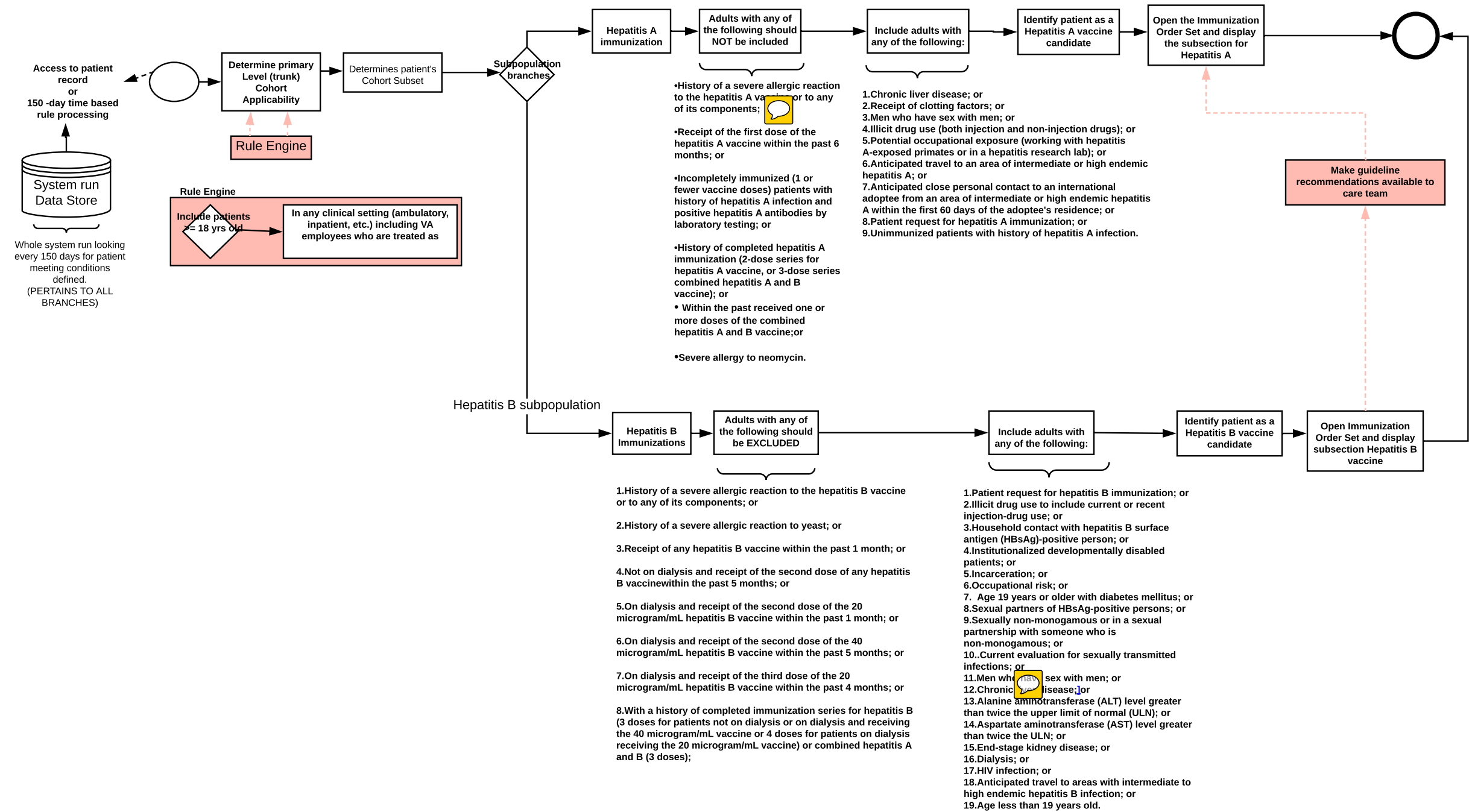
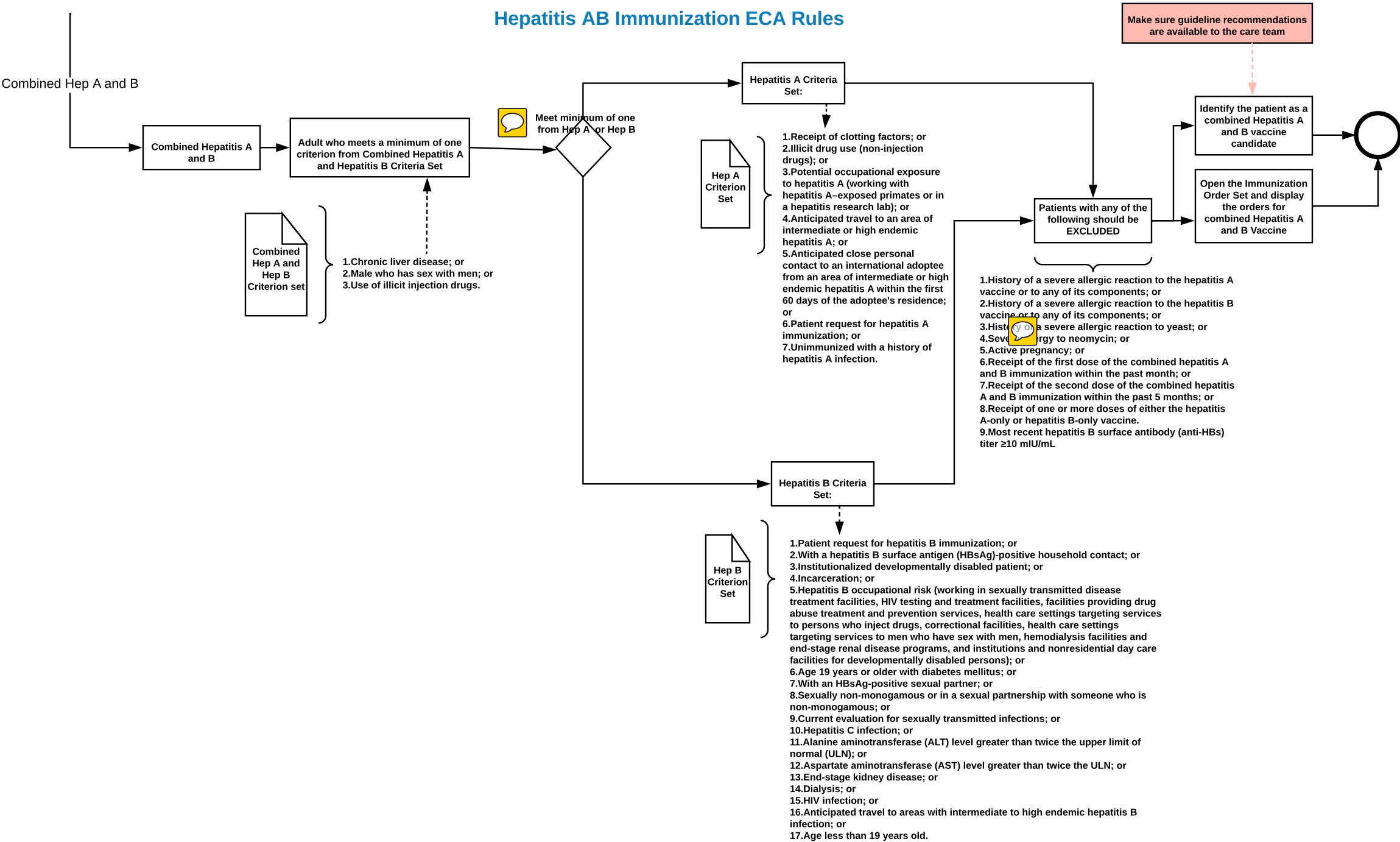


