sonoma county
DEPARTMENT OF HEALTH SERVICES
PUBLIC HEALTH DIVISION

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HEALTH ADVISORY
MEASLES OUTBREAKS IN CALIFORNIA

TO: HEALTH CARE PROVIDERS
FROM: KAREN HOLBROOK, MD, MPH, DEPUTY HEALTH OFFICER
QUESTIONS: DISEASE CONTROL UNIT – PUBLIC HEALTH (565-4566)
DATE: April 24, 2019
CC: PLEASE SHARE WITH ALL MEDICAL STAFF

ACTIONS REQUESTED OF ALL CLINICIANS

1. **SUSPECT** measles in patients with rash AND fever ≥ 101°F (38.3°C). Ask about: measles vaccination, exposure to known measles cases, travel internationally or to areas in US currently experiencing measles outbreaks (e.g., New York, New Jersey, Michigan), and exposure to visitors from those areas in the 3 weeks prior to illness onset. Consider the diagnosis regardless of exposure history.
2. **IMPLEMENT AIRBORNE PRECAUTIONS immediately** for suspected cases. **Mask** and **isolate** patient in an airborne infection isolation room if possible. Notify your facility's Infection Control Professional immediately. Staff entering the isolation room should be immune to measles AND wear an N95 respirator.
3. **REPORT suspect** measles cases **immediately** to Sonoma County Public Health Disease Control (707) 565-4566; after hours follow the prompts to reach the on-call Health Officer. MAKE SURE TO SPEAK WITH SOMEONE, DO NOT JUST LEAVE A MESSAGE OR SEND A FAX.
4. **TEST suspected cases.** After approval from Sonoma County Disease Control and review of detailed instructions below, collect both urine and a throat or NP swab. **Proper specimen collection is very important**. Only submit specimens to Sonoma County Public Health Lab after you have spoken with Sonoma County Public Health Disease Control and received approval for testing.
5. **ADVISE** patients with suspected measles to stay home with **no visitors** until at least 4 days after rash onset AND cleared by Sonoma County Disease Control to resume usual activities. **Ask** about household contacts (name, age, immunity, contact info). See Contact Identification and Investigation Section below.
6. **VACCINATE** patients born after 1956 who have not received 2 documented doses of MMR, unless contraindicated, according to national guidelines. Promote appropriate travel -vaccinations including MMR for under-vaccinated individuals (including infants age > 6 months) traveling to areas with ongoing outbreaks. **Consider contacting** patients in your practice who are not up-to-date with MMR and encourage vaccination. Use this as an opportunity to provide other catch up vaccinations.
7. **ENGAGE** patients and parents who choose not to vaccinate in a long-term relationship based on a common goal of caring for their health. **Inform** them of the changing epidemiology and risk of vaccine preventable diseases in general and measles in particular. Also **inform** patients and families about their responsibilities (see below for link to CDC document describing responsibilities of people choosing to not vaccinate).
8. **CONFIRM** staff immunity to measles now. If a health care provider is exposed to a measles case s/he may not be permitted to work until they provide written documentation that they have received at least two doses of MMR or a serologic test showing measles immunity.

Situational Update

In 2019, ongoing international, US measles outbreaks in New York, New Jersey and Michigan and two outbreaks in California linked to patients with international travel threaten Sonoma County residents. As of April 10, 2019, CDPH reports 23 lab-confirmed CA cases, including 13 outbreak-associated cases. **Although no cases have been identified in Sonoma County**, 10 have been reported in the Bay Area. All children and adults should be immunized against measles.

Categories of urgency levels
Health Alert: conveys the highest level of importance; warrants immediate action or attention
Health Advisory: provides important information for a specific incident or situation; may not require immediate action
Health Update: provides updated information regarding an incident or situation; unlikely to require immediate action

Clinical Presentation

Measles should be suspected in patients with a rash and fever. The fever typically exceeds 101F, precedes rash onset, peaks on days 2 or 3 after rash onset, and can persist with secondary infection. The rash typically starts on the forehead at the hairline and behind the ears and then spreads downward to the rest of the body. In vaccinated people the rash may be less intense and not spread to the entire body. It is typically erythematous, maculopapular, and progresses to confluence in the same order as the spread of the rash. Confluence is most prominent on the face. The rash typically: clears on the third or fourth day in the same order it appeared (duration is 6-7 days, but sometimes less in vaccinated people), is initially red and blanches with pressure, then fades to a coppery appearance, and finally to a brownish discoloration that does not blanch with pressure, does not itch until at least the fourth day after onset. The rash is preceded by at least one of the prodromal 3 C's: cough, coryza (runny nose) and conjunctivitis, white (Koplik) spots in the mouth early in illness, and significant malaise (especially for children). Vaccinated individuals may have a milder illness. For a succinct clinical summary with pictures of rashes from measles and other illnesses see our "At a Glance" document: http://sonomacounty.ca.gov/Health/Public-Health/Disease-Control/Health-Provider-Alerts/. Measles can also cause otitis media, diarrhea, pneumonia, encephalitis, and even death, especially in very young or immune compromised patients. A mild vaccine reaction with rash and low grade fever may occur in children within two weeks after receiving the first MMR dose. For additional information including clinical guidance see the CDPH measles webpage: https://www.cdph.ca.gov/Programs/CID/DCDC/Pages/Immunization/measles.aspx#

