Prevent and respond to measles

A resource for shelters and congregate setting facilities

Most Utahns are protected against measles, however there are some people who are unvaccinated and at risk. While most people who use shelters or resource centers in Utah are likely to be vaccinated, it is important for facilities to be ready to limit the spread of the disease. See the considerations below as you prepare your facility for possible measles exposures.

Understanding measles

Symptoms

Early symptoms of measles

The first symptoms of measles start between 1 and 3 weeks after you are exposed and infected with the virus. Most people have symptoms at about 2 weeks. The first symptoms of measles may seem like a cold or allergies. Early symptoms include:

- High fever (typically 101°F (38.3°C) or higher), **with**:
    - Cough
    - Runny nose
    - Red, watery eyes

2 to 5 days after symptoms start:

- Measles rash usually begins as flat, red spots that appear on the face at the hairline. The spots then spread down to the neck, belly, arms, legs, and feet.
- Measles rash looks similar in most people, but it doesn't always look the same for everyone.
- The red spots may join together as they spread from your head to the rest of your body.
- The spots will often turn white (blanch) if you press on them with your finger for the first few days after you get them. They usually stop blanching (turning white) with pressure after about day 3 to 4 of the illness.

- Small raised bumps may appear on top of the red spots.
- The skin may flake or peel in areas with a heavy or severe rash.
- Your fever may get higher than 104°F or 40°C when you first get the measles rash.
- Many other things can cause a rash. It doesn't always mean you have measles if you have a rash.

What are some complications of measles?

Measles is mild for most people. However, about 30% of people who get measles have complications or severe illness.

Common complications include ear infections and diarrhea. Severe complications can include hospitalization, pneumonia (lung infection), encephalitis (brain swelling), and even death. Measles can also lead to miscarriage, premature birth, and low-birth-weight, and congenital measles syndrome in pregnant women.

How measles spreads

You can get measles if you are not vaccinated and are around someone who has the virus or if you touch surfaces with the virus on them.

- The measles virus stays in the air and on surfaces for up to 2 hours after an infected person leaves.
- You can walk into a room where someone with measles has been and still get infected.

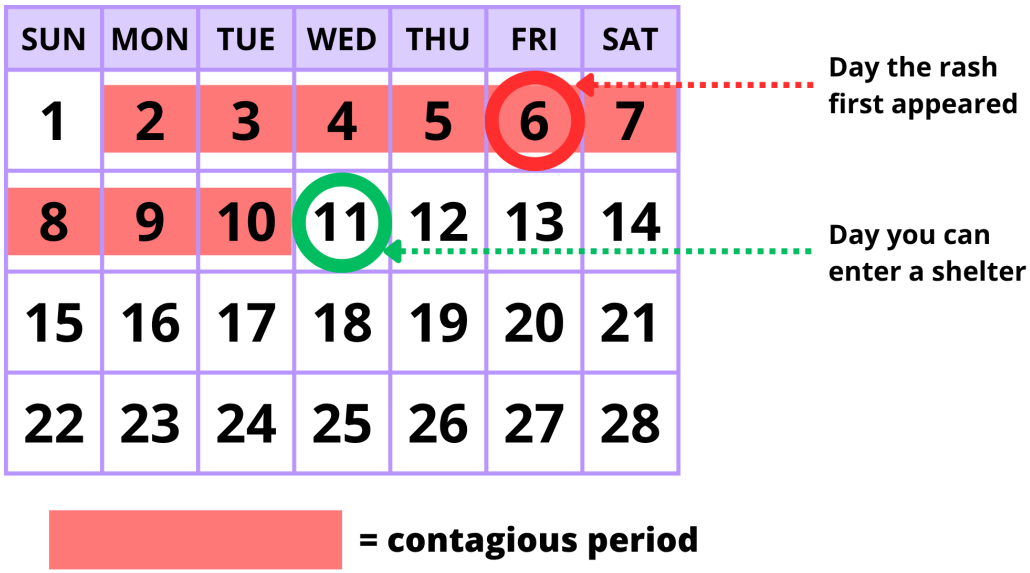
Droplets spray into the air when you cough, sneeze, speak, sing, or breathe.