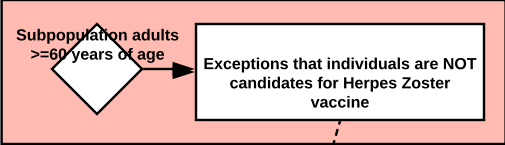
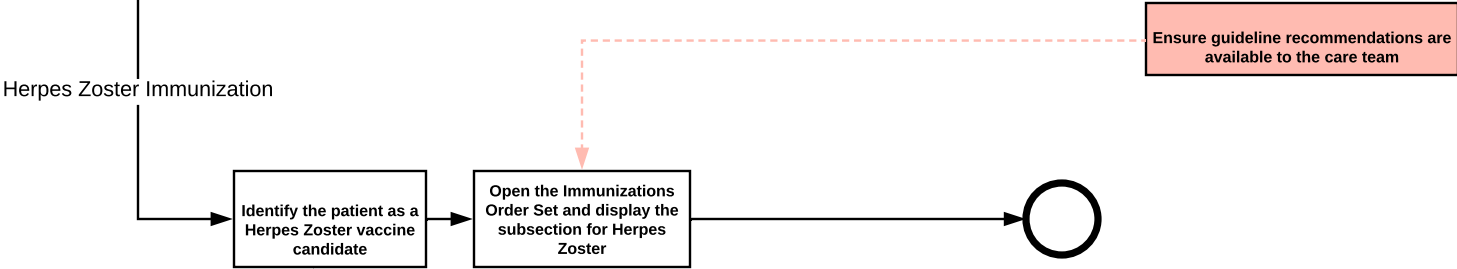
Immunizations: Hepatitis A, B



Hepatitis AB Immunization ECA Rules



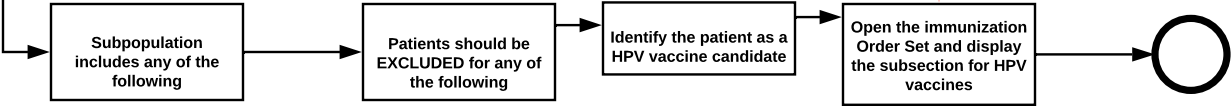
# HERPES ZOSTER (Shingles) IMMUNIZATION



- 1.Active pregnancy; or  
2.Leukemia, lymphomas or other malignant neoplasms affecting the bone marrow or lymphatic system but excluding leukemia in remission providing at least 3 months have passed since last chemotherapy or radiation therapy.  
3.Present receipt of chemotherapy; or  
4.Clinical or laboratory evidence of other unspecified cellular immunodeficiency; or  
5.Active use of immunosuppressive medications with an anticipated duration of at least two weeks; or  
[Technical Note: High-dose steroids ( $\geq 20$  mg/day of prednisone or equivalent) should be considered immunosuppressive medications.]  
6.Completion of a 2-week or longer course of immunosuppressive medications within the past 1 month; or  
7.HIV infection with the most recent CD4+ T-lymphocyte count of less than 200 cells/microliter or less than 15% of total lymphocytes; or  
8.History of a severe allergic reaction to the shingles vaccine or to any of its components; or  
9.History of a severe allergic reaction to neomycin or gelatin; or  
10.Prior receipt of the shingles vaccine; or  
11.Use of acyclovir, famciclovir, or valacyclovir in the 24 hours prior to vaccination; or  
12.Persons receiving the recombinant human immune mediators and immune modulators (such as antitumor necrosis factor ("anti-TNF") agents, such as adalimumab, infliximab, etanercept and certolizumab pegol); or  
13.Persons undergoing hematopoietic stem cell transplantation.

