dose is administered.

**Catch-up vaccination**
- Anyone 2 years of age or older may receive HepA vaccine if desired. Minimum interval between doses: 6 months
- Adolescents 18 years of age or older may receive the combined HepA and HepB vaccine, Twinrix, as a 3-dose series (0, 1, and 6 months) or 4-dose series (0, 7, and 21–30 days, followed by a dose at 12 months).

**International travel**
- Persons traveling to or working in countries with high or intermediate endemic hepatitis A ([wwwnc.cdc.gov/travel/](http://wwwnc.cdc.gov/travel/));
  - Infants age 6–11 months: 1 dose before departure; revaccinate with 2 doses, separated by 6–18 months, between 12 to 23 months of age.
  - Unvaccinated age 12 months and older: 1st dose as soon as travel considered

**Special situations**
At risk for hepatitis A infection: 2-dose series as above
- Chronic liver disease
- Clotting factor disorders
- Men who have sex with men
- Injection or non-injection drug use
- Homelessness
- Work with hepatitis A virus in research laboratory or nonhuman primates with hepatitis A infection
- Travel in countries with high or intermediate endemic hepatitis A
- Close, personal contact with international adoptee (e.g., household or regular babysitting) in first 60 days after arrival from endemic area with hepatitis A (administer dose 1 as soon as adoption is planned, at least 2 weeks before adoptee’s arrival)

**Hepatitis B vaccination**
(minimum age: birth)

**Birth dose (monovalent HepB vaccine only)**
- Mother is HBsAg-negative: 1 dose within 24 hours of birth for all medically stable infants ≤2,000 grams. Infants <2,000 grams: administer 1 dose at chronological age 1 month or hospital discharge.

- Mother is HBsAg-positive:
  - Administer HepB vaccine and 0.5 mL of hepatitis B immune globulin (HBIG) (at separate anatomic sites) within 12 hours of birth, regardless of birth weight. For infants <2,000 grams, administer 3 additional doses of vaccine (total of 4 doses) beginning at age 1 month.
  - Test for HBsAg and anti-HBs at age 9–12 months. If HepB series is delayed, test 1–2 months after final dose.

- Mother’s HBsAg status is unknown:
  - Administer HepB vaccine within 12 hours of birth, regardless of birth weight.
  - For infants <2,000 grams, administer 0.5 mL of HBIG in addition to HepB vaccine within 12 hours of birth. Administer 3 additional doses of vaccine (total of 4 doses) beginning at age 1 month.

- Determine mother’s HBsAg status as soon as possible. If mother is HBsAg-positive, administer 0.5 mL of HBIG to infants ≥2,000 grams as soon as possible, after 7 days of age.

**Routine series**
- 3-dose series at 0, 1–2, 6–18 months (use monovalent HepB vaccine for doses administered before age 6 weeks)
- Infants who do not receive a birth dose should begin the series as soon as feasible (see Table 2).
- Administration of 4 doses is permitted when a combination vaccine containing HepB is used after the birth dose.
- **Minimum age for the final 3rd or 4th** dose: 24 weeks
- **Minimum intervals:** dose 1 to dose 2: 4 weeks / dose 2 to dose 3: 8 weeks / dose 1 to dose 3: 16 weeks (when 4 doses are administered, substitute “dose 4” for “dose 3” in these calculations)

**Catch-up vaccination**
- Unvaccinated persons should complete a 3-dose series at 0, 1–2, 6 months.
- Adolescents age 11–15 years may use an alternative 2-dose schedule with at least 4 months between doses (adult formulation Recombivax HB only).
- Adolescents 18 years and older may receive a 2-dose series of HepB (Hepisac-B) at least 4 weeks apart.
- Adolescents 18 years and older may receive the combined HepA and HepB vaccine, Twinrix, as a 3-dose series (0, 1, and 6 months) or 4-dose series (0, 7, and 21–30 days, followed by a dose at 12 months).
- For other catch-up guidance, see Table 2.

**Human papillomavirus vaccination**
(minimum age: 9 years)

**Routine and catch-up vaccination**
- HPV vaccine routinely recommended for all adolescents age 11–12 years (can start at age 9 years) and through age 18 years if not previously adequately vaccinated
- 2- or 3-dose series depending on age at initial vaccination:
  - Age 9 through 14 years at initial vaccination: 2-dose series at 6, 12–15 months (minimum interval: 5 months; repeat dose if administered too soon)
  - Age 15 years or older at initial vaccination: 3-dose series at 0, 1–2, 6 months (minimum interval: dose 1 to dose 2: 4 weeks / dose 2 to dose 3: 12 weeks / dose 1 to dose 3: 5 months; repeat dose if administered too soon)
- If completed valid vaccination series with any HPV vaccine, no additional doses needed

**Special situations**
- Immunocompromising conditions, including HIV infection: 3-dose series as above
- History of sexual abuse or assault: Start at age 9 years
- Pregnancy: HPV vaccine not recommended until after pregnancy; no intervention needed if vaccinated while pregnant; pregnancy testing not needed before vaccination

**Inactivated poliovirus vaccination**
(minimum age: 6 weeks)

**Routine vaccination**
- 4-dose series at ages 2, 4, 6–18 months, 4–6 years; administer the final dose on or after the 4th birthday and at least 6 months after the previous dose.
- 4 or more doses of IPV can be administered before the 4th birthday when a combination vaccine containing IPV is used. However, a dose is still recommended after the 4th birthday and at least 6 months after the previous dose.