- Measles spreads when droplets that have the measles virus in them spray into the air and other people breathe them in.
- It can also spread if people get the droplets on their hands when they touch something where droplets have landed and touch their face or mouth.

How long is someone contagious with measles?

You're contagious from 4 days **before** you get a measles rash until 4 days **after the rash starts** (see calendar below). This means you can be contagious before your symptoms start, or while you have early symptoms that feel like a cold (such as a runny nose, red eyes, and a cough). This is one reason why measles can spread so easily—people who are

contagious with measles may come to a shelter or other congregate setting before they even know they have measles.



Prepare for measles at your facility

Know how to contact your local health department

Know how to contact your local health department if you suspect someone has come to your shelter while infectious with measles. We recommend you contact the local health department before you have any measles exposures so you can find out who you should call directly if you suspect someone has entered your facility while infectious with measles. Notify your local health department immediately if you suspect there has been a measles exposure at your shelter.

Review measles immunity status for clients, patients, staff, and volunteers

Keep a record of clients/patients, staff, and volunteers who are **not immune**. This will be useful if there is a measles exposure in your facility.

Who is immune to measles?

Clients, patients, staff, and volunteers are considered to be **immune to measles** if at least 1 of the following applies to them:

- They have a written record of your vaccine history and it shows they are up-to-date on the number of doses they need for their age.
    - You are considered up-to-date with **1 dose** of MMR vaccine if you are:
        - Preschool aged (older than 12 months but not in kindergarten yet).
        - An adult who is NOT in high school, college, or another post-high school educational institution, NOT a healthcare worker, and NOT traveling internationally or to a place with an active measles travel advisory.
        - Age 6 to 12 months AND traveling internationally, on domestic flights, or to areas in the U.S. where measles is actively spreading.
    - You are considered up-to date with **2 doses** of MMR vaccine (separated by 28 days) if you are:
        - In kindergarten through grade 12.
        - Attending college or another post-high school educational institution.
        - A healthcare worker.
        - Older than 12 months AND traveling internationally, on domestic flights, or to areas in the U.S. where measles is actively spreading.
- They have lab results that show enough measles antibodies in their blood (laboratory evidence of immunity).
- They have lab results that show they have had a measles infection in the past.
    - Verbal history of measles does not count.
- They were born before 1957 (people born before 1957 most likely had measles in the past and are considered immune).

Note: Some people who were vaccinated between the years 1963 and 1967 got a less effective vaccine, which means they can still get measles. Anyone who got this vaccine is considered unvaccinated and should talk to their doctor about getting revaccinated.

Immunization records

You can look at immunization records to see who is up-to-date on the MMR vaccine.

The Utah State Immunization Information System (USIIS) tracks vaccinations back to the year 2000. This dataset can help identify people who are immunized. Contact immunize@utah.gov to see if your program qualifies and can get access to USIIS. In

general, this system is for clinical providers but shelters/congregate settings **may** be given access.

- The Docket app can also help individuals identify their immunization status if they are unsure. The app can be downloaded on both Android and Apple devices and can provide immediate access to vaccination records.

Encourage staff and visitors to stay home if they feel sick

If someone comes to your facility while they are feeling sick, they could spread illness to others at the facility. Educate your clients, patients, staff, and volunteers on the symptoms of measles. Remind staff and visitors to stay home if they feel sick. Watch for fever and other signs and symptoms of measles among people in the facility.

Implement a screening process

Add questions to your facility's medical intake process about measles symptoms, recent exposures, and measles vaccination status.

A person might have been exposed if, in the last 21 days, they spent time around anyone with measles, traveled internationally or spent time with foreign visitors, or been to an area with ongoing measles transmission.

The Utah Department of Health and Human Services (DHHS) has created this flowchart (also pasted below) to help clinicians work through what to ask and look for.

Have a plan in place for potential measles exposures

Make plans for staff or volunteers who suspect they have measles while at the facility. Plans should include how they should notify their supervisor and what to do so they can leave immediately or wait in a designated area away from others while they wait for transportation. It is a good idea to have at least 1 face mask ready so that someone can wear it as they leave if they suspect they may have measles, and to have fit-tested respirators ready for staff who may need to care for someone who may be infectious with measles.

