

**SMALLPOX CLINICAL PATHWAY (Updated 06/03/02)**  
**(NO CONFIRMED SMALLPOX CASE(S) PREVIOUSLY REPORTED)**  
**SUMC Bioterrorism & Emergency Preparedness Task Force**

**START HERE**

**Typical smallpox rash?**

- Centrifugal rash (first on face (incl. oral mucosa) and extremities (incl. soles/palms) then trunk)
- Evolves over 1- 2 wks: Maculopapular lesions → vesicular lesions often with umbilication → pustular round tense lesions → flattening of lesions → scabbing of lesions → scarring
- Lesions often painful, may be discrete, confluent, or semi-confluent; all are at the same stage of development

**Or atypical smallpox rash?**

- Prodromal erythematous maculopapular rash +/- enanthems; hemorrhagic lesions or persistently flat lesions

**With associated smallpox symptoms (onset usually before rash):**

- Fever, chills, malaise, prostration, headache, backache, abdominal pain, vomiting, delirium

YES/EQUIVOCAL

NO

- If in the Emergency Department (ED), move patient to Room 14; if in clinic, keep patient in private room
- All persons should follow infection control precautions as per [Infection Control Precautions for Suspected Bioterrorism Agent Disease](#) for all future interaction with the "index patient":  
*i.e. wear a fitted N-95 mask (call EH&S 723-8143 if you have not been fit tested) or Powered Air Purifying Respirator (PAPR), disposable yellow gown or Tyvek coveralls, gloves, goggles, hair cover, and shoe covers*
- \* Preferentially, persons with a history of smallpox vaccination should be selected for all future interactions with the "index patient"; if no such persons exist, then persons with no contraindications to the vaccine should be selected; contraindications include: history of eczema/other skin conditions, pregnancy, <18 yo, immunosuppression, allergy to vaccine components (polymyxin B, streptomycin, tetracycline, neomycin).
- Consult Dermatology Resident and Attending STAT *Call Operator 723-6661*
- Consult Infectious Diseases Fellow and Attending STAT *Call Operator 723-6661*

**Smallpox Ruled Out by Dermatology and Infectious Diseases Teams?**

NO

YES

- Notify SCCPHD STAT (408) 885-4214 Days or (408) 229-2501 Nights
- Notify Infection Control STAT Page 16167 (adult) or 18503 (peds)
- If in the ED, close ED to all patients; if in clinic, close clinic to all patients
- Call security to aid in preventing persons from entering the ED or clinic area
- Using [Guide A: Form 3B – Non-household Contact](#) from the [CDC Interim Smallpox Response Plan and Guidelines](#), record all patients, health care workers, etc. who had face-to-face (≤6 ft) contact with the "index patient" at SUMC and give copy of completed form to SCCPHD
  - Give each [Possible Smallpox Exposure Information Sheet](#), [Smallpox – Frequently Asked Questions](#) and [Bioterrorism Agent Exposure Epidemiology Tracking Form](#) to all such contacts and reassure that CDC will provide each with vaccine within a few days if the "index patient" is deemed to have smallpox
  - Treat all such contacts who are patients appropriately for their presenting complaint to the ED/clinic; if admission to hospital is warranted, admit to a negative pressure room (if one is not available, then admit to a standard private rm. and move to a negative pressure rm. as soon as possible); if admission is not warranted, treat and arrange follow-up based on clinical judgment
- Evaluate all patients who are non-contacts for their presenting complaint and decide on disposition/treatment/follow-up using standard procedures
- Regarding the "index patient":
  - Give [Possible Smallpox Information Sheet](#), [Smallpox – Frequently Asked Questions](#), and [Bioterrorism Agent Exposure Epidemiology Tracking Form](#) to the patient
  - Collect lab specimens per [Specimen Collection for Suspected Bioterrorism Agent Diseases](#) and hand carry samples to the Micro/Virology Lab
  - Admit to hospital room with negative pressure if:
 

