



## Information for Healthcare Providers about Suspected Cases of Varicella (Chickenpox) with Laboratory Testing Recommendations

### Varicella virus natural history

- An illness with acute onset of diffuse (generalized) maculopapulovesicular rash without other apparent cause. In vaccinated persons who develop varicella more than 42 days after vaccination (breakthrough disease), the disease is usually mild with fewer than 50 skin lesions and shorter duration of illness. The rash may also be atypical in appearance (maculopapular with few or no vesicles).
- The incubation period for varicella is 14 to 16 days after exposure to a varicella or a herpes zoster rash, with a range of 10 to 21 days.
- Varicella is highly contagious. The period of communicability is estimated to begin 1-2 days before the rash onset. The virus spreads in the air when an infected person coughs or sneezes. It can also be spread by touching or breathing in aerosolized virus from varicella lesions. Suspected or confirmed persons with chickenpox should be advised to stay home until all of the lesions have crusted.

### Notification and reporting

Health care providers should report suspected and confirmed cases of chickenpox to the Section of Epidemiology (SOE) via fax at 907-561-4239 or telephone at 907-269-8000.

**Providers should consider testing any patient with suspected chickenpox, as the results can provide assurance in the clinical setting and impact public health decisions.**

### Laboratory Specimens

- **Varicella Zoster Virus VZV PCR is the method of choice for rapid clinical diagnosis (Table 1).**
  - Preferred specimens for diagnosis of acute infection are best collected by unroofing a vesicle, preferably a fresh fluid-filled vesicle, and then rubbing the base of the skin lesion using a Dacron® swab\*. Crusts from lesions are also excellent specimens for PCR.
  - The specimens should be placed in a sterile container and should be submitted (on cool packs) to the Alaska State Virology Laboratory (ASVL). Swabs must be placed individually into separate, empty tubes to avoid contamination. **Do not place transport medium into the tube; the specimen MUST be kept dry.** ASVL will send specimens to an out-of-state CDC contract lab for PCR testing. When urgent varicella PCR results are needed due to clinical or public health concerns, health care providers should contact the SOE for possible varicella PCR testing at the Alaska State Public Health Laboratory (ASPHL).

\*Swabs: use synthetic material swabs only – cotton or calcium-alginate tips and wooden or metal shafts are not acceptable.

### Laboratory Request Forms

1. ASVL laboratory request form:  
<http://dhss.alaska.gov/dph/Labs/Documents/publications/FbxSupplyReq.pdf>
2. Complete the patient and submitter information. In the Miscellaneous Viral Serology area, select Varicella Zoster, check patient is symptomatic. In the remarks box, write PCR testing.

**Table 1. Specimens for varicella zoster virus testing submitted to ASVL**

Test	Varicella Zoster
Testing Lab	Alaska State Virology Laboratory - Fairbanks
Disease(s)	Chickenpox, Herpes Zoster, Varicella, Shingles
Organism(s)	Varicella-Zoster Virus (VZV)
Test Method	<p><b>Serology (VZV IgG Antibody)</b></p> <ol style="list-style-type: none"> <li>This test is used to determine immune status.</li> <li>The test is performed at ASVL by EIA.</li> </ol> <p><b>PCR (VZV Nucleic Acid)</b></p> <ol style="list-style-type: none"> <li>This test is used to determine active infection.</li> <li>Testing will be performed at a CDC contract lab.</li> </ol>
Specimen	<p><b>Serology</b></p> <ul style="list-style-type: none"> <li>Centrifuged serum in SST (serum separator tubes - tiger top, marble top or yellow top with no additives)</li> </ul> <p><b>PCR</b></p> <ol style="list-style-type: none"> <li>Scabs and/or</li> <li>Vesicular lesion swabs in a dry, sterile container.</li> </ol> <p><b>PLEASE NOTE:</b> Do not place scabs or swabs for VZV into UTM. They should be kept dry, in a clean container. Skin lesion swab should be placed in a separate container from the scab. (Swabs: use synthetic material swabs only - cotton or calcium-alginate tips and wooden or metal shafts are <i>not</i> acceptable.)</p>
Storage/Transport	<p><b>Serology</b></p> <ul style="list-style-type: none"> <li>Store refrigerated or frozen; indicate date frozen (if applicable) on requisition</li> <li>Ship on frozen packs (preferred) or cold packs</li> <li>Ambient temperature shipping is not optimal for testing.</li> </ul> <p><b>PCR</b></p> <ol style="list-style-type: none"> <li>Ship specimens to ASVL at ambient temperature.</li> <li>ASVL will overnight the sample to the CDC Contract Lab.</li> </ol>
Results	<p><b>Serology</b></p> <ol style="list-style-type: none"> <li><i>Negative:</i> No significant level of detectable antibody. Presumed to be susceptible to primary infection.</li> <li><i>Equivocal:</i> A borderline result. Result falls w/in <math>\pm 10\%</math> of the positive threshold. Resubmission may be indicated.</li> <li><i>Positive:</i> Indicates immunity by vaccination or infection.</li> </ol> <p><b>PCR</b></p> <ol style="list-style-type: none"> <li>Not Detected <ul style="list-style-type: none"> <li>VZV nucleic acid was not detected.</li> </ul> </li> <li>Detected <ul style="list-style-type: none"> <li>VZV nucleic acid was detected.</li> </ul> </li> </ol>
Turnaround Time	<p><b>Serology:</b> 7-10 days</p> <p><b>PCR:</b> 2 days from date of receipt at CDC Contract Lab.</p>

- Detailed Alaska Public Health Laboratory information is available here: <http://www.dhss.alaska.gov/dph/Labs/Pages/publications/default.aspx>
- State of Alaska Varicella webpage: <http://dhss.alaska.gov/dph/Epi/id/Pages/Varicella.aspx>