# Human Papillomavirus (HPV) Immunization

HPV Immunization

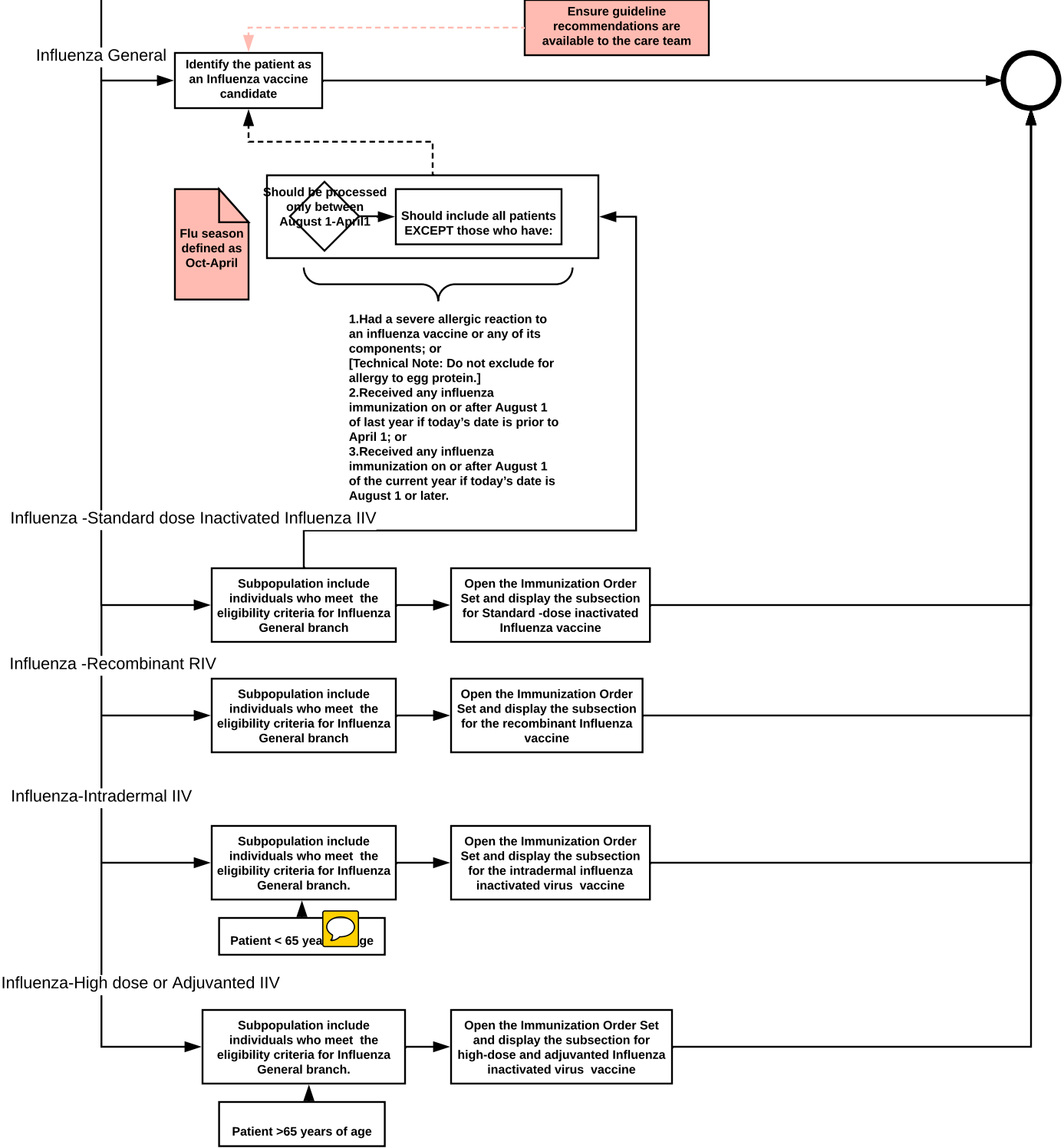


1. Adult women aged  $\leq 26$  years; or  
2. Adult men aged  $\leq 21$  years; or  
3. Adult men aged  $\leq 26$  years who have had any of the following:  
a) HIV infection; or  
b) Sex with other men; or  
c) B-lymphocyte antibody deficiency; or  
d) Complete or partial T-lymphocyte defect; or  
e) Active malignancy; or  
f) Prior transplantation; or  
g) Active autoimmune disease; or  
4. Current immunosuppressive therapy.

1. Active pregnancy; or  
2. Prior receipt of two doses of the human papillomavirus (HPV) vaccine at least 5 months apart where the first dose was administered before age the 15th birthday; or  
3. Prior receipt of three doses of the HPV vaccine where the first dose was administered before the 15th birthday, the second dose was administered less than 5 months after the first dose, and the third dose was administered at least 12 weeks after the second dose; or  
4. Receipt of the first dose of the HPV vaccine within the past 1 month; or  
5. Receipt of two doses of the HPV vaccine where the first dose was administered less 5 months ago or the second dose was administered less than 4 months ago; or  
6. Receipt of the complete 3-dose series of the HPV vaccine where the first dose was administered after the 15th birthday; or  
7. Severe allergic reaction to the HPV vaccine or any of its components; or  
8. History of immediate hypersensitivity to yeast.

Ensure guideline recommendations are available to the care team

# Influenza Immunizations



# Meningococcal Immunizations

Immunization-General

Include all adults

Patients should be EXCLUDED for

Use in pregnancy only if clearly needed

•History of severe allergic reaction to meningococcal vaccines or any of their components.

Ensure guideline recommendations are available to the care team

Immunizations Serogroups A,C,W, and Y Conjugate vaccine (Men ACWY) Series and Boosters

Subpopulation include individuals who meet the eligibility criteria for Meningococcal -General branch

Identify patient as a serogroups A,C,W and Y meningococcal conjugate vaccine candidate

Open Immunization Order Set and display the subsection for serogroups A,C,W, and Y

Indications

- 1.Anatomic or functional asplenia; or
- 2.Persistent complement component deficiencies (for example, C5-9, properdin, factor H, or factor D deficiencies); or
- 3.Patient is going to start treatment with the drug eculizumab (Soliris) or currently is taking eculizumab; or
- 4.HIV infection.

EXCLUDE patients for any of the following

- 1.Completed a primary MenACWY immunization (2-dose) series within the prior 5 years; or
- 2.Were revaccinated with the MenACWY within 5 years; or
- 3.Received the first dose of a 2-dose primary series of MenACWY within the prior 2 months; or
- 4.Severe allergy to vaccines containing CRM197 or diphtheria toxoid.

Immunizations Serogroups A,C,W, and Y Conjugate vaccine (Men ACWY) and Boosters

Sub-branch of Meningococcal Immunizations-General branch

Identify patient as a serogroups A,C,W and Y meningococcal conjugate vaccine candidate

1.Microbiologist with ongoing exposure to Neisseria meningitidis as an occupation; or

2.Anticipation of international travel to or residence in areas with hyperendemic or epidemic meningococcal disease; or

3.Ongoing international travel to or residence in areas with hyperendemic or epidemic meningococcal disease; or

4.Current active military recruit.

EXCLUDE patients for any of the following

- 1.Received a MenACWY immunization vaccination or booster within the past 5 years; or
- 2.Severe allergy to vaccines containing CRM197 or diphtheria toxoid.

# Meningococcal Immunizations

Immunization-General

Include all adults

Patients should be EXCLUDED for

Use in pregnancy only if clearly needed

•History of severe allergic reaction to meningococcal vaccines or any of their components.

Ensure guideline recommendations are available to the care team

Immunizations Serogroups A,C,W, and Y Conjugate vaccine (Men ACWY) Series and Boosters

Subpopulation include individuals who meet the eligibility criteria for Meningococcal -General branch

Identify patient as a serogroups A,C,W and Y meningococcal conjugate vaccine candidate

Open Immunization Order Set and display the subsection for serogroups A,C,W, and Y

Indications

- 1.Anatomic or functional asplenia; or
- 2.Persistent complement component deficiencies (for example, C5-9, properdin, factor H, or factor D deficiencies); or
- 3.Patient is going to start treatment with the drug eculizumab (Soliris) or currently is taking eculizumab; or
- 4.HIV infection.

EXCLUDE patients for any of the following

- 1.Completed a primary MenACWY immunization (2-dose) series within the prior 5 years; or
- 2.Were revaccinated with the MenACWY within 5 years; or
- 3.Received the first dose of a 2-dose primary series of MenACWY within the prior 2 months; or
- 4.Severe allergy to vaccines containing CRM197 or diphtheria toxoid.

Immunizations Serogroups A,C,W, and Y Conjugate vaccine (Men ACWY) and Boosters

Sub-branch of Meningococcal Immunizations-General branch

Identify patient as a serogroups A,C,W and Y meningococcal conjugate vaccine candidate

1.Microbiologist with ongoing exposure to Neisseria meningitidis as an occupation; or

2.Anticipation of international travel to or residence in areas with hyperendemic or epidemic meningococcal disease; or

3.Ongoing international travel to or residence in areas with hyperendemic or epidemic meningococcal disease; or

4.Current active military recruit.

EXCLUDE patients for any of the following

- 1.Received a MenACWY immunization vaccination or booster within the past 5 years; or
- 2.Severe allergy to vaccines containing CRM197 or diphtheria toxoid.

# Meningococcal Immunizations

Immunization-General

Include all adults

Patients should be EXCLUDED for

Use in pregnancy only if clearly needed

•History of severe allergic reaction to meningococcal vaccines or any of their components.

Ensure guideline recommendations are available to the care team

Immunizations Serogroups A,C,W, and Y Conjugate vaccine (Men ACWY) Series and Boosters

Subpopulation include individuals who meet the eligibility criteria for Meningococcal -General branch

Identify patient as a serogroups A,C,W and Y meningococcal conjugate vaccine candidate

Open Immunization Order Set and display the subsection for serogroups A,C,W, and Y

Indications

- 1.Anatomic or functional asplenia; or
- 2.Persistent complement component deficiencies (for example, C5-9, properdin, factor H, or factor D deficiencies); or
- 3.Patient is going to start treatment with the drug eculizumab (Soliris) or currently is taking eculizumab; or
- 4.HIV infection.