Suggestions on what could be included in your plan can be found below in the immediate actions section below.

Communicate

Communicate your plans with clients/patients, staff, and volunteers about what you will do if someone comes to your facility while infectious with measles.

Have a process or system for clients, patients, staff, and volunteers to communicate to you and report if they are sick. Remind staff and visitors to stay home when they are sick.

Consider offering MMR vaccination

Offer MMR vaccine to clients, patients, staff, and volunteers who have not had 2 doses of the vaccine or documentation is not available. It is safe to get another vaccine if you don't have an MMR or MMRV vaccination record. Provide education to clients, patients, and staff that vaccination is the best protection against measles. Work through peer educators to help increase vaccine acceptance.

Some facilities might find it reduces cost to test their clients, patients, staff, and volunteers for immunity (IgG antibodies) and then offer MMR/MMRV vaccination only to people who are not immune. Contact your local health department to discuss if this option is good for your program.

Know details about your facility

Gather information about facility layout and ventilation. This information will help when you try to understand the potential transmission of measles in your facility and help identify who may have been exposed.

Find an isolation space

Find an isolation space where a person with measles symptoms can stay while they wait for medical evaluation and testing. This will prevent other people from getting sick. An airborne infection isolation room (AIIR) is ideal. Make sure it is properly maintained and fully functional ahead of time.

If your facility does not have an AIIR, identify another facility with an AIIR where the person could be transferred (such as a local hospital). If the person cannot be transferred, identify a space that is away from others and has airflow that does not connect with other parts of the building. The space should have a solid door that closes and, ideally, ventilation or a window to the outdoors.

Make sure anyone who is isolated has the following:

- regular visits from medical staff
- access to mental health services
- regular communication about why they need to stay isolated and how long their isolation will last
- access to radio, TV, phone, tablet, and/or reading materials; and personal property.

Only people with confirmed measles infection (a positive PCR test or someone with measles symptoms who was known to have contact with people with measles) should be housed together in the same isolation space. If someone is suspected to have measles, but it is not confirmed, they should be housed in a separate isolation space.

Identify a separate sleeping space for those at higher risk

Consider setting up separate sleeping spaces for people at higher risk for measles complications to protect their health. Some people at higher risk include pregnant women, children <12 months, and people with weakened immune systems.

Keep a record of who was in the shelter

Be able to create lists of who was in the shelter each day and night, ideally with a list of people by room or a bed map. If someone comes to the shelter while infectious with measles, these lists will help you and the health department identify people who may have been exposed and need follow-up.

Create a plan on how patients/clients will be tested for measles

PCR is the gold standard for measles testing and should be collected for any person suspected to have measles.

- Identify the testing laboratory and clarify sample requirements
- Identify the payment method
- Identify fully-vaccinated staff who can collect samples for testing
- Obtain appropriate sample collection material based on lab requirements

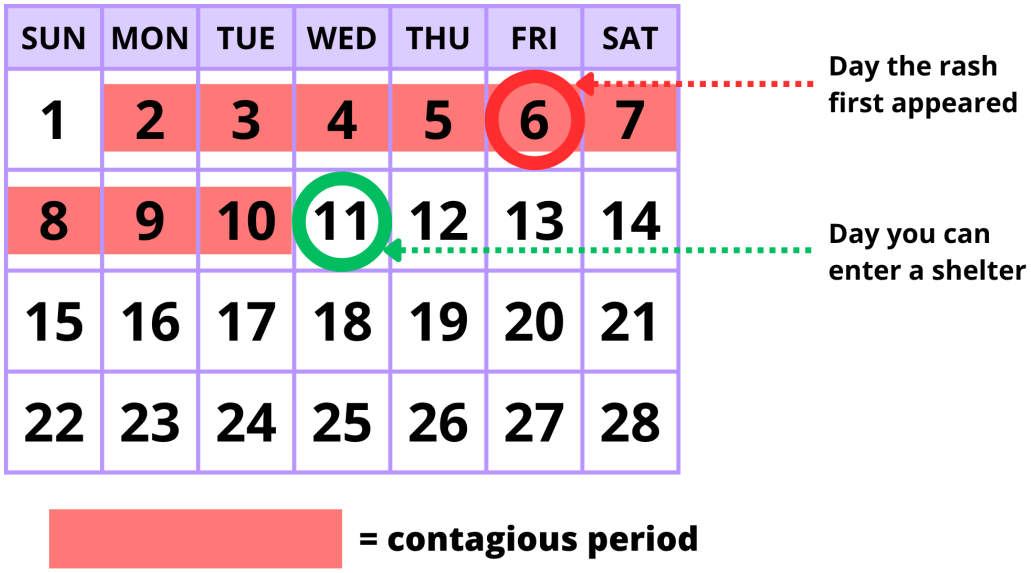
Respond when someone is suspected or confirmed to have measles