**Catch-up vaccination**
- In the first 6 months of life, use minimum ages and intervals only for travel to a polio-endemic region or during an outbreak.
- IPV is not routinely recommended for U.S. residents 18 years and older.

**Series containing oral polio vaccine (OPV), either mixed OPV-IPV or OPV-only series:**
- Total number of doses needed to complete the series is the same as that recommended for the U.S. IPV schedule. See [www.cdc.gov/mmwr/volumes/66/wr/mm6601a6.html](http://www.cdc.gov/mmwr/volumes/66/wr/mm6601a6.html)
Recommended Child and Adolescent Immunization Schedule for ages 18 years or younger, United States, 2019

**Notes**

- Only trivalent OPV (TOPV) counts toward the U.S. vaccination requirements. For guidance to assess doses documented as "OPV," see www.cdc.gov/mmwr/volumes/66/wr/mm6606a7.htm?s_cid=mm6606a7_w.
- For other catch-up guidance, see Table 2.

**Influenza vaccination**  
(minimum age: 6 months [iIV], 2 years [LAIV], 18 years [RIV])

**Routine vaccination**  
- 1 dose any influenza vaccine appropriate for age and health status annually (2 doses separated by at least 4 weeks for children 6 months–8 years who did not receive at least 2 doses of influenza vaccine before July 1, 2018)

**Special situations**  
- Egg allergy, hives only: Any influenza vaccine appropriate for age and health status annually
- Egg allergy more severe than hives (e.g., angioedema, respiratory distress): Any influenza vaccine appropriate for age and health status annually in medical setting under supervision of health care provider who can recognize and manage severe allergic conditions

- LAIV should not be used for those with a history of severe allergic reaction to any component of the vaccine (excluding egg) or to a previous dose of any influenza vaccine, children and adolescents receiving concomitant aspirin or salicylate-containing medications, children age 2 through 4 years with a history of asthma or wheezing, those who are immunocompromised due to any cause (including immunosuppression caused by medications and HIV infection), anatomic and functional asplenia, cochlear implants, cerebrospinal fluid-opaque myelogram, close contacts and caregivers of severely immunosuppressed persons who require a protected environment, pregnancy, and persons who have received influenza antiviral medications within the previous 48 hours.

**Measles, mumps, and rubella vaccination**  
(minimum age: 12 months for routine vaccination)

**Routine vaccination**  
- 2-dose series at 12–15 months, 4–6 years
- Dose 2 may be administered as early as 4 weeks after dose 1.

**Catch-up vaccination**  
- Unvaccinated children and adolescents: 2 doses at least 4 weeks apart
- The maximum age for use of MMRV is 12 years.

**Special situations**  
International travel
- Infants age 6–11 months: 1 dose before departure; revaccinate with 2 doses at 12–15 months (12 months for children in high-risk areas) and dose 2 as early as 4 weeks later.
- Unvaccinated children age 12 months and older: 2-dose series at least 4 weeks apart before departure

**Meningococcal serogroup A,C,W,Y vaccination**  
(minimum age: 2 months [MenACWY-CRM, Menveo], 9 months [MenACWY-D, Menactra])

**Routine vaccination**  
- 2-dose series: 11–12 years, 16 years

**Catch-up vaccination**  
- Age 13–15 years: 1 dose now and booster at age 16–18 years (minimum interval: 8 weeks)
- Age 16–18 years: 1 dose

**Special situations**  
Anatomic or functional asplenia (including sickle cell disease), HIV infection, persistent complement component deficiency, eculizumab use:

- **Menveo**
  - Dose 1 at age 8 weeks: 4-dose series at 2, 4, 6, 12 months
  - Dose 1 at age 7–23 months: 2-dose series (dose 2 at least 12 weeks after dose 1 and after the 1st birthday)
  - Dose 1 at age 24 months or older: 2-dose series at least 8 weeks apart
- **Menactra**
  - Persistent complement component deficiency:
    - Age 9–23 months: 2 doses at least 12 weeks apart
    - Age 24 months or older: 2 doses at least 8 weeks apart
  - Anatomic or functional asplenia, sickle cell disease, or HIV infection:
    - Age 9–23 months: Not recommended
    - 24 months or older: 2 doses at least 8 weeks apart

Meningococcal serogroup B vaccination  
(minimum age: 10 years [MenB-4C, Bexsero; MenB-FHbp, Trumenba])

**Clinical discretion**  
- MenB vaccine may be administered based on individual clinical decision to adolescents not at increased risk age 16–23 years (preferred age 16–18 years)
- **Bexsero**: 2-dose series at least 1 month apart
- **Trumenba**: 2-dose series at least 6 months apart; if dose 2 is administered earlier than 6 months, administer a 3rd dose at least 4 months after dose 2.

**Special situations**  
Anatomic or functional asplenia (including sickle cell disease), persistent complement component deficiency, eculizumab use:

- **Bexsero**: 2-dose series at least 1 month apart
- **Trumenba**: 3-dose series at 0, 1–2, 6 months

Bexsero and Trumenba are not interchangeable; the same product should be used for all doses in a series.