EXCLUDE patients for any of the following

- 1.Completed a primary MenACWY immunization (2-dose) series within the prior 5 years; or
- 2.Were revaccinated with the MenACWY within 5 years; or
- 3.Received the first dose of a 2-dose primary series of MenACWY within the prior 2 months; or
- 4.Severe allergy to vaccines containing CRM197 or diphtheria toxoid.

Immunizations Serogroups A,C,W, and Y Conjugate vaccine (Men ACWY) and Boosters

Sub-branch of Meningococcal Immunizations-General branch

Identify patient as a serogroups A,C,W and Y meningococcal conjugate vaccine candidate

1.Microbiologist with ongoing exposure to Neisseria meningitidis as an occupation; or

2.Anticipation of international travel to or residence in areas with hyperendemic or epidemic meningococcal disease; or

3.Ongoing international travel to or residence in areas with hyperendemic or epidemic meningococcal disease; or

4.Current active military recruit.

EXCLUDE patients for any of the following

- 1.Received a MenACWY immunization vaccination or booster within the past 5 years; or
- 2.Severe allergy to vaccines containing CRM197 or diphtheria toxoid.

# Meningococcal Immunizations

Immunization-General

Include all adults

Patients should be EXCLUDED for

Use in pregnancy only if clearly needed

•History of severe allergic reaction to meningococcal vaccines or any of their components.

Ensure guideline recommendations are available to the care team

Immunizations Serogroups A,C,W, and Y Conjugate vaccine (Men ACWY) Series and Boosters

Subpopulation include individuals who meet the eligibility criteria for Meningococcal -General branch

Identify patient as a serogroups A,C,W and Y meningococcal conjugate vaccine candidate

Open Immunization Order Set and display the subsection for serogroups A,C,W, and Y

Indications

- 1.Anatomic or functional asplenia; or
- 2.Persistent complement component deficiencies (for example, C5-9, properdin, factor H, or factor D deficiencies); or
- 3.Patient is going to start treatment with the drug eculizumab (Soliris) or currently is taking eculizumab; or
- 4.HIV infection.

EXCLUDE patients for any of the following

- 1.Completed a primary MenACWY immunization (2-dose) series within the prior 5 years; or
- 2.Were revaccinated with the MenACWY within 5 years; or
- 3.Received the first dose of a 2-dose primary series of MenACWY within the prior 2 months; or
- 4.Severe allergy to vaccines containing CRM197 or diphtheria toxoid.

Immunizations Serogroups A,C,W, and Y Conjugate vaccine (Men ACWY) and Boosters

Sub-branch of Meningococcal Immunizations-General branch

Identify patient as a serogroups A,C,W and Y meningococcal conjugate vaccine candidate

1.Microbiologist with ongoing exposure to Neisseria meningitidis as an occupation; or

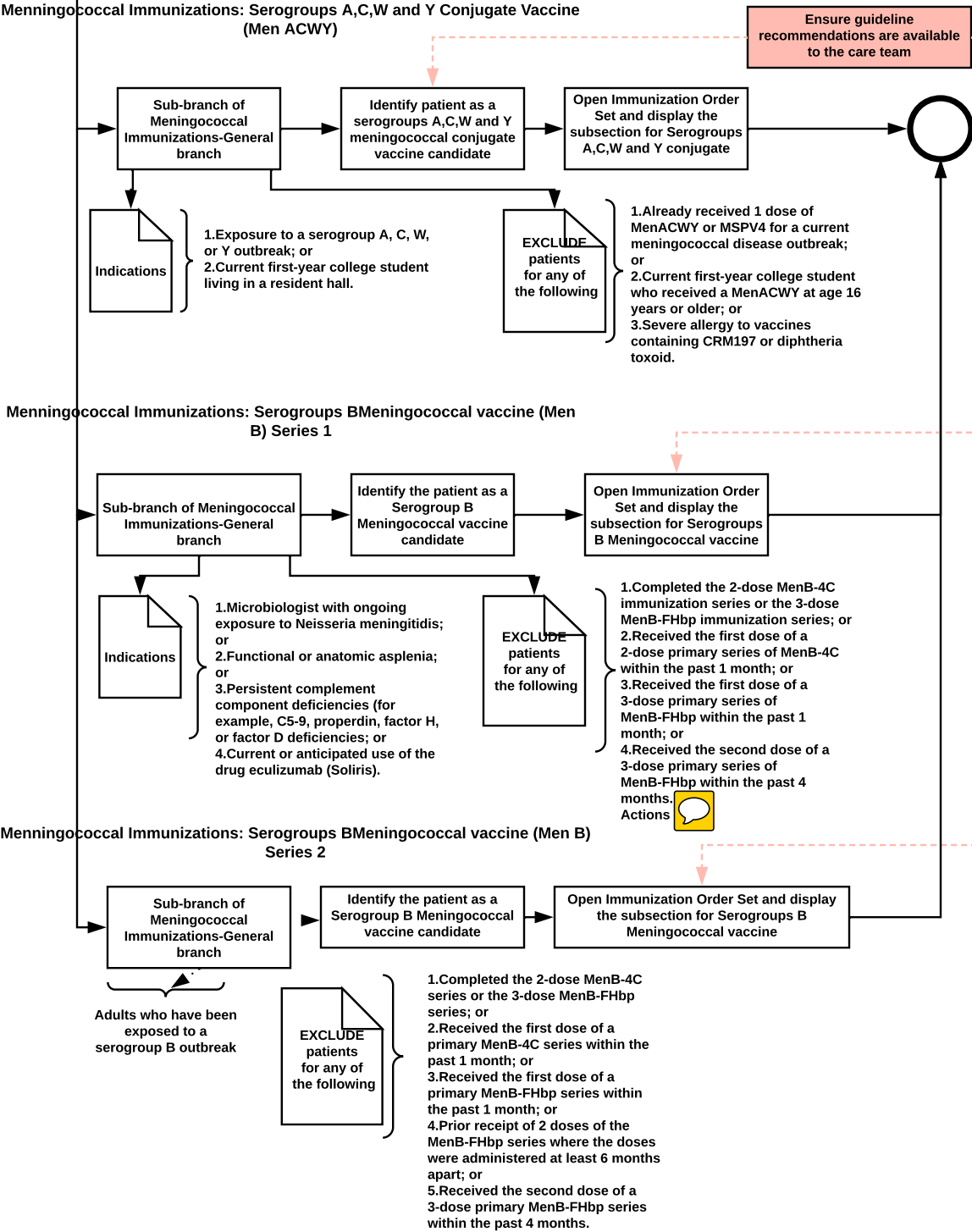
2.Anticipation of international travel to or residence in areas with hyperendemic or epidemic meningococcal disease; or