Immediate actions: What to do in the first 10 minutes after measles is suspected in your facility

When a patient/client, staff member, visitor, or anyone else in the facility is suspected of having measles take these actions immediately:

Care for the person suspected to have measles

1. **Give the person a face mask** (if ≥2 years old) to wear until they can get to the isolation area. Face masks should fit well and cover their mouth and nose to stop respiratory droplets from getting into the air. Masks should only be used as a measure to move the person to an isolation area.
2. **Isolate the person** with measles symptoms to protect others from exposure. Continue isolation until 4 days after their rash starts (rash onset is day 0).



   a. House patients/clients in the facility's medical isolation space (see above), and make sure they receive prompt medical evaluation. They do not need to wear a mask while they are in a private room with the door fully closed.
   b. Any staff who provide care or interact with the individual should be immune to measles and follow CDC's healthcare guidance. Staff who provide care should wear fit-tested respirators.

    c. If the person with measles symptoms is a staff member or volunteer, instruct them to stay home from work during this time and advise them to seek medical care.
        i. **Always call a healthcare facility before you send someone or seek care for measles.** The facility may have specific instructions about where to go to minimize potential exposure to others.
3. **Seek emergency care** if the person who is sick gets rapidly worse or if they experience trouble breathing, pain when breathing or coughing, dehydration, a fever or headache that won't stop, confusion, decreased alertness or severe weakness, blue color around the mouth, or low energy.
    a. **Always call a healthcare facility before you send someone or seek care for measles.** The facility may have specific instructions about where to go to minimize potential exposure to others.
    b. If a person with measles symptoms is transported elsewhere for care or isolation, make sure they wear a mask during transport.
        i. During non-emergency transport, staff and volunteers who transport or escort the patient should also use respiratory protection (ideally an N95 mask or respirator) and preferably be immune to measles. The patient should also wear a mask if they are able.
        ii. After transport, clean and disinfect vehicle surfaces with an EPA-registered disinfectant and open the doors or windows to air out the vehicle. The vehicle should not be used for at least 2 hours.
        iii. If emergency transport is warranted, make sure EMS is notified of potential measles concern.

Inform the right people

Alert your infection prevention team and **your local health department** that you suspect someone at your facility may have measles. Your local health department can support your measles response, including guidance about isolation, testing, and care for the person with measles symptoms.

Test the person for measles

If you have a medical facility/staff on-site, **collect a sample** from the person suspected to have measles. Follow the instructions of the testing laboratory you have identified and your local health department.

- If you do not have staff who can collect the sample, call your identified clinical partner/testing clinic to see if there is a way for them to test the person. It is ideal to collect a nose swab outside—away from other patients/clients.

Actions that should be done as soon as possible after you identify a person with measles

Disinfect after the person with measles leaves

Measles virus particles can remain in the air for up to 2 hours after someone with measles leaves a room. If you discover someone was at work while they were contagious with measles, you may need to close off the rooms they were in until it has been 2 hours since the person left the room. Open outside doors and windows to increase air circulation in areas where the person may have been. **Work with your local health department** to determine if temporarily closing the building, or part of the building is necessary.

If it has been longer than 2 hours since the infectious person left the room, you can begin to clean and disinfect high-touch surfaces in that room. If you can't wait 2 hours, wait at least 1 hour. The person cleaning the room should have immunity against measles and the person should wear a well-fitted mask. Open outside doors and windows to increase air circulation in these rooms or areas during this waiting period. You can increase ventilation in the area or room to reduce the amount of virus in the air, but you should still keep the room closed for at least 2 hours after the infectious person has left. Turn off in-room, window-mounted, or on-wall recirculation HVAC temporarily, to keep from contaminating HVAC units.