• Signs of sepsis, respiratory distress, or encephalitis	• Petechiae, hemorrhage (hemorrhagic smallpox)
• Severe prostrating constitutional symptoms	• Persistently flat lesions (malignant smallpox)
• Pain control not achievable as an outpatient	• Confluent lesions
• Lack of social support at home	• Other reasons based on clinical judgment
  - Otherwise, place in voluntary home isolation (or home quarantine if mandated by the SCCPHD) and give [Smallpox – Home Care Instructions](#)

- Evaluate patient using standard procedures

- Reassure
- Disposition, treatment, and follow-up based on clinical judgment

**IF SMALLPOX IS CONFIRMED, "CODE ZEBRA" WILL BE CALLED BY THE INFECTIOUS DISEASE ATTENDING INVOLVED IN THE PATIENT'S CARE IN ORDER TO COORDINATE:**

- *Converting G1/H1 into a Dedicated Type C Facility with an Assessment Area and Ward and setting up a Triage Area adjacent to G1/H1*
- *Calling pre-designated health care workers to staff the G1/H1 Ward, Assessment Area, and Triage Area and arranging vaccination for all via CDC*
- *Implementing controlled entry into the hospital buildings including placing signs directing all patients who have any rash or known exposure to smallpox to the Triage Area adjacent to G1/H1*
- *Implementing daily hospital tracking for smallpox cases by the SUMC Infection Control Department using [Guide A: Form 7 – Smallpox Hospital Surveillance Daily Tracking](#) from the [CDC Interim Smallpox Response Plan and Guidelines](#)*
- *Arranging with the SCCPHD or other officials for Public Service Announcements to be made directing persons with suspected smallpox to designated sites within the Santa Clara County that have been set-up to assess and treat smallpox patients*

## Examples of Early Smallpox Rashes and EnantheMs

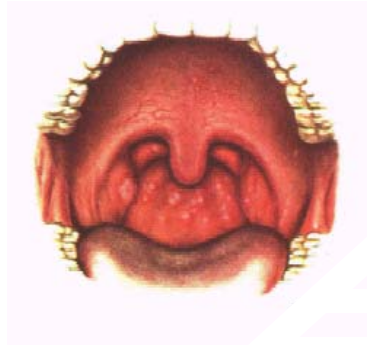
A



B



C



- A. Erythematous prodromal rash\* on the upper arm, near the sites of vaccination performed 8 days earlier but sparing the skin immediately adjacent to the vaccination lesions.  
(Reprinted from: Fenner F, DA Henderson, I Arita, et al. *Smallpox and its Eradication*. Geneva: WHO, 1988.)
- B. Measles-like prodromal rash\* on the lateral side of the trunk on the 4<sup>th</sup> day of illness.  
(Reprinted from: Fenner F, DA Henderson, I Arita, et al. *Smallpox and its Eradication*. Geneva: WHO, 1988.)
- C. The enanthem. Lesions occur throughout the oropharynx and in the nasal cavity, as well as on the tongue. The lesions on the palate are usually smaller than those on the posterior pharyngeal wall and tonsil.  
(Reprinted from: Uchida M. *Atlas of the Acute Infectious Diseases. Volume 2. Smallpox*. Tokyo: Kanchara Shuppan, 1955 [Japanese].)
- \* The prodromal rashes are best seen in fair-skinned persons and are more common in those previously vaccinated.