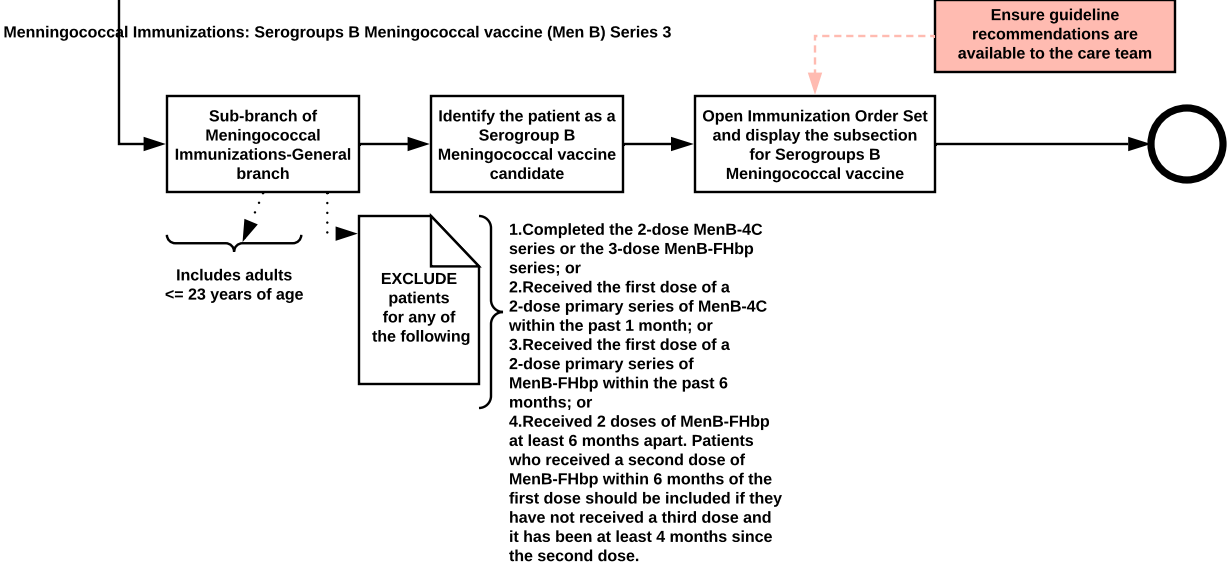
3.Ongoing international travel to or residence in areas with hyperendemic or epidemic meningococcal disease; or

4.Current active military recruit.

EXCLUDE patients for any of the following

- 1.Received a MenACWY immunization vaccination or booster within the past 5 years; or
- 2.Severe allergy to vaccines containing CRM197 or diphtheria toxoid.







Measles, Mumps, and Rubella (MMR) Immunizations-General

The subpopulation includes all adults except those who:

- 1.Are currently pregnant; or
- 2.Have an HIV infection and a CD4+ T-lymphocyte count < 200 cells/microliter or a CD4+ T-lymphocyte percentage less than 15% within 6 months; or
- 3.Have had an anaphylactoid or anaphylactic reaction to neomycin; or
- 4.Actively taking immunosuppressive medications with an anticipated duration of at least two weeks; or [Technical Note: High-dose steroids (>= 20 mg/day of prednisone or equivalent) should be considered immunosuppressive medications.]
- 5.Have completed a 2-week or longer course of immunosuppressive medications within the past 1 month; or
- 6.Have primary or acquired immunodeficiency; or
- 7.Have a malignant condition of the bone marrow or lymphatic system; or
- 8.Are on systemic immunosuppressive therapy; or
- 9.Have cellular immunodeficiency; or
- 10.Have received blood products containing antibodies within the past 11 months; or
- 11.Have a history of a severe allergic reaction to the MMR vaccine or to any of its components; or
- 12.Have a history of an anaphylactic reaction to gelatin or gelatin-containing products.

Measles, Mumps, and Rubella (MMR) Immunizations:Adult requiring two doses of MMR

Subpopulation for this branch MMR Immunizations-General

Includes adults born in or after 1957 and meet following criteria

Includes Healthcare workers, born before 1957, who meet any of the following criteria

Identify the patient as a measles, mump, and rubella vaccine candidate

Open Immunization Order Set and display the subsection for MMR

Ensure guideline recommendations are available to the care team

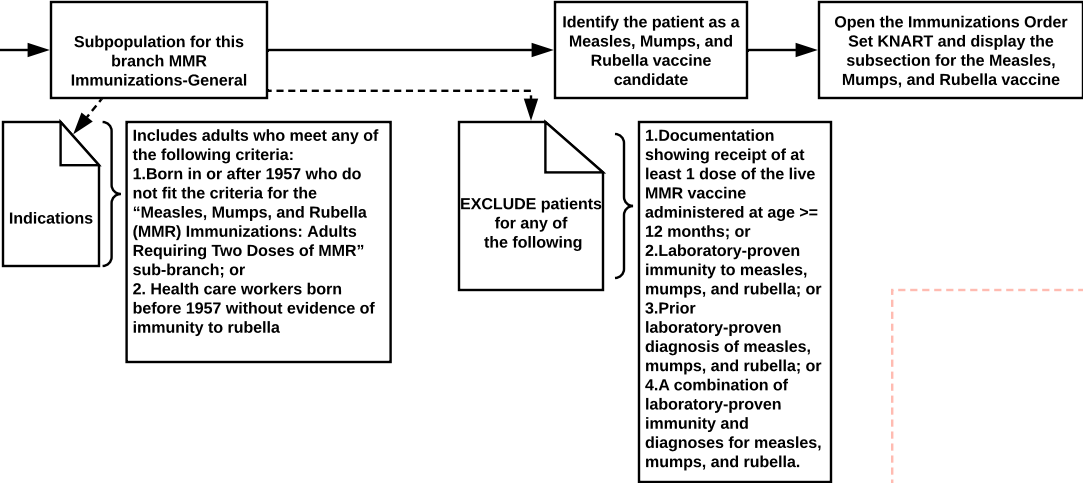
EXCLUDE patients for any of the following

- 1.Have received the MMR within the past 28 days; or
- 2.Documentation showing receipt of 2 doses of the live MMR vaccine where the first dose was administered at age >= 12 months and the second dose was administered at least 28 days after the first dose; or
- 3.Laboratory-proven immunity to measles, mumps, and rubella; or
- 4.Prior laboratory-proven diagnosis of measles, mumps, and rubella; or
- 5.A combination of laboratory-proven immunity and diagnoses for measles, mumps, and rubella.

- 1.Had a prior inactivated or unknown measles vaccine, or had an attenuated measles vaccine accompanied by immunoglobulin; or
- 2.Work in healthcare; or
- 3.Are close contacts of immunocompromised persons; or
- 4.Are students in a post-high school educational institution; or
- 5.Anticipate international travel; or
- 6.Adults with HIV and a CD4+ T-lymphocyte count >= 200 cells/microliters or a CD4+ T-lymphocyte percentage >15% for at least 6 months.