Clean and disinfect all areas, such as offices, bathrooms, common areas, shared electronic equipment (like tablets, touch screens, keyboards, remote controls, and ATMs) used by the person who is sick. Use an EPA-registered disinfectant effective against viruses, such as Lysol Disinfectant Spray or Clorox Disinfecting Wipes (those listed as suitable for hepatitis B and HIV on the EPA website). You may also use a solution of 1 part bleach to 9 parts water. Make sure you allow the solution to sit on the surface for at least 1 minute before you wipe it off. The surface must remain wet for the entire minute to be properly disinfected.

Visit this resource document for instructions on how to clean and disinfect specific surfaces.

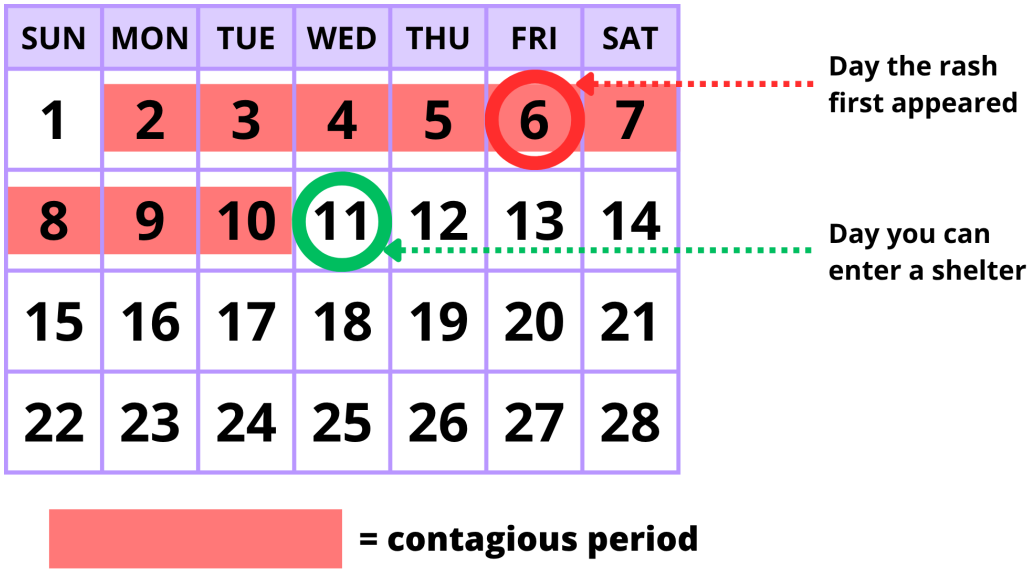
If your facility **houses people overnight**, you will need to follow different cleaning and disinfection procedures. Visit this resource document for instructions on cleaning and

disinfecting in facilities that house people overnight, including facilities housing people who need to be isolated.

Identify people who may have been exposed and may need treatment

Inform all clients/patients, staff, and volunteers that someone in the facility may have or has been diagnosed with measles. Your local health department can help with this.

Identify all people who have been exposed to the person with measles during their infectious period. The infectious period starts 4 days before their rash appeared and goes through 4 days after their rash appeared.