For additional meningococcal vaccination information, see meningococcal MMWR publications at www.cdc.gov/vaccines/hcp/acip-recs/vacc-specific/mening.html.
### Pneumococcal Vaccination

**Recommended for:** ages 6 months to 18 years or older

**Schedule:**
- Infants: PCV13 (4 doses)
- Children: PCV13 (4 doses) followed by PPSV23 (1 dose) at age 5 years
- Adults: PPSV23 (1 dose)

**Details:**
- PCV13: 7-valent pneumococcal conjugate vaccine
- PPSV23: 23-valent pneumococcal polysaccharide vaccine

**Special Situations:**
- High-risk conditions: chronic medical conditions, immunosuppression, recent solid organ transplant

### Rotavirus Vaccination

**Recommended for:** ages 6 weeks to 14 weeks

**Schedule:**
- 2 doses at 2, 4, 6, 8, 10, and 12 months

**Details:**
- Rotarix: live, oral, attenuated vaccine
- RotaTeq: inactivated, oral vaccine

### Varicella Vaccination

**Recommended for:** ages 12 months to 12 years

**Schedule:**
- 2 doses at 12–15 months and 4–6 years

**Details:**
- Live, attenuated varicella vaccine

### Tetanus, Diphtheria, and Pertussis (Tdap) Vaccination

**Recommended for:** ages 11–12 years

**Schedule:**
- 1 dose

**Details:**
- Diphtheria and tetanus toxoids and acellular pertussis vaccine

### Notes

- Full vaccination schedule and additional information can be found on the CDC's website at www.cdc.gov/mmwr/volumes/67/mm6702a1.htm.
<table>
<thead>
<tr>
<th>Vaccine</th>
<th>19-21 years</th>
<th>22-26 years</th>
<th>27-49 years</th>
<th>50-64 years</th>
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<td>Influenza inactivated (IIV) or</td>
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<tr>
<td>influenza recombinant (RIV)</td>
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<td>Influenza live attenuated (LAIV)</td>
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<td>1 dose annually</td>
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<td>Tetanus, diphtheria, pertussis (Tdap or Td)</td>
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<td>1 or 2 doses depending on indication, then booster every 5 yrs if risk remains</td>
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<tr>
<td>Haemophilus influenzae type b (Hib)</td>
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<td>1 or 3 doses depending on indication</td>
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</table>
Recommended Adult Immunization Schedule, for ages 19 years or older, United States, 2019

For vaccine recommendations for persons age 0 through 18 years, see the Child and Adolescent Immunization Schedule.

Haemophilus influenzae type b vaccination

Special situations
- Anatomical or functional asplenia (including sickle cell disease): 1 dose Hib if previously did not receive Hib; if elective splenectomy, 1 dose Hib, preferably at least 14 days before splenectomy
- Hematopoietic stem cell transplant (HSCT): 3-dose series Hib 4 weeks apart starting 6–12 months after successful transplant, regardless of Hib vaccination history

Hepatitis A vaccination

Routine vaccination
- Not at risk but want protection from hepatitis A (identification of risk factor not required): 2-dose series HepA (Havrix 6–12 months apart or Vaqta 6–18 months apart [minimum interval: 6 months]) or 3-dose series HepA-HepB (Twinrix at 0, 1, 6 months [minimum intervals: 4 weeks between doses 1 and 2, 5 months between doses 2 and 3])

Special situations
- At risk for hepatitis A virus infection: 2-dose series HepA as above
  - Chronic liver disease
  - Clotting factor disorders
  - Men who have sex with men
  - Injection or non-injection drug use
  - Homelessness
  - Work with hepatitis A virus in research laboratory or nonhuman primates with hepatitis A virus infection
  - Travel in countries with high or intermediate endemic hepatitis A
  - Close personal contact with international adoptee (e.g., household, regular babysitting) in first 60 days after arrival from country with high or intermediate endemic hepatitis A (administer dose 1 as soon as adoption is planned, at least 2 weeks before adoptee's arrival)

Hepatitis B vaccination

Routine vaccination
- Not at risk but want protection from hepatitis B (identification of risk factor not required): 2- or 3-dose series HepB (2-dose series Heplisav-B at least 4 weeks apart [2-dose series HepB only applies when 2 doses of Heplisav-B are used at least 4 weeks apart] or 3-dose series Engerix-B or Recombivax HB at 0, 1, 6 months [minimum intervals: 4 weeks between doses 1 and 2, 8 weeks between doses 2 and 3, 16 weeks between doses 1 and 3]) or 3-dose series HepA-HepB (Twinrix at 0, 1, 6 months [minimum intervals: 4 weeks between doses 1 and 2, 5 months between doses 2 and 3])
Special situations

- At risk for hepatitis B virus infection: 2-dose (Heplisav-B) or 3-dose (Engerix-B, Recombivax HB) series HepB, or 3-dose series HepA-HepB as above
  - Hepatitis C virus infection
  - Chronic liver disease (e.g., cirrhosis, fatty liver disease, alcoholic liver disease, autoimmune hepatitis, alanine aminotransferase [ALT] or aspartate aminotransferase [AST] level greater than twice upper limit of normal)
  - HIV infection
  - Sexual exposure risk (e.g., sex partners of hepatitis B surface antigen (HBsAg)-positive persons; sexually active persons not in mutually monogamous relationships, persons seeking evaluation or treatment for a sexually transmitted infection, men who have sex with men)
  - Current or recent injection drug use
  - Percutaneous or mucosal risk for exposure to blood (e.g., household contacts of HBsAg-positive persons; residents and staff of facilities for developmentally disabled persons; health care and public safety personnel with reasonably anticipated risk for exposure to blood or blood-contaminated body fluids; hemodialysis, peritoneal dialysis, home dialysis, and predialysis patients; persons with diabetes mellitus age younger than 60 years and, at discretion of treating clinician, those age 60 years or older)
  - Incarcerated persons
  - Travel in countries with high or intermediate endemic hepatitis B