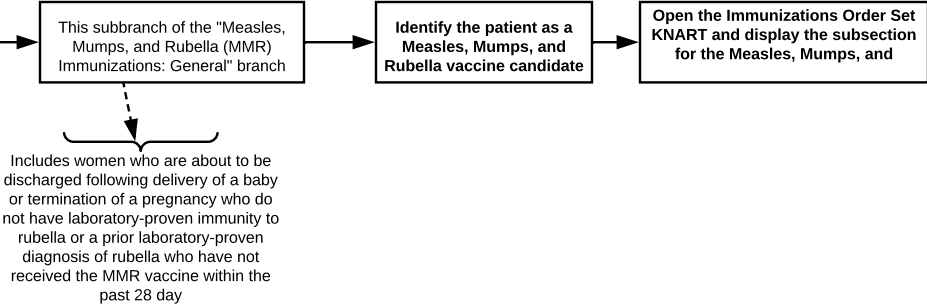
- 1.Received an inactivated or unknown type of mumps vaccine before 1979; or
- 2.Received an inactivated or unknown type of measles vaccine during the years 1963 to 1967; or
- 3.Lack laboratory-proven immunity to measles or mumps or a history of laboratory proven diagnosis of measles or mumps.

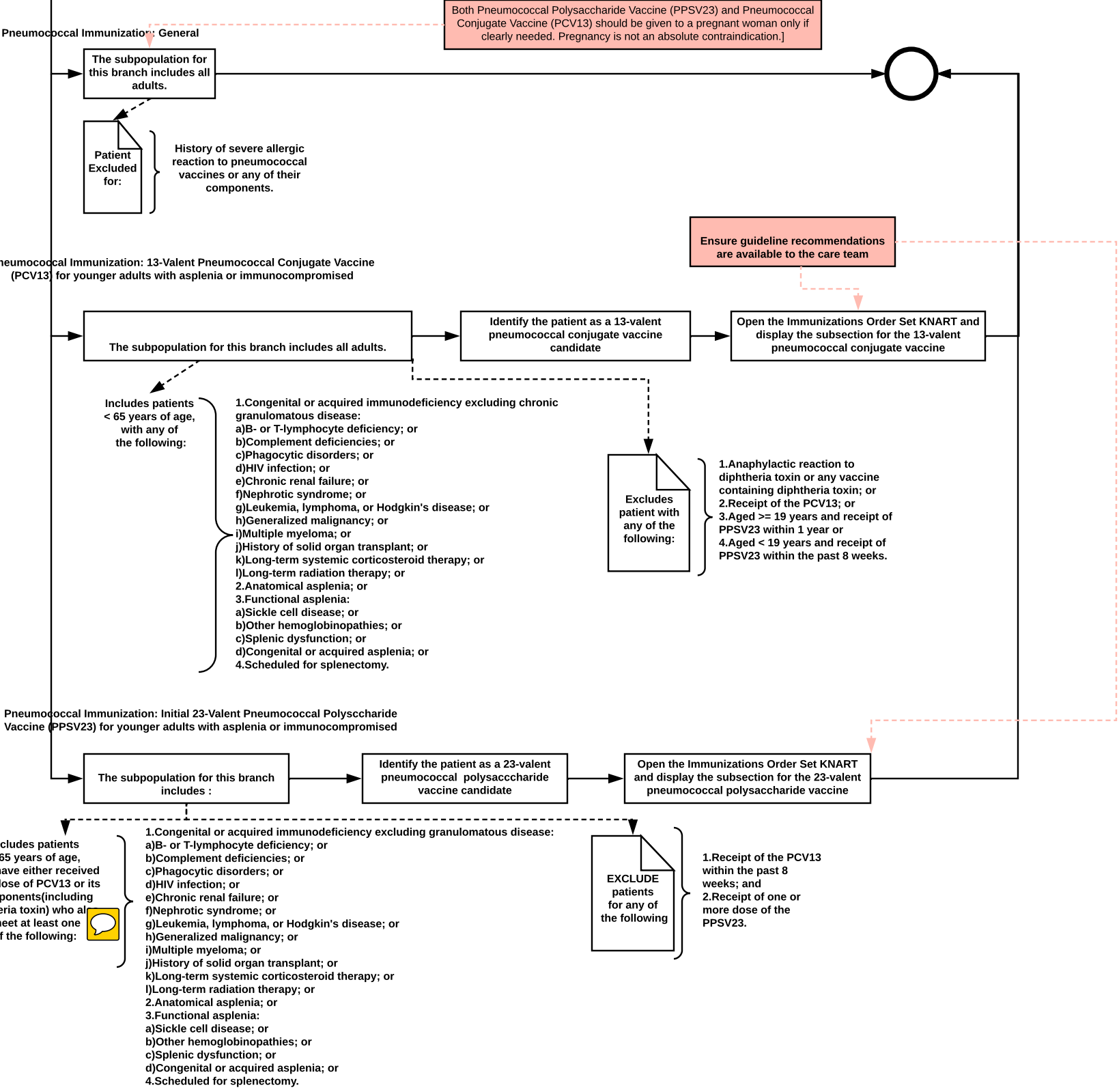
Measles, Mumps, and Rubella (MMR) Immunizations:Adult requiring One dose of MMR



Ensure the guideline recommendations are available to the care team.

Measles, Mumps, and Rubella (MMR) Immunizations:Women who are Postpartum or Post-termination





Pneumococcal Immunization: Second 23-Valent Pneumococcal Polysaccharide Vaccine (PPSV23) for younger adults with asplenia or immunocompromised

This sub-branch of the "Pneumococcal Immunizations: General" branch

Includes patients aged < 65 years with any of the following:

1. Congenital or acquired immunodeficiency excluding chronic granulomatous disease:
  - a) B- or T-lymphocyte deficiency; or
  - b) Complement deficiencies; or
  - c) Phagocytic disorders; or
  - d) HIV infection; or
  - e) Chronic renal failure; or
  - f) Nephrotic syndrome; or
  - g) Leukemia, lymphoma, or Hodgkin's disease; or
  - h) Generalized malignancy; or
  - i) Multiple myeloma; or
  - j) History of solid organ transplant; or
  - k) Long-term systemic corticosteroid therapy; or
  - l) Long-term radiation therapy; or
2. Anatomical asplenia; or
3. Functional asplenia:
  - a) Sickle cell disease; or
  - b) Other hemoglobinopathies; or
  - c) Splenic dysfunction; or
  - d) Congenital or acquired asplenia; or
4. Scheduled for splenectomy.

Identify the patient as a 23-valent pneumococcal polysaccharide vaccine candidate

EXCLUDE patients for any of the following:

1. Receipt of the PCV13 within the past 8 weeks; or
2. Receipt of two or more doses of the PPSV23; or
3. Receipt of PPSV23 within the past 5 years.

Open the Immunizations Order Set KNART and display the subsection for the 23-valent pneumococcal polysaccharide vaccine

Ensure guideline recommendations are available to the care team

Pneumococcal Immunization: 13-Valent Pneumococcal Conjugate Vaccine (PCV13) for younger adults with Cerebrospinal fluid leak or a Cochlear implant

This sub-branch of the "Pneumococcal Immunizations: General" branch

Includes patients aged < 65 years not included in any of the asplenic or immunocompromised sub-branches with either a cerebrospinal fluid leak or a cochlear implant.

Excludes patient with any of the following:

1. Allergy to diphtheria toxin or any vaccine containing diphtheria toxin; or
2. Receipt of the PCV13; or
3. Receipt of PPSV23 within 1 year.

