



Evaluating Patients for Smallpox: Acute, Generalized Vesicular or Pustular Rash Illness Protocol

Clinical case definition of smallpox: an illness with acute onset of fever $\geq 101^\circ\text{F}$ followed by a rash characterized by firm, deep-seated vesicles or pustules in the same stage of development without other apparent cause.

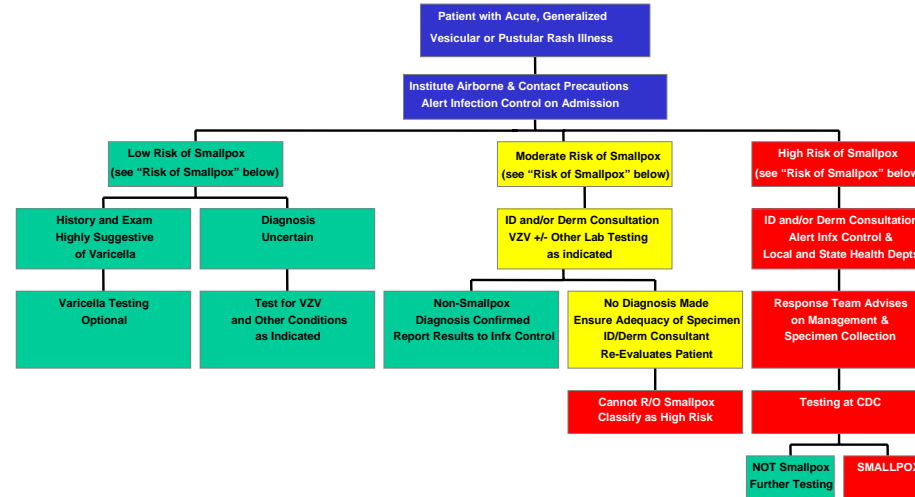
There have been no naturally occurring cases of smallpox anywhere in the world since 1977.

A suspected case of smallpox is a public health and medical emergency.

Report ALL suspected cases immediately (without waiting for lab results) to:

1. Hospital Infection Control () or ()
2. health department () or ()
3. health department () or ()

Images of Chickenpox (Varicella)



Images of Smallpox



Risk of Smallpox

High Risk of Smallpox → Report Immediately

1. Febrile prodrome (defined below) AND
2. Classic smallpox lesions (defined below and photo at right) AND
3. Lesions in same stage of development (defined below)

Moderate Risk of Smallpox → Urgent Evaluation

1. Febrile prodrome (defined below) AND
2. One other MAJOR smallpox criterion (defined below) OR
1. Febrile prodrome (defined below) AND
2. ≥ 4 MINOR smallpox criteria (defined below)

Low Risk of Smallpox → Manage as Clinically Indicated

1. No febrile prodrome OR
2. Febrile prodrome and < 4 MINOR smallpox criteria (defined below)

MAJOR Smallpox Criteria

•**FEBRILE PRODROME:** occurring 1-4 days before rash onset: fever $\geq 101^\circ\text{F}$ and at least one of the following: prostration, headache, backache, chills, vomiting or severe abdominal pain. The fever may drop with rash onset.

•**CLASSIC SMALLPOX LESIONS:** deep-seated, firm/hard, round well-circumscribed vesicles or pustules; may be umbilicated or confluent

•**LESIONS IN SAME STAGE OF DEVELOPMENT:** on any one part of the body (e.g., the face, or arm) all the lesions are in the same stage of development (i.e. all are vesicles, or all are pustules)

MINOR Smallpox Criteria

•Centrifugal distribution: greatest concentration of lesions on face and distal extremities

•First lesions on the oral mucosa/palate, face, forearms

•Patient appears toxic or moribund

•Slow evolution: lesions evolve from macules to papules → pustules over days (each stage lasts 1-2 days)

•Lesions on the palms and soles

Differentiating Varicella from Smallpox

Varicella is a common condition that is most likely to be confused with smallpox. How varicella (chickenpox) differs from smallpox:

- No or mild prodrome
- Lesions are superficial vesicles: "dewdrop on a rose petal" (see photo, above right)
- Lesions appear in crops; on any one part of the body there are lesions in different stages (papules, vesicles, crusts)
- Centripetal distribution: greatest concentration of lesions on the trunk, fewest lesions on distal extremities. May involve the face/scalp. Occasionally entire body equally affected.
- First lesions appear on the face or trunk
- Patients rarely toxic or moribund
- Rapid evolution: lesions evolve from macules → papules → vesicles → crusts quickly (< 24 hours)
- Palms and soles rarely involved
- Patient lacks reliable history of varicella or varicella vaccination
- 50-80% recall an exposure to chickenpox or shingles 10-21 days before rash onset

Common Conditions That Might be Confused with Smallpox

Condition	Clinical Clues
Varicella (primary infection with varicella-zoster virus)	Most common in children < 10 years; children usually do not have a viral prodrome
Disseminated herpes zoster	Immunocompromised or elderly persons; rash looks like varicella, usually begins in dermatomal distribution
Impetigo (<i>Streptococcus pyogenes</i> , <i>Staphylococcus aureus</i>)	Honey-colored crusted plaques with bullae are classic but may begin as vesicles; regional not disseminated; patients generally not ill
Drug eruptions and contact dermatitis	Exposure to medications; contact with possible allergens
Erythema multiforme minor	Targetoid lesions on hands and feet (including palms and soles)
Erythema multiforme (incl. Stevens Johnson Syndrome)	Major form involves mucous membranes and conjunctivae
Enteroviruses incl. Hand, Foot and Mouth disease	Summer and fall; fever and mild pharyngitis at same time as rash; distribution of small vesicles on hands, feet and mouth or disseminated
Disseminated herpes simplex	Lesions indistinguishable from varicella; immunocompromised host
Scabies; insect bites (incl. fleas)	Pruritis; in scabies, look for burrows (vesicles and nodules also occur); flea bites—patient usually unaware of flea exposure; patient not ill
Molluscum contagiosum	May disseminate in immunosuppressed persons