Human papillomavirus vaccination

Routine vaccination

- Females through age 26 years and males through age 21 years: 2- or 3-dose series HPV vaccine depending on age at initial vaccination; males age 22 through 26 years may be vaccinated based on individual clinical decision (HPV vaccination routinely recommended at age 11-12 years)
- Age 13 years or older at initial vaccination: 3-dose series HPV vaccine at 0, 1-2, 6 months (minimum intervals: 4 weeks between doses 1 and 2, 12 weeks between doses 2 and 3, 5 months between doses 1 and 3; repeat dose if administered too soon)
- Age 9 through 14 years at initial vaccination and received 1 dose, or 2 doses less than 5 months apart: 1 dose HPV vaccine
- Age 9 through 14 years at initial vaccination and received 2 doses at least 5 months apart: HPV vaccination complete, no additional dose needed
- If completed valid vaccination series with any HPV vaccine, no additional doses needed

Special situations

- Immunocompromising conditions (including HIV infection) through age 26 years: 3-dose series HPV vaccine at 0, 1-2, 6 months as above
- Men who have sex with men and transgender persons through age 26 years: 2- or 3-dose series HPV vaccine depending on age at initial vaccination as above
- Pregnancy through age 26 years: HPV vaccination not recommended until after pregnancy; no intervention needed if vaccinated while pregnant; pregnancy testing not needed before vaccination

Influenza vaccination

Routine vaccination

- Persons age 6 months or older: 1 dose IIV, RIV, or LAIV appropriate for age and health status annually
- For additional guidance, see www.cdc.gov/flu/professionals/index.htm

Special situations

- Egg allergy, hives only: 1 dose IIV, RIV, or LAIV appropriate for age and health status annually
- Egg allergy more severe than hives (e.g., angioedema, respiratory distress): 1 dose IIV, RIV, or LAIV appropriate for age and health status annually in medical setting under supervision of health care provider who can recognize and manage severe allergic conditions
- Immunocompromising conditions (including HIV infection), anatomical or functional asplenia, pregnant women, close contacts and caregivers of severely immunocompromised persons in protected environment, use of influenza antiviral medications in previous 48 hours, with cerebrospinal fluid leak or cochlear implant: 1 dose IIV or RIV annually (LAIV not recommended)
- History of Guillain-Barré syndrome within 6 weeks of previous dose of influenza vaccine: Generally should not be vaccinated
Measles, mumps, and rubella vaccination

Routine vaccination
- No evidence of immunity to measles, mumps, or rubella: 1 dose MMR
  - Evidence of immunity: Born before 1957 (except health care personnel), documentation of receipt of MMR, laboratory evidence of immunity or disease (diagnosis of disease without laboratory confirmation is not evidence of immunity)

Special situations
- Pregnancy with no evidence of immunity to rubella: MMR contraindicated during pregnancy; after pregnancy (before discharge from health care facility), 1 dose MMR
- Non-pregnant women of childbearing age with no evidence of immunity to rubella: 1 dose MMR
- HIV infection with CD4 count ≤200 cells/µL for at least 6 months and no evidence of immunity to measles, mumps, or rubella: 2-dose series MMR at least 4 weeks apart; MMR contraindicated in HIV infection with CD4 count <200 cells/µL
- Severe immunocompromising conditions: MMR contraindicated
- Students in postsecondary educational institutions, international travelers, and household or close personal contacts of immunocompromised persons with no evidence of immunity to measles, mumps, or rubella: 1 dose MMR if previously received 1 dose MMR, or 2-dose series MMR at least 4 weeks apart if previously did not receive any MMR
- Health care personnel born in 1957 or later with no evidence of immunity to measles, mumps, or rubella: 2-dose series MMR at least 4 weeks apart for measles or mumps, or at least 1 dose MMR for rubella; if born before 1957, consider 2-dose series MMR at least 4 weeks apart for measles or mumps, or 1 dose MMR for rubella

Meningococcal vaccination

Special situations for MenACWY
- Anatomical or functional asplenia, including sickle cell disease, HIV infection, persistent complement component deficiency, eczulizumab use: 2-dose series MenACWY (Menactra, Menveo) at least 6 weeks apart and revaccinate every 5 years if risk remains
- Travel in countries with endemic meningoencephalitis, microbiologists routinely exposed to Neisseria meningitidis: 1 dose MenACWY and revaccinate every 5 years if risk remains
- First-year college students who live in residential housing (if not previously vaccinated at age 16 years or older) and military recruits: 1 dose MenACWY

Special situations for MenB
- Anatomical or functional asplenia, including sickle cell disease, persistent complement component deficiency, eczulizumab use, microbiologists routinely exposed to Neisseria meningitidis: 2-dose series MenB-4C (Bexsero) at least 1 month apart, or 3-dose series MenB-Hib (Trumenba) at 0, 1-2, 6 months (if dose 2 was administered at least 6 months after dose 1, dose 3 not needed); MenB-4C and MenB-Hib are not interchangeable (use same product for all doses in series)
- Pregnancy: Delay MenB until after pregnancy unless benefit outweighs potential risks
- Healthy adolescents and young adults age 16 through 23 years (age 16 through 18 years preferred) at increased risk for meningococcal disease: Based on individual clinical decision, may receive 2-dose series MenB-4C at least 1 month apart, or 2-dose series MenB-Hib at 0, 6 months (if dose 2 was administered less than 6 months after dose 1, administer dose 2 at least 4 months after dose 2). MenB-4C and MenB-Hib are not interchangeable (use same product for all doses in series)