Identify the patient as a 13-valent pneumococcal conjugate vaccine candidate

Open the Immunizations Order Set KNART and display the subsection for the 13-valent pneumococcal conjugate vaccine

Pneumococcal Immunization: 23-Valent Pneumococcal Polysaccharide Vaccine (PPSV23) for younger adults with Cerebrospinal fluid leak or a Cochlear implant

This sub-branch of the "Pneumococcal Immunizations: General" branch

Includes patients aged < 65 years not included in any of the asplenic or immunocompromised sub-branches with either a cerebrospinal fluid leak or a cochlear implant.

Included

Patient must have received one dose of PCV13 and not be allergic to the PCV13 or its components (including diphtheria toxin).

EXCLUDE patient with any of the following:

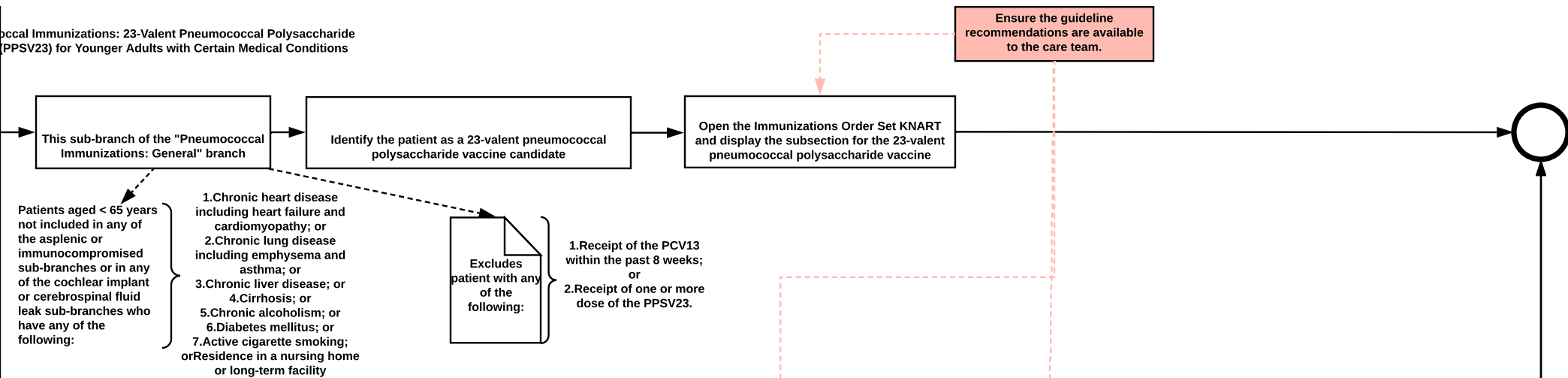
1. Receipt of the PCV13 within the past 8 weeks; or
2. Receipt of one or more dose of the PPSV23.

Identify the patient as a 23-valent pneumococcal polysaccharide vaccine candidate

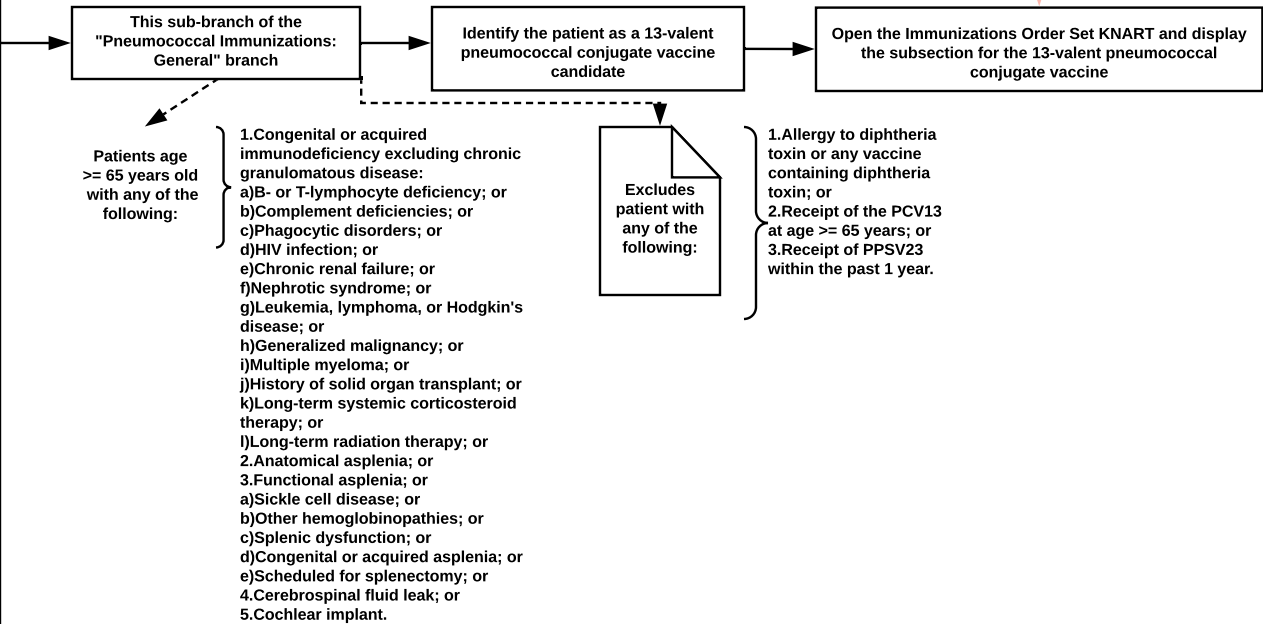
Open the Immunizations Order Set and display the subsection for the 23-valent pneumococcal polysaccharide vaccine



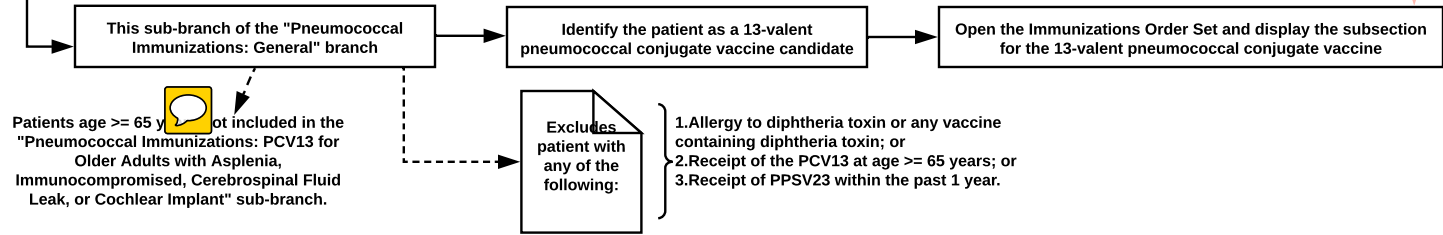
Pneumococcal Immunizations: 23-Valent Pneumococcal Polysaccharide Vaccine (PPSV23) for Younger Adults with Certain Medical Conditions



