Table 1: Recommended Adult Immunization Schedule by Age Group, United States, 2020

<table>
<thead>
<tr>
<th>Vaccine</th>
<th>19–26 years</th>
<th>27–49 years</th>
<th>50–64 years</th>
<th>≥65 years</th>
</tr>
</thead>
<tbody>
<tr>
<td>Influenza inactivated (IIV) or</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Influenza recombinant (RIV)</td>
<td></td>
<td></td>
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<tr>
<td>or</td>
<td></td>
<td></td>
<td>1 dose annually</td>
<td></td>
</tr>
<tr>
<td>Influenza live, attenuated (LAIV)</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>or</td>
<td></td>
<td></td>
<td>1 dose annually</td>
<td></td>
</tr>
<tr>
<td>Tetanus, diphtheria, pertussis</td>
<td></td>
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<td></td>
<td></td>
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<tr>
<td>(Td or Td)</td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>1 dose Tdap, then Td or Tdap booster</td>
<td></td>
<td></td>
<td></td>
<td>every 10 years</td>
</tr>
<tr>
<td>Measles, mumps, rubella (MMR)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1 or 2 doses depending on indication</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(if born in 1957 or later)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Varicella (VAR)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2 doses (if born in 1980 or later)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Varicella recombinant (RZV) (preferred)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>or</td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Varicella live (ZVL)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2 doses</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Human papillomavirus (HPV)</td>
<td>2 doses</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2 or 3 doses depending on age at</td>
<td>(if born in 1980 or later)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>initial vaccination or condition</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Pneumococcal conjugate (PCV13)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1 dose</td>
<td></td>
<td></td>
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<td></td>
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<tr>
<td>Pneumococcal polysaccharide (PPSV23)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1 or 2 doses depending on indication</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hepatitis A (HepA)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2 or 3 doses depending on vaccine</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hepatitis B (HepB)</td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>2 or 3 doses depending on vaccine</td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Meningococcal A, C, W, Y (MenACWY)</td>
<td></td>
<td></td>
<td>1 or 2 doses depending on indication, see notes for booster recommendations</td>
<td></td>
</tr>
<tr>
<td>Meningococcal B (MenB)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2 or 3 doses depending on vaccine and indication, see notes for booster recommendations</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Haemophilus influenzae type b (Hib)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1 or 3 doses depending on indication</td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>

- **Recommended vaccination for adults who meet age requirement, lack documentation of vaccination, or lack evidence of past infection**
- **Recommended vaccination for adults with an additional risk factor or another indication**
- **Recommended vaccination based on shared clinical decision-making**
- **No recommendation/Not applicable**
### Table 2: Recommended Adult Immunization Schedule by Medical Condition and Other Indications, United States, 2020

<table>
<thead>
<tr>
<th>Vaccine</th>
<th>Pregnancy</th>
<th>Immuno-compromised (excluding HIV infection)</th>
<th>HIV infection CD4 count</th>
<th>Asplenia, complement deficiencies</th>
<th>End-stage renal disease; or on hemodialysis</th>
<th>Heart or lung disease, alcoholism&lt;sup&gt;1&lt;/sup&gt;</th>
<th>Chronic liver disease</th>
<th>Diabetes</th>
<th>Health care personnel&lt;sup&gt;2&lt;/sup&gt;</th>
<th>Men who have sex with men</th>
</tr>
</thead>
<tbody>
<tr>
<td>IIV or RIV</td>
<td></td>
<td></td>
<td>≥200</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>LAIV</td>
<td>NOT RECOMMENDED</td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
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<tr>
<td>Tdap or Td</td>
<td>1 dose Tdap each pregnancy</td>
<td>1 dose Tdap, then Td or Tdap booster every 10 years</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>MMR</td>
<td>NOT RECOMMENDED</td>
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<tr>
<td>VAR</td>
<td>NOT RECOMMENDED</td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>RZV (preferred)</td>
<td>DELAY</td>
<td>2 doses at age ≥50 years</td>
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<td></td>
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<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>ZVL</td>
<td>NOT RECOMMENDED</td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>HPV</td>
<td>DELAY</td>
<td>3 doses through age 26 years</td>
<td>2 or 3 doses through age 26 years</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>PCV13</td>
<td>1 dose</td>
<td></td>
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<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PPSV23</td>
<td></td>
<td>1, 2, or 3 doses depending on age and indication</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>HepA</td>
<td></td>
<td>2 or 3 doses depending on vaccine</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>HepB</td>
<td></td>
<td>2 or 3 doses depending on vaccine</td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MenACWY</td>
<td></td>
<td>1 or 2 doses depending on indication, see notes for booster recommendations</td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MenB</td>
<td>PRECAUTION</td>
<td>2 or 3 doses depending on vaccine and indication, see notes for booster recommendations</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hib</td>
<td></td>
<td>3 doses HSCT&lt;sup&gt;3&lt;/sup&gt; recipients only</td>
<td>1 dose</td>
<td></td>
<td></td>
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<td></td>
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<td></td>
</tr>
</tbody>
</table>