Pneumococcal vaccination

Routine vaccination
- Age 65 years or older (immunocompetent): 1 dose PCV13 if previously did not receive PCV13, followed by 1 dose PPSV23 at least 1 year after PCV13 and at least 5 years after last dose PPSV23
  - Previously received PPSV23 but not PCV13 at age 65 years or older: 1 dose PCV13 at least 1 year after PPSV23
  - When both PCV13 and PPSV23 are indicated, administer PCV13 first (PCV13 and PPSV23 should not be administered during same visit)
Special situations
- Age 19 through 64 years with chronic medical conditions (chronic heart [excluding hypertension], lung, or liver disease; diabetes), alcoholism, or cigarette smoking: 1 dose PPSV23
- Age 19 years or older with immunocompromising conditions (congenital or acquired immunodeficiency [including B- and T-lymphocyte deficiency], complement deficiencies, phagocytic disorders, HIV infection, chronic renal failure, nephrotic syndrome, leukemia, lymphoma, Hodgkin disease, generalized malignancy, iatrogenic immunosuppression (e.g., drug or radiation therapy), solid organ transplant, multiple myeloma) or anatomical or functional asplenia (including sickle cell disease and other hemoglobinopathies): 1 dose PCV13 followed by 1 dose PPSV23 at least 8 weeks later, then another dose PPSV23 at least 5 years after previous PPSV23. At age 65 years or older, administer 1 dose PPSV23 at least 5 years after most recent PPSV23 (note: only 1 dose PPSV23 recommended at age 65 years or older)
- Age 19 years or older with cerebrospinal fluid leak or cochlear implant: 1 dose PCV13 followed by 1 dose PPSV23 at least 8 weeks later; at age 65 years or older, administer another dose PPSV23 at least 5 years after PPSV23 (note: only 1 dose PPSV23 recommended at age 65 years or older)

Tetanus, diphtheria, and pertussis vaccination

Routine vaccination
- Previously did not receive Tdap at or after age 11 years: 1 dose Tdap, then Td booster every 10 years

Special situations
- Previously did not receive primary vaccination series for tetanus, diphtheria, and pertussis: 1 dose Tdap followed by 1 dose Td at least 4 weeks after Tdap, and another dose Td 6-12 months after last Td (Tdap can be substituted for any Td dose, but preferred as first dose); Td booster every 10 years thereafter
- Pregnancy: 1 dose Tdap during each pregnancy, preferably in early part of gestational weeks 27–36
- For information on use of Tdap or Td as tetanus prophylaxis in wound management, see Prevention of Pertussis, Tetanus, and Diphtheria with Vaccines in the United States: Recommendations of the Advisory Committee on Immunization Practices (ACIP)

Varicella vaccination

Routine vaccination
- No evidence of immunity to varicella: 2-dose series VAR 4–8 weeks apart if previously did not receive varicella-containing vaccine (VAR or MMRV [measles-mumps-rubella-varicella vaccine] for children); if previously received 1 dose varicella-containing vaccine: 1 dose VAR at least 4 weeks after first dose
- Evidence of immunity: U.S.-born before 1980 (except for pregnant women and health care personnel [see below]), documentation of 2 doses varicella-containing vaccine at least 4 weeks apart, diagnosis or verification of history of varicella or herpes zoster by a health care provider, laboratory evidence of immunity or disease

Special situations
- Pregnancy with no evidence of immunity to varicella: VAR contraindicated during pregnancy; after pregnancy (before discharge from health care facility), 1 dose VAR if previously received 1 dose varicella-containing vaccine, or dose 1 of 2 dose series VAR (dose 2: 4–8 weeks later) if previously did not receive any varicella-containing vaccine, regardless of whether U.S.-born before 1980
- Health care personnel with no evidence of immunity to varicella: 1 dose VAR if previously received 1 dose varicella-containing vaccine, or 2-dose series VAR 4–8 weeks apart if previously did not receive any varicella-containing vaccine, regardless of whether U.S.-born before 1980
- HIV infection with CD4 count <200 cells/μL: VAR contraindicated in HIV infection with CD4 count <200 cells/μL
- Severe immunocompromising conditions: VAR contraindicated

Zoster vaccination

Routine vaccination
- Age 50 years or older: 2-dose series ZV 2-6 months apart (minimum interval: 4 weeks; repeat dose if administered too soon) regardless of previous herpes zoster or previously received ZVL (administer ZRV at least 2 months after ZVL)
- Age 60 years or older: 2-dose series ZV 2-6 months apart (minimum interval: 4 weeks; repeat dose if administered too soon) or 1 dose ZVL if not previously vaccinated (if previously received ZVL, administer ZRV at least 2 months after ZVL); ZRV preferred over ZVL

Special situations
- Pregnancy: ZVL contraindicated; consider delaying ZRV until after pregnancy if ZRV indicated
- Severe immunocompromising conditions (including HIV infection with CD4 count <200 cells/μL): ZVL contraindicated; recommended use of ZRV under review
References and Links to Websites


5. U.S. Preventive Services Task Force. Screening for congenital hypothyroidism March 2008. The USPSTF is not updating the recommendation for screening for congenital hypothyroidism in newborns. It is deferring to the Health resources & Service Administration. Recommended Uniform Screening Panel(RUSP). Recommended Screening for hypothyroidism. Available at: https://www.hrsa.gov/advisory-committees/heritable-disorders/rusp/index.html

6. U.S. Preventive Services Task Force. Screening for sickle cell disease in newborns; September 2007. The USPSTF is not updating its recommendation for screening for sickle cell disease in newborns. It is deferring to the Health resources & Service Administration. Recommended Uniform Screening Panel(RUSP). Recommended Screening for sickle cell anemia. Available at: https://www.hrsa.gov/advisory-committees/heritable-disorders/rusp/index.html


8. Texas Department of State Health Services. All Texas newborns are screened for these disorders. Available at: https://www.dshs.texas.gov/newborn/screened_disorders.shtm. Accessed March 27, 2019. A list of the disorders for which Texas newborns are screened is provided.

