

# Smallpox

## *Variola Virus (Orthopox)*

**Transmission:** Droplet (within 6 feet)

**Incubation:** 10 to 14 days - Infectious until all scabs separate!

**Symptoms:** Fever: 3 to 4 days

• **Rash:** Lesions evolve distally (pharynx, face, feet)

**Day 1-2** Macules - minute red spots on tongue → palate → face → forehead

**Day 2** Papules - red spots slightly raised; virus present

**Day 4-5** Vesicles - accumulation of fluid

**Day 7** Pustules - fluid becomes pus

**Day 8-21** Scabs - absorbed lesions become flat and dried

### **Smallpox:**

Pox all in same stage

Slow development

More pox on arms and legs

Present on palms and soles

### **Chicken Pox:**

Pox in several stages

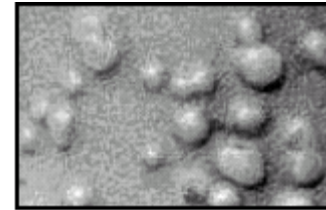
Rapid development

More pox on trunk of body

Usually absent on palms and soles

### **Vesicular/Pustular Testing Methods:**

- Shell vial & DFA - Differentiates VZV and Vaccinia
- Monoclonal IFA - Differentiates HSV and Enteroviruses
- Molecular tests - PCR and sequencing for *Variola*
- Electron microscopy - *Variola*



## Specimen Collection

Consult with State Laboratory prior to sample collection

Personnel must wear fit-tested N95 masks and have no contraindications to vaccination

### Vesicles/Pustules:

#### • Skin Sample:

Using a scalpel, remove the top of the vesicle/pustule and place in a screw-capped plastic tube

Using a swab, scrape the base of the vesicle/pustule and place the swab into transport medium. Ship both at 4°C

#### • Vesicular Fluid:

Use a 26-gauge needle and syringe to collect fluid from vesicle/pustule and place fluid in a screw-capped plastic tube.

Ship at 4°C

#### • Scab Lesions

Use a 26-gauge needle to pry off four scabs and place two scabs into two separate screw-capped plastic tubes. Ship at 4°C

#### • Touch Prep:

Using blunt edge of scalpel, scrape base of vesicle/pustule. Apply the microscope slide with progressive, multiple movement. Air dry and place in plastic slide holder; ship at 4°C

**Biopsies:** Biopsy two vesicles using a 3.5 or 4-mm punch biopsy kit

• Place one in a formalin filled jar - ship at room temperature; Do not freeze!

• Place one in a dry, screw-capped plastic container; ship on dry ice

### Serum:

• 5-mL in a serum separator tube (10-mL of whole blood separated); ship at 4°C

**Autopsy Specimens:** Sample major organs (liver, spleen, skin, lung, kidney, lymph nodes)

• Place one piece of tissue in formalin and one in a dry screw-capped container

• Ship formalin at room temperature; ship tissue on dry ice

**Refer to State Laboratory**

**610-280-3464**