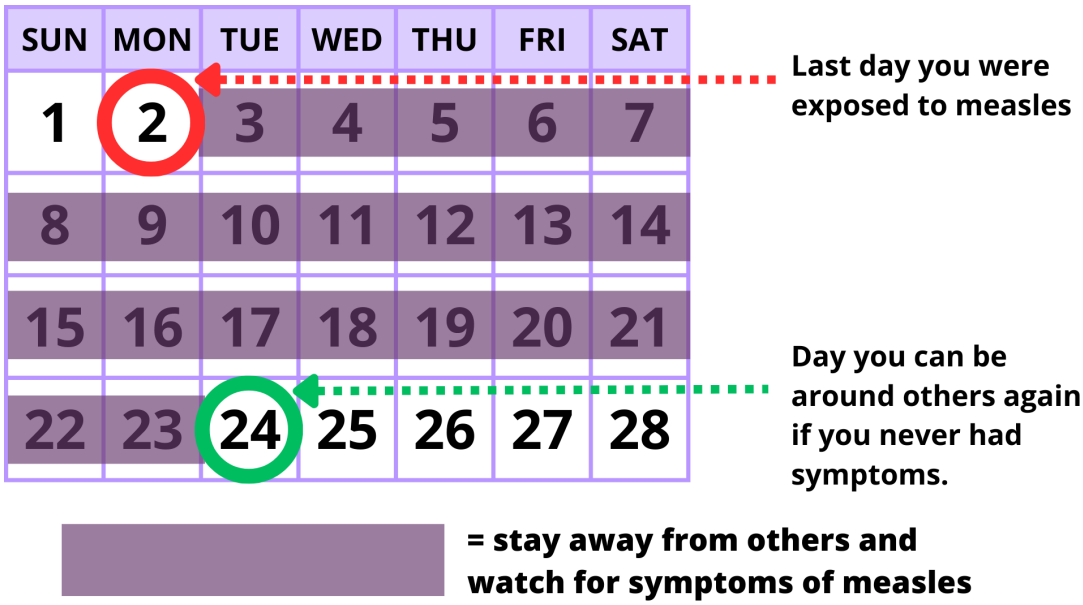


Work with your local health department to identify if any of the exposed people are eligible for post exposure prophylaxis (PEP). People can receive MMR vaccine as PEP **if it is within 72 hours of their first exposure**. Children <12 months, people with significant immune impairment, and pregnant women can receive immunoglobulin (IG) **within 6 days of their first exposure**.

Care for people who may have been exposed

1. If possible, anyone who has been exposed and is not immune to measles should be placed in a separate area away from other clients/patients. The clients/patients need to be placed in this area for 21 days starting after exposure if they do not receive PEP within the recommended timeframe.
    a. Exposed, non-immune staff should stay home for **21 days after their exposure if they do not receive PEP within the recommended**

timeframe. If vaccination status is unknown, facilities can consider testing for immunity (positive for IgG antibodies) to identify those who do not need to stay home.



2. Actively monitor exposed, non-immune people for measles symptoms, and ask exposed staff to monitor their own symptoms, for 21 days after their last exposure (even if immune). Staff should consider daily checks on these individuals including taking a temperature and checking for cough, runny nose, red eyes, and rash.
    a. Educate exposed patients/clients and staff how to recognize measles symptoms and emphasize the importance of reporting these symptoms to staff.
    b. Provide an easy way for people to contact your team and local health department if they have symptoms.

Protect others

Consider limitations on community visitation during a measles outbreak.

Why should your facilities prepare for measles?

Measles is caused by a highly contagious virus that spreads through the air when an infected person coughs or sneezes. If one person has measles, up to 9 in 10 people nearby will become infected if they are not protected. Measles can spread quickly in congregate

settings because of close housing and ventilation limitations. Measles response challenges often include difficulty implementing recommended isolation and quarantine and verifying immunity status among patients/clients and staff.

Measles is more than just a rash—it can cause serious health complications or even death. About 1 in 5 people who get measles will be hospitalized. The best protection is the measles, mumps, and rubella (MMR) vaccine.

Resources

Summary of measles infections in Utah

Utah specific guidance for measles

Please see the clinician specific guidance, including a clinical algorithm to determine testing needs