9. Oklahoma State Department of Health. Newborn Screening. Accessed March 27, 2019. Available at: https://www.ok.gov/health/Community_Family_Health/Screening_Special_Services/Newborn_Screening_Program/. Every baby born in Oklahoma is required to have a blood test in the first week of life; a link is provided to the list of disorders included in the testing.

10. New Mexico Department of Health. New Mexico Department of Health Newborn Screening Program. Available at: https://nmhealth.org/about/phd/fhb/cms/nbgs/. Accessed March 01, 2019. The State of New Mexico mandates two Newborn Screens be collected on every Newborn born in New Mexico.


15. U.S. Preventive Services Task Force. Screening and supplementation for iron deficiency anemia May 2006. Available at: https://www.uspreventiveservicestaskforce.org/Page/Document/UpdateSummaryFinal/iron-deficiency-anemia-in-young-children-screening. Accessed August 20, 2019 USPSTF concludes that evidence is insufficient to recommend for or against routine screening for iron deficiency anemia in asymptomatic children aged 6 to 12 months but recommends routine iron supplementation for asymptomatic children aged 6 to 12 months who are at increased risk for iron deficiency anemia. This Recommendation is for informational purposes only since it is not an A or B recommendation.


age and are being evaluated for cardiovascular disease prevention should undergo 10-year atherosclerotic cardiovascular disease (ASCVD) risk estimation and have a clinician–patient risk discussion before starting on pharmacological therapy, such as antihypertensive therapy, a statin, or aspirin.


25. U.S. Preventive Services Task Force. Screening for cervical cancer August 2018. Available at: https://www.uspreventiveservicestaskforce.org/Page/Document/UpdateSummaryFinal/cervical-cancer-screening2. Accessed March 04, 2019. The USPSTF recommends screening for cervical cancer every 3 years with cervical cytology alone in women aged 21 to 29 years. For women aged 30 to 65 years, the USPSTF recommends screening every 3 years with cervical cytology alone, every 5 years with high-risk human papillomavirus (hrHPV) testing alone, or every 5 years with hrHPV testing in combination with cytology (cotesting).


- No screening for cervical cancer before 21 years of age.
- For women aged 21-29 years, cervical cytology alone is recommended every 3 years with HPV testing not recommended for screening in this age group.
- For women age 30-65 years, options include HPV and cytology “cotesting” every 5 years (preferred) or cytology alone every 3 years (acceptable). Screening by HPV testing alone is not recommended for most clinical settings.
- For women age >65 years, no screening is recommended following adequate negative prior screening and are not otherwise at high risk for cervical cancer.
- Women who have received HPV vaccine should be screened in the same manner as women who have not been vaccinated.

- Younger women should not be screened, with the exception of women who are infected with HIV. More frequent screening is appropriate for certain women, including those infected with HIV.
- Cervical cytology alone should be used for women aged 21 to 29 years, and screening should be performed every three years.
- Women younger than 30 years should not undergo co-testing.
- Cytology and human papillomavirus (HPV) co-testing every five years is preferred for women aged 30 to 65 years; cytology alone every three years is acceptable.
- Screening should be discontinued after age 65 years in women with adequate negative prior screening test results.
- Routine cytology and HPV testing should be discontinued and not restarted for women who have had a total hysterectomy and never had cervical intraepithelial neoplasia 2 or higher.
- Acceptable screening methods include liquid-based and conventional methods of cervical cytology collection.


Women should undergo regular screening mammography starting at age 45 y; women ages 45 to 54 y should be screened annually; women should have the opportunity to begin annual screening between ages 40 and 44 y. Women aged ≥55 y should transition to biennial screening or have the opportunity to continue screening annually; women should continue screening mammography as long as their overall health is good and they have a life expectancy of ≥10 y.

regarding specific benefits and harms. The USPSTF concluded that, the current evidence is insufficient to assess the additional benefits and harms of screening mammography in women 75 years or older. The USPSTF recommends against teaching breast self-examination (BSE) and concludes that the current evidence is insufficient to assess the additional benefits and harms of clinical breast examination (CBE) beyond screening mammography in women 40 years or older.