1. Precaution for LAIV does not apply to alcoholism. 2. See notes for influenza; hepatitis B; measles, mumps, and rubella; and varicella vaccinations. 3. Hematopoietic stem cell transplant.
Chronic liver disease
- Work with hepatitis A virus
- Persons experiencing homelessness
- HIV infection
- Close, personal contact with international adoptee
- Men who have sex with men
- Injection or noninjection drug use

Recommended Adult Immunization Schedule, United States, 2020

Haemophilus influenzae type b vaccination

Special situations
- Anatomical or functional asplenia (including sickle cell disease): 1 dose if previously did not receive Hib; if elective splenectomy, 1 dose, preferably at least 14 days before spleenectomy
- Hematopoietic stem cell transplant (HSCT): 3-dose series 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-Hept B (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 or 3-dose series HepA-Hept B as above
- Chronic liver disease (e.g., persons with hepatitis B, hepatitis C, cirrhosis, fatty liver disease, alcoholic liver disease, autoimmune hepatitis, alamine aminotransferase [ALT] or aspartate aminotransferase [AST] level greater than twice the upper limit of normal)
- HIV infection
- Men who have sex with men
- Injection or noninjection drug use
- Persons experiencing homelessness
- Work with hepatitis A virus in research laboratory or with 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 or 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)
- Pregnancy if at risk for infection or severe outcome from infection during pregnancy

Settings for exposure, including
- Health care settings targeting services to injection or noninjection drug users or group homes and nonresidential day care facilities for developmentally disabled persons (individual risk factor screening not required)

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 (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 3/6 weeks between doses 1 and 3)
- Chronic liver disease (e.g., persons with hepatitis C, cirrhosis, fatty liver disease, alcoholic liver disease, autoimmune hepatitis, alamine aminotransferase [ALT] or aspartate aminotransferase [AST] level greater than twice upper limit of normal)
- HIV infection
- Men who have sex with men
- Injection or noninjection drug use
- Persons experiencing homelessness
- Work with hepatitis A virus in research laboratory or with 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 or 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)
- Pregnancy if at risk for infection or severe outcome from infection during pregnancy

Shared clinical decision-making
- Age 27 through 45 years based on shared clinical decision-making: 2- or 3-dose series as above

Special situations
- Pregnancy through age 26 years: HPV vaccination is not recommended until after pregnancy; no intervention needed if vaccinated while pregnant; pregnancy testing not needed before vaccination

Human papillomavirus vaccination

Routine vaccination
- HPV vaccination recommended for all adults through age 26 years: 2- or 3-dose series depending on age at initial vaccination or condition:
- Age 15 years or older at initial vaccination: 3-dose series 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
- 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

Shared clinical decision-making
- Age 27 through 45 years based on shared clinical decision-making:
  - 2- or 3-dose series as above

Special situations
- Pregnancy through age 26 years: HPV vaccination is not recommended until after pregnancy; no intervention needed if vaccinated while pregnant; pregnancy testing not needed before vaccination

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
- Pregnancy if at risk for infection or severe outcome from infection during pregnancy (Heplisav-B not currently recommended due to lack of safety data in pregnant women)
# Recommended Adult Immunization Schedule, United States, 2020

## Influenza vaccination

### Routine vaccination
- **Persons age 6 months or older:** 1 dose any influenza vaccine 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 any influenza vaccine appropriate for age and health status annually
- **Egg allergy more severe than hives** (e.g., angioedema, respiratory distress): 1 dose 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 reactions
- **LAIV should not be used** in persons with the following conditions or situations:
  - History of severe allergic reaction to any vaccine component (excluding egg) or to a previous dose of any influenza vaccine
  - Immunocompromised due to any cause (including medications and HIV infection)
  - Anatomic or functional asplenia
  - Cochlear implant
  - Cerebrospinal fluid-oropharyngeal communication
  - Close contacts or caregivers of severely immunosuppressed persons who require a protected environment
  - Pregnancy
  - Received influenza antiviral medications within the previous 48 hours
- **History of Guillain-Barré syndrome within 6 weeks of previous dose of influenza vaccine:** Generally should not be vaccinated unless vaccination benefits outweigh risks for those at higher risk for severe complications from influenza

## Measles, mumps, and rubella vaccination

### Routine vaccination
- **No evidence of immunity to measles, mumps, or rubella:** 1 dose
- **Evidence of immunity:** Born before 1957 (health care personnel, see below), documentation of receipt of MMR vaccine, 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
- **Nonpregnant women of childbearing age with no evidence of immunity to rubella:** 1 dose
- **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 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:** 2-dose series at least 4 weeks apart if previously did not receive any doses of MMR or 1 dose if previously received 1 dose MMR
- **Health care personnel:** Born in 1957 or later with no evidence of immunity to measles, mumps, or rubella: 2-dose series at least 4 weeks apart for measles or mumps or at least 1 dose for rubella