Infection Control

Prepare staff to recognize potential measles cases and to limit the spread of measles. This includes protocols for managing patients who call ahead to share that they have a fever and rash. Immediately mask and isolate suspect measles patients in an airborne infection isolation room if available; otherwise, place in a private room with the door closed. Additional strategies can include seeing patients in locations which are not in use or scheduling the visit at the end of the day. Depending on the number of air changes per hour (see CDPH Healthcare Facility Infection Control Recommendations at link below) do not use the examination room for up to one hour after the possibly infectious patient leaves. Healthcare workers (HCW) who enter the room should have documented immunity (2 doses MMR or laboratory evidence of immunity by measles IgG) and should use an N95 respirator or higher level of protection. Limit movement and transport of the patient for tests; if essential, mask the patient and notify receiving location of the patient's suspected diagnosis. Note the times and locations where the patient was present, and obtain the names of all staff, patients, and visitors who were in those locations during the time the suspect measles patient was in the facility and for one hour after the patient left. If measles is confirmed in the patient, exposed individuals will require immunity assessment. For additional guidance:
https://www.cdph.ca.gov/Programs/CID/DCDC/CDPH%20Document%20Library/Immunization/Measles-HCFacilityICRecs.pdf

Report and Test Suspected Cases

Call Sonoma County Public Health Disease Control at (707) 565-4566 immediately to report suspected cases (after hours follow prompts to reach the on-call Health Officer). Do not wait for lab confirmation. Confer with Sonoma County Disease Control and, if approved for testing, collect specimens ASAP for expedited testing by the Public Health Lab.

For patients presenting ≤ 7 days after rash onset PCR testing rather than serologic testing is recommended.

1. Respiratory swab for PCR: a throat swab is preferred (nasopharyngeal swab is acceptable), collected on a synthetic (e.g., Dacron, rayon, or polyester) swab only and placed in 2-3 ml of Viral Transport Media (VTM). Do not use Amies or other bacterial media. Store and ship at 2°-8°C. Collect within 2 weeks of rash onset.
2. Urine for PCR: collect 10-50 ml from the first part of the urine stream in a sterile cup. Centrifuge at 500-600 x g for 10 minutes at 4°C. Re-suspend the pellet in 2-3 ml of VTM. Store and ship at -70°C or colder. If unable to process specimen, store and ship the entire sample at 2°-8°C. Collect within 2 weeks of rash onset.
3. Serum measles IgM is not the preferred method of testing for acute cases, however for patients presenting > 7 days after rash onset this testing may be appropriate. Collect 7-10 ml of blood in a red top or serum separator tube. NOTE: capillary blood (finger or heel stick) can be used for pediatric patients, if necessary; at least 3-5 capillary tubes). Serum collected prior to 72 hours after rash onset may be falsely negative.
4. Serum IgG testing can be done on case contacts to determine prior exposure to the virus.

- Additional Information about measles specimen collection, storage and transport: https://www.cdph.ca.gov/Programs/CID/DCDC/CDPH%20Document%20Library/Measles-Testing-InformationVRDL.pdf
- Complete the "Monster Form" when submitting specimens to the Sonoma County Public Health Laboratory: https://sonomacounty.ca.gov/Health/Public-Health/Laboratory/Forms/

Isolate Suspected Cases at Home

Suspected measles cases meeting the clinical criteria above should be placed on home isolation pending laboratory confirmation or negative results. Measles patients are infectious for 9 days, from 4 days before rash onset until 4 days after rash onset and should stay at home with **no visitors** during this period. Provide patient with a supply of surgical masks. Patients should return home by private car, not public transportation, and be accompanied only by someone with immunity to measles. Disease Control will contact the patient to advise them when they can be released from home isolation.

Identification and Investigation of Contacts to Cases

Sonoma County Disease Control will work with clinicians and health care facilities to identify contacts to confirmed cases, to evaluate the contacts' measles immunity and, if appropriate, recommend post-exposure prophylaxis with MMR vaccine or Immune Globulin and home quarantine. Sonoma County Disease Control may request information from clinicians about exposed health care workers and the family or friends of the suspect or confirmed measles patient.

Vaccinate Susceptible Patients

All patients born after 1956 should be vaccinated with 2 doses of MMR unless they have laboratory evidence of immunity by measles IgG. Due to the evolution of vaccination recommendations over time, some adults may have had only one dose of MMR. Currently the Advisory Committee on Immunization Practices (ACIP) recommends 2 doses of MMR for adults who are **health care workers**, **international travelers**, **college or trade school students, household and close contacts of immunocompromised persons, people living with HIV without evidence of severe immunosuppression** and adults who received measles vaccine of unknown type, which was possible during 1963 through 1967. Bay Area and California Health Officials encourage clinicians to provide a second dose of MMR vaccine to all adults previously vaccinated only once. Clinicians should prioritize second doses of vaccine for adults in the above categories and those who work or are present in settings where unimmunized persons may be or where persons at risk for severe disease may be (e.g., childcare, pre-school and school settings where infants or many unvaccinated children are present, events/venues with pregnant women and children < 2 years of age, events /venues with immunocompromised persons). Although the MMR vaccine is routinely given at 12 months of age and 4-6 years of age; infants traveling to countries where measles is circulating can be vaccinated as early as 6 months of age. For more information see: https://www.cdc.gov/vaccines/vpd/mmr/hcp/recommendations.html .

Engage individuals and families who choose not to vaccinate in long-term relationships based on trust and a common goal of achieving health. Continue to educate them on the changing epidemiology of vaccine preventable diseases and inform them of their important responsibilities described in this CDC document: https://www.cdc.gov/vaccines/hcp/conversations/downloads/not-vacc-risks-color-office.pdf

Additional Resources:

California Department of Public Health: https://www.cdph.ca.gov/Programs/CID/DCDC/Pages/Immunization/measles.aspx

Centers for Disease Control and Prevention: https://www.cdc.gov/measles/hcp/index.html

Centers for Disease Control and Prevention Travelers' Health: https://wwwnc.cdc.gov/travel