Pneumococcal Immunizations:13-ValentPneumococcal Conjugate Vaccine (PCV13) for Older Adults with Asplenia, Immunocompromise, Cerebrospinal Fluid Leak, or Cochlear Implant



Pneumococcal Immunizations: 13-Valent Pneumococcal Conjugate Vaccine (PCV13) for Immunocompetent Older Adults



Pneumococcal Immunizations:23-ValentPneumococcal Polysaccharide Vaccine (PPSV23) for Older Adults with Asplenia, Immunocompromise, Cerebrospinal Fluid Leak, or Cochlear Implant

This sub-branch of the "Pneumococcal Immunizations: General" branch

Identify the patient as a 23-valent pneumococcal polysaccharide vaccine candidate

Open the Immunizations Order Set KNART and display the subsection for the 23-valent pneumococcal polysaccharide vaccine

Patient age  $\geq 65$  years who have received one dose of PCV13 at age  $\geq 19$  years or have a allergy to the PCV13 or its components (including diphtheria toxin) and any of the following:

1. Congenital or acquired immunodeficiency excluding chronic granulomatous disease:
  - a) B- or T-lymphocyte deficiency; or
  - b) complement deficiencies; or
  - c) Phagocytic disorders; or
  - d) HIV infection; or
  - e) Chronic renal failure; or
  - f) Nephrotic syndrome; or
  - g) Leukemia, lymphoma, or Hodgkin's disease; or
  - h) Generalized malignancy; or
  - i) Multiple myeloma; or
  - j) History of solid organ transplant; or
  - k) Long-term systemic corticosteroid therapy; or
  - l) Long-term radiation therapy; or
2. Anatomical asplenia; or
3. Functional asplenia:
  - a) Sickle cell disease; or
  - b) Other hemoglobinopathies; or
  - c) Splenic dysfunction; or
  - d) Congenital or acquired asplenia; or
4. Scheduled for splenectomy; or
5. Cerebrospinal fluid leak; or
6. Cochlear implant.

Excludes patient with any of the following:

1. Receipt of the PCV13 within the past 8 weeks; or
2. Receipt of one or more dose of the PPSV23 at age  $\geq 65$  years; or
3. Receipt of the PPSV23 within the past 5 years.

Ensure the guideline recommendations are available to the care team.

Pneumococcal Immunizations: 23-Valent Pneumococcal Polysaccharide Vaccine (PPSV23) for Immunocompetent Older Adults

This sub-branch of the "Pneumococcal Immunizations: General" branch

Identify the patient as a 23-valent pneumococcal polysaccharide vaccine candidate

Open the Immunizations Order Set KNART and display the subsection for the 23-valent pneumococcal polysaccharide vaccine

Patients age  $\geq 65$  years not included in the "Pneumococcal Immunizations: PPSV23 for Older Adults with Asplenia, Immunocompromise, Cerebrospinal Fluid Leak, or Cochlear Implant" sub-branch.

Patient must have received one dose of PCV13 at age  $\geq 65$  years or must be allergic to the PCV13 or its components (including diphtheria toxin).

Excludes patient with any of the following:

1. Receipt of the PCV13 within the past 1 year; or
2. Receipt of one or more dose of the PPSV23 at age  $\geq 65$  years; or
3. Receipt of the PPSV23 within the past 5 years.

Tetanus, Diphtheria, and Pertussis Immunizations: General

Exclude patients for any of the following:

- 1. Severe allergic reaction to tetanus or diphtheria vaccines or any of their components; or
- 2. Arthus-type hypersensitivity reaction after a dose of any tetanus or diphtheria toxoid-containing vaccine within the past 10 years.



Ensure guideline recommendations are available to care team.

Tetanus, Diphtheria, and Pertussis Immunizations: Tetanus Toxoid, Reduced Diphtheria Toxoid, and Acellular Pertussis (Tdap) Vaccine

This sub-branch includes adults meeting any of the following criteria:

- 1. Incomplete or unknown history of the primary tetanus and diphtheria toxoid-containing vaccine series (at least three doses if the first dose is administered on or after the first birthday or the patient is aged  $\geq 19$  years, or at least four doses if the first dose was administered prior to the first birthday and the patient is aged  $< 19$  years); or
- 2. No record of prior Tdap receipt; or
- 3. Active pregnancy; or
- 4. Immediately postpartum if Tdap is not administered during pregnancy.
- 5. Exclude patients for any of the following:
  - 6. Development of encephalopathy within 7 days of any acellular pertussis-, tetanus toxoid-, or diphtheria toxoid-containing vaccine without any other attributable cause; or
  - 7. Current progressive encephalopathy or neurologic disorder, uncontrolled seizures, or unstable neurologic disorder; or
  - 8. Prior Tdap immunization during current pregnancy or postpartum period.

Identify the patient as a tetanus, diphtheria, pertussis vaccine candidate

Open the Immunizations Order Set KNART and display the subsection for the tetanus, diphtheria, pertussis vaccine

Tetanus, Diphtheria, and Pertussis Immunizations: Tetanus and Diphtheria Toxoids (Td) Vaccine

This sub-branch includes adults with an incomplete or unknown history of the primary series with tetanus and diphtheria toxoid-containing vaccines (at least three doses if the first dose is administered on or after the first birthday or the patient is aged  $\geq 19$  years, or at least four doses if the first dose was administered prior to the first birthday and the patient is aged  $< 19$  years).



Patients should not be excluded if they have started or continued the primary series as an adult unless they meet any of the following criteria:

- 1. Receipt of the first dose of the primary tetanus and diphtheria toxoid-containing vaccine series within the past 4 weeks; or
- 2. Aged  $\geq 19$  years and receipt of the second dose of the tetanus and diphtheria toxoid-containing vaccine primary series within the past 6 months; or
- 3. Aged  $< 19$  years, receipt of the first dose of the tetanus and diphtheria toxoid-containing vaccine primary series within the past 6 months; or
- 4. Aged  $< 19$  years, receipt of the first dose of the tetanus and diphtheria toxoid-containing vaccine primary series prior to the first birthday, and receipt of the second dose within the past four weeks; or
- 5. Aged  $< 19$  years, receipt of the first dose of the tetanus and diphtheria toxoid-containing vaccine primary series prior to the first birthday, and receipt of the third dose within the past 6 months; or
- 6. No record of prior Tdap vaccines



- 4. Aged  $< 19$  years, receipt of the first dose of the tetanus and diphtheria toxoid-containing vaccine primary series prior to the first birthday, and receipt of the second dose within the past four weeks; or
- 5. Aged  $< 19$  years, receipt of the first dose of the tetanus and diphtheria toxoid-containing vaccine primary series prior to the first birthday, and receipt of the third dose within the past 6 months; or
- 6. No record of prior Tdap vaccines

Tetanus, Diphtheria, and Pertussis Immunizations: Tetanus and Diphtheria  
Toxoids (Td) Vaccine Booster

The subpopulation for this branch includes

Adults whose most recent Tdap or Td vaccine was at least 10 years ago.

Identify the patient as a tetanus and diphtheria toxoids vaccine candidate

Open the Immunizations Order Set KNART and display the subsection for tetanus and diphtheria toxoids vaccine

Ensure guideline recommendations are available to care team