39. U.S. Preventive Service Task Force. Statin Use for the Primary Prevention of Cardiovascular Disease in Adults: Preventive Medication. Accessed August 15, 2019. U.S. Preventive Services Task Force. Available at: https://www.uspreventiveservicestaskforce.org/Page/Document/UpdateSummaryFinal/statin-use-in-adults-preventive-medicatin1. The USPSTF recommends that adults without a history of cardiovascular disease (CVD) (ie, symptomatic coronary artery disease or ischemic stroke) use a low- to moderate-dose statin for the prevention of CVD events and mortality when all of the following criteria are met: 1) they are aged 40 to 75 years; 2) they have 1 or more CVD risk factors (e.g., dyslipidemia, diabetes, hypertension, or smoking); and 3) they have a calculated 10-year risk of a cardiovascular event of 10% or greater. Identification of dyslipidemia and calculation of 10-year CVD event risk requires universal lipids screening in adults aged 40 to 75 years. See the “Clinical Considerations” section for more information on lipids screening and the assessment of cardiovascular risk.
40. American Diabetes Association. Standards of Medical Care in Diabetes 2019. Available at: https://professional.diabetes.org/content-page/practice-guidelines-resources. Accessed August 15, 2019. *In adults not taking statins, it is reasonable to obtain a lipid profile at the time of diabetes diagnosis, at an initial medical evaluation, and every 5 years thereafter, or more frequently if indicated.*


44. American Urological Association. Early detection of prostate cancer. Available at: https://www.auanet.org/guidelines/prostate-cancer-early-detection-guideline. Accessed March 11, 2019. *The AUA recommends against screening for prostate cancer in men under age 40 years, does not recommend routine screening in men age 40-54 years at average risk, and recommends shared decision making for men age 55-69 years that are considering PSA screening, and proceeding based on a man’s values and preferences. A routine screening interval of two years or more may be preferred over annual screening in those who have decided on screening. Routine PSA screening is not recommended in men over 70 years of age or in any man with less than a 10-15-year life expectancy.*


- Men and women, aged 45-75 y, for all tests listed
  - Fecal immunochemical test (annual), or high-sensitivity guaiac-based fecal occult blood test (annual), or multtarget stool DNA test (every 3 y, per manufacturer’s recommendation), or colonoscopy (every 10 y), or CT colonography (every 5 y), or flexible sigmoidoscopy (every 5 y)
  - Adults aged 45 y and older should undergo regular screening with either a high-sensitivity, stool-based test or a structural (visual) examination, depending on patient preference and test availability; as part of the screening process, all positive results on noncolonoscopy screening tests should be followed with timely colonoscopy; adults in good health with a life expectancy of greater than 10 y should continue screening through the age of 75 y.
- Men and women aged 76 through 85 y
decisions should be individualized based on patient preferences, life expectancy, health status, and prior screening history; if a decision is made to continue screening, the patient should be offered options as listed above.

- Men and women aged >85 y
  - Individuals should be discouraged from continuing screening

46. U.S. Preventive Services Task Force. Screening for colorectal cancer October 2008. Available at: https://www.uspreventiveservicestaskforce.org/Page/Document/UpdateSummaryFinal/colorectal-cancer-screening2. Accessed August 15, 2019. The USPSTF recommends screening for colorectal cancer starting at age 50 years and continuing until age 75 years. This is an update of the 2008 USPSTF recommendation. In 2008, the USPSTF recommended screening with colonoscopy every 10 years, annual FIT, annual high-sensitivity FOBT, or flexible sigmoidoscopy every 5 years combined with high-sensitivity FOBT every 3 years. In the current recommendation, instead of emphasizing specific screening approaches, the USPSTF has instead chosen to highlight that there is convincing evidence that colorectal cancer screening substantially reduces deaths from the disease among adults aged 50 to 75 years and that not enough adults in the United States are using this effective preventive intervention. The reasons for this gap between evidence and practice are multifaceted and will require sustained effort among clinicians, policy makers, advocates, and patients to overcome.


48. U.S. Preventive Services Task Force. Depression in Adults: Screening. Available at: https://www.uspreventiveservicestaskforce.org/Page/Document/UpdateSummaryFinal/depression-in-adults-screening1. The USPSTF recommends screening for depression in the general adult population, including pregnant and postpartum women. Screening should be implemented with adequate systems in place to ensure accurate diagnosis, effective treatment, and appropriate follow-up.

49. Advisory Committee on Immunization Practices. Recommended adult immunization schedule-United States. 2019. Available at: http://www.cdc.gov/vaccines/schedules/hcp/adult.html. The 2019 adult immunization schedule summarizes the immunizations recommended by the ACIP.

50. Centers for Disease Control and Prevention. Prevention and Control of Seasonal Influenza with Vaccines Recommendations of the Advisory Committee on Immunization Practices—United States, 2018-19 Influenza Season. Available at: https://www.cdc.gov/flu/professionals/acip/index.htm. Routine annual influenza vaccination is recommended for all persons aged ≥6 months who do not have contraindications. No preferential recommendation is made for one influenza vaccine product over another for persons for whom more than one licensed, recommended product is available.

51. U. S. Preventive Services Task Force. Aspirin Use to Prevent Cardiovascular Disease and Colorectal Cancer: Preventive Medication April 2016. Accessed March 11, 2019 http://www.uspreventiveservicestaskforce.org/Page/Document/UpdateSummaryFinal/aspirin-to-prevent-cardiovascular-disease-and-cancer. Adults aged 50 to 59 years with a ≥10% 10-year CVD risk: The USPSTF recommends initiating low-dose aspirin use for the primary prevention of cardiovascular disease (CVD) and colorectal cancer (CRC) in adults aged 50 to 59 years who have a 10% or greater 10-year CVD risk, are not at increased risk for bleeding, have a life expectancy of at least 10 years, and are willing to take low-dose aspirin daily for at least 10 years.

medication Accessed March 11, 2019. USPSTF recommends that all women planning or capable of pregnancy take a daily supplement containing 0.4 to 0.8 (400 to 800 µg) of folic acid.