## Meningococcal vaccination

### Special situations for MenACWY
- **Anatomical or functional asplenia** (including sickle cell disease), HIV infection, persistent complement component deficiency, complement inhibitor (e.g., eculizumab, ravulizumab) use: 2-dose series MenACWY (Menactra, Menveo) at least 8 weeks apart and revaccinate every 5 years if risk remains
- **Travel in countries with hyperendemic or epidemic meningococcal disease, microbiologists routinely exposed to Neisseria meningitidis:** 1 dose MenACWY (Menactra, Menveo) 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 (Menactra, Menveo)

### Shared clinical decision-making for MenB
- **Adolescents and young adults age 16 through 23 years** (age 16 through 18 years preferred) not at increased risk for meningococcal disease: Based on shared clinical decision-making, 2-dose series MenB-4C at least 1 month apart or 2-dose series MenB-FHbp at 0, 6 months (if dose 2 was administered less than 6 months after dose 1, administer dose 3 at least 4 months after dose 2); MenB-4C and MenB-FHbp are not interchangeable (use same product for all doses in series)

### Special situations for MenB
- **Anatomical or functional asplenia** (including sickle cell disease), persistent complement component deficiency, complement inhibitor (e.g., eculizumab, ravulizumab) use, microbiologists routinely exposed to Neisseria meningitidis: 2-dose primary series MenB-4C (Bexsero) at least 1 month apart or 3-dose primary series MenB-FHbp (Trumenba) at 0, 1–2, 6 months (if dose 2 was administered less than 6 months after dose 1, dose 3 not needed); MenB-4C and MenB-FHbp are not interchangeable (use same product for all doses in series); 1 dose MenB booster 1 year after primary series and revaccinate every 2–3 years if risk remains
- **Pregnancy:** Delay MenB until after pregnancy unless at increased risk and vaccination benefits outweigh potential risks
Recommended Adult Immunization Schedule, United States, 2020

Pneumococcal vaccination

Routine vaccination
- Age 65 years or older (immunocompetent—see www.cdc.gov/mmwr/volumes/68/wr/mm6846a5.htm?__cid=mm6846a5_w): 1 dose PPSV23
- If PPSV23 was administered prior to age 65 years, administer 1 dose PPSV23 at least 5 years after previous dose

Shared clinical decision-making
- Age 65 years and older (immunocompetent): 1 dose PCV13 based on shared clinical decision-making
  - If both PCV13 and PPSV23 are to be administered, PCV13 should be administered first
  - PCV13 and PPSV23 should be administered at least 1 year apart
  - PCV13 and PPSV23 should not be administered during the same visit

Special situations
(see www.cdc.gov/mmwr/volumes/68/wr/mm6846a5. htm?__cid=mm6846a5_w)
- 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 or Tdap every 10 years

Special situations
- Previously did not receive primary vaccination series for tetanus, diphtheria, or pertussis: At least 1 dose Tdap followed by 1 dose Td or Tdap at least 4 weeks after Tdap and another dose Td or Tdap 6–12 months after last Td or Tdap (Tdap can be substituted for any Td dose, but preferred as first dose); Td or Tdap 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 Td or Tdap as tetanus prophylaxis in wound management, see www.cdc.gov/mmwr/volumes/67/rr/rr6702a1.htm

Varicella vaccination

Routine vaccination
- No evidence of immunity to varicella: 2-dose series 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 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

Varicella vaccination

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

Special situations
- Pregnancy: ZVL contraindicated; consider delaying RZV until after pregnancy if ZRL is otherwise indicated
- Severe immunocompromising conditions (including HIV infection with CD4 count <200 cells/μL): ZVL contraindicated; recommended use of RZV under review

Zoster vaccination

Routine vaccination
- Age 70 years or older: 2-dose series RZV (Shingrix) 2–6 months apart (minimum interval: 4 weeks; repeat dose if administered too soon), regardless of previous herpes zoster or history of ZVL (Zostavax) vaccination (administer RZV at least 2 months after ZVL)
- Age 60 years or older: 2-dose series RZV 2–6 months apart (minimum interval: 4 weeks; repeat if administered too soon) or 1 dose ZVL if not previously vaccinated. RZV preferred over ZVL (if previously received ZVL, administer RZV at least 2 months after ZVL)
- Age 50 years or older: 2-dose series RZV 2–6 months apart (minimum interval: 4 weeks; repeat if administered too soon) or 1 dose ZVL if not previously vaccinated. RZV preferred over ZVL (if previously received ZVL, administer RZV at least 2 months after ZVL)