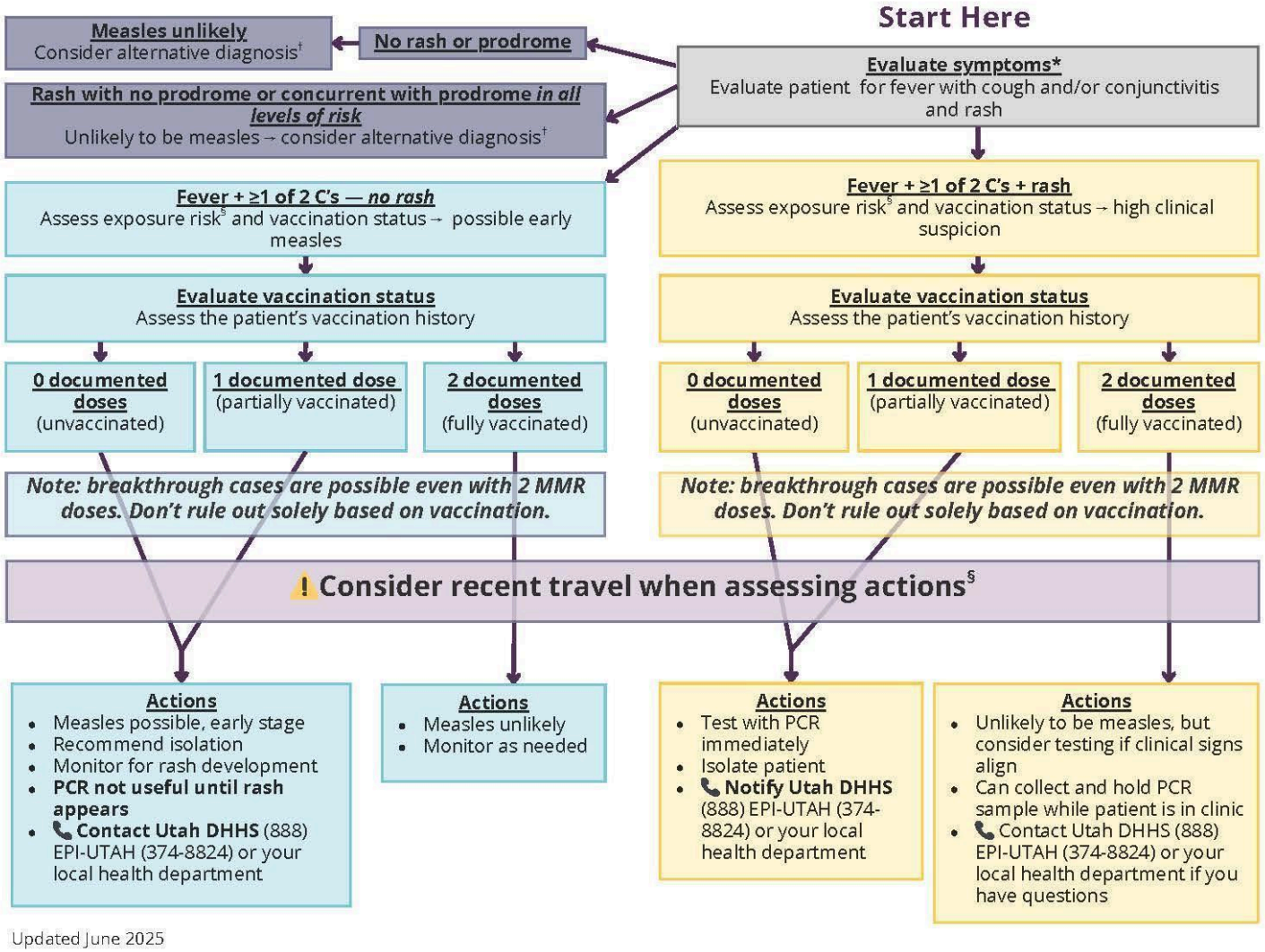
CDC – Measles Diagnosis Clinical Fact Sheet

CDC – "Consider Measles" Clinical Awareness Poster

CDC – Measles Education Videos

HUD - Measles: Info You Should Know

Flowchart to evaluate person that may have measles



***Measles symptoms**

Prodrome

- Fever—almost always present with measles
- At least 1 of the 2 C's—cough or conjunctivitis
- Koplik spots

Rash

- Typically appears ~3 days after prodrome
- Lasts ≥ 3 days
- Maculopapular
- Starts on forehead/face → spreads to neck, trunk, extremities (generalized)

§Recent exposure (past 3 weeks)

Consider recent exposure risks when weighing test necessity and public health notification:

Risk	Exposure
⚠ High	• Contact with confirmed case • Travel to area with ongoing community transmission
Moderate	• Airport travel • Large gatherings • Contact with recent travelers or ill individuals
Low	• No travel, • No sick contacts • No high-risk events

†Recommend testing for other diseases (i.e., parvovirus B19, roseola, rubella, and a respiratory viral panel) to rule out measles.