53. U.S. Preventive Services Task Force. Medications for risk reduction of primary breast cancer in women, September 2013. Available at: https://www.uspreventiveservicestaskforce.org/Page/Document/UpdateSummaryFinal/breast-cancer-medications-for-risk-reduction. Accessed August 15, 2019. The USPSTF recommends that clinicians engage in shared, informed decision making with women who are at increased risk for breast cancer about medications to reduce their risk. For women who are at increased risk for breast cancer and at low risk for adverse medication effects, clinicians should offer to prescribe risk-reducing medications.

54. U.S. Preventive Services Task Force: Abnormal Blood Glucose and Type 2 Diabetes Mellitus: Screening. Adults aged 40 to 70 years who are overweight or obese: http://www.uspreventiveservicestaskforce.org/Page/Document/UpdateSummaryFinal/screening-for-abnormal-blood-glucose-and-type-2-diabetes. Accessed March 11, 2019. The USPSTF recommends screening for abnormal blood glucose as part of cardiovascular risk assessment in adults aged 40 to 70 years who are overweight or obese. Clinicians should offer or refer patients with abnormal blood glucose to intensive behavioral counseling interventions to promote a healthful diet and physical activity.

55. American Diabetes Association. Standards of medical care in Diabetes 2019. Available at: http://care.diabetesjournals.org/content/42/Supplement_1. © 2019 by the American Diabetes Association. Accessed March 11, 2019. Testing should be considered in all adults who are overweight (BMI≥25 kg² or ≥23 kg/m² in Asian Americans) and who have one or more additional risk factors:

**Prevention or Delay of Type 2 Diabetes**
- Test all adults, beginning at age 45, regardless of weight.
- Test asymptomatic adults of any age who are overweight, are obese, or have one or more additional risk factors for diabetes.
- Consider metformin therapy to prevent type 2 diabetes for:
  - Prediabetes;
  - BMI > 35 kg/m²;
  - Age < 60 years;
  - Women who have had gestational diabetes.
- Refer patients with prediabetes to a program of intensive diet and physical activity with a behavioral counseling component:
  - Target 7% body weight loss;
  - Encourage at least 150 minutes/week of moderate-intensity physical activity;
  - Offer follow-up, including counseling, diabetes self-management education, and ongoing support.


60. U.S. Preventive Services Task Force. Osteoporosis to Prevent Fractures: Screening Osteoporosis to Prevent Fractures: Screening. Available at: https://www.uspreventiveservicestaskforce.org/Page/Document/UpdateSummaryFinal/osteoporosis-screening1. Accessed March 11, 2019. The USPSTF recommends screening for osteoporosis with bone measurement testing to prevent osteoporotic fractures in women 65 years and older. The USPSTF recommends screening for osteoporosis with bone measurement testing to prevent osteoporotic fractures in postmenopausal women younger than 65 years who are at increased risk of osteoporosis, as determined by a formal clinical risk assessment tool.


68. U.S. Preventive Services Task Force. Screening for hepatitis B virus infection in nonpregnant adolescents and adults. Available at: Screening for Hepatitis B Virus Infection in Nonpregnant Adolescents and Adults May 2014. Available at:
69. U.S. Preventive Services Task Force. Screening for Lung Cancer December 2013. Available at https://www.uspreventiveservicestaskforce.org/Page/Document/UpdateSummaryFinal/lung-cancer-screening. Accessed August 15, 2019. The USPSTF recommends annual screening for lung cancer with low-dose computed tomography in adults ages 55 to 80 years who have a 30 pack-year smoking history and currently smoke or have quit within the past 15 years. Screening should be discontinued once a person has not smoked for 15 years or develops a health problem that substantially limits life expectancy or the ability or willingness to have curative lung surgery.

70. American Heart Association. American College of Cardiology/American Heart Association Task Force on Practice 2013 ACC/AHA Guideline on the Assessment of Cardiovascular Risk: A report of The American College of Cardiology/American Heart Association task force on practice guidelines. Available at: https://www.ahajournals.org/doi/abs/10.1161/01.cir.0000437741.48606.98. Accessed April 23, 2019 The AHA recommends it is reasonable to assess traditional ASCVD risk factors every 4 to 6 years in adults 20 to 79 year of age who are free from ASCVD and estimate 10-year ASCVD risk every 4 to 6 years in adults 40 to 79 years of age who are free from ASCVD. The race- and sex-specific Pooled Cohort Equations to predict 10-year risk for a first hard ASCVD* event should be used in non-Hispanic African Americans and non-Hispanic Whites, 40 to 79 years of age.


73. ACO Committee Opinion. Available at: https://www.acog.org/Clinical-Guidance-and-Publications/Committee-Opinions/Committee-on-Obstetric-Practice/Optimizing-Postpartum-Care. A recent update to the ACOG recommendation on Postpartum care. Accessed June 06, 2019. It is recommended that all women have contact with their obstetrician–gynecologists or other obstetric care providers within the first 3 weeks postpartum. This initial assessment should be followed up with ongoing care as needed, concluding with a comprehensive postpartum visit no later than 12 weeks after birth. The comprehensive postpartum visit should include a full assessment of physical, social, and psychological well-being, including the following domains: mood and emotional well-being; infant care and feeding; sexuality, contraception, and birth spacing; sleep and fatigue; physical recovery from birth; chronic disease management; and health maintenance. Women with chronic medical conditions such as hypertensive disorders, obesity, diabetes, thyroid disorders, renal disease, and mood disorders should be counseled regarding the importance of timely follow-up with their obstetrician–gynecologists or primary care providers for ongoing coordination of care (it was decided not to make this update until 2019)