## Appearance and Distribution of Established Smallpox Rash

### APPEARANCE

Day 3



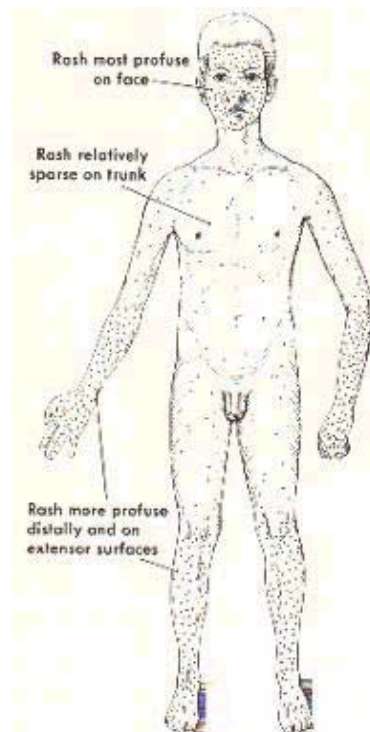
Day 5



Day 7



### DISTRIBUTION



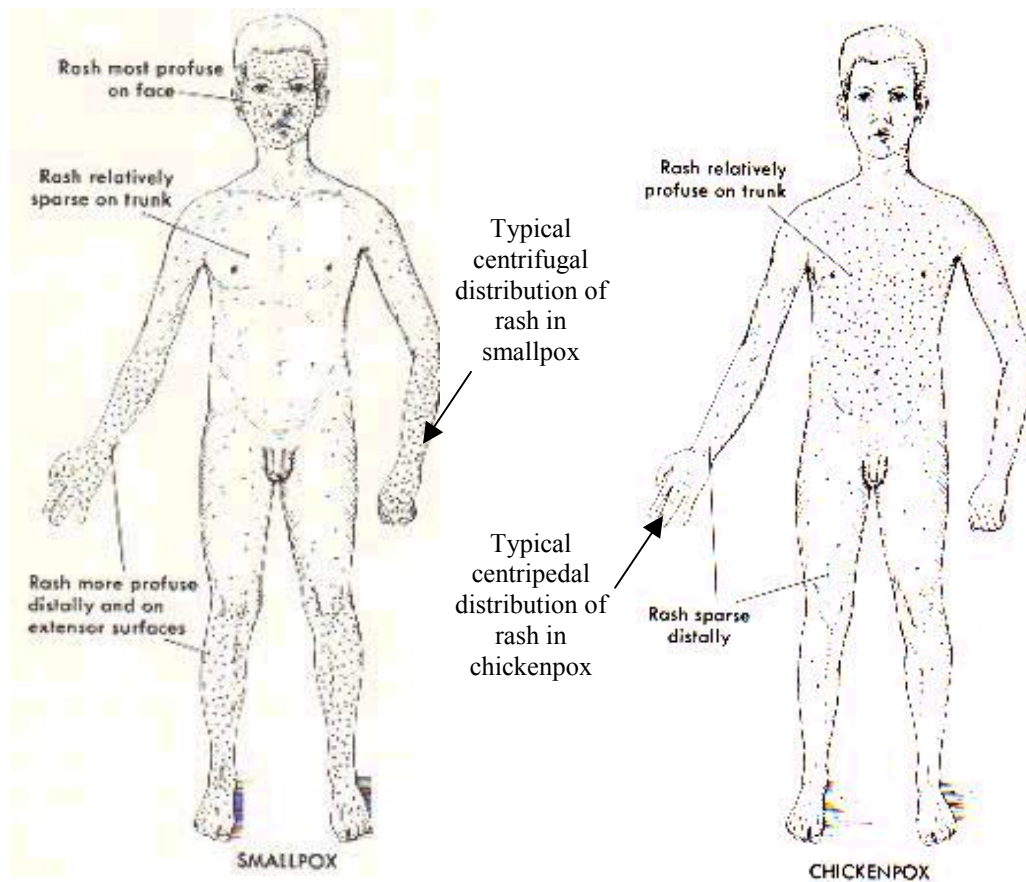
Typical established smallpox rash at days 3, 5, and 7 of evolution. Smallpox lesions are denser on the face and extremities than on the trunk; they appear on the palms of the hand; and they are similar in appearance to each other. They progress from macules to papules to pustules to scabs.

(Reprinted from: [http://jama.ama-assn.org/issues/v281n22/fig\\_tab/jst90000\\_f2.html](http://jama.ama-assn.org/issues/v281n22/fig_tab/jst90000_f2.html))

Typical centrifugal distribution of established smallpox rash

## Comparison of Smallpox to Chickenpox

	SMALLPOX	CHICKENPOX
FEVER:	2-4 days before the rash	At the time of the rash
RASH:		
<i>Evolution</i>	Evolves slowly over 1-2 wks	Evolves quickly over 5-7 days
<i>Appearance</i>	Lesions at the same stage of evolution	Lesions at all stages of evolution
<i>On palms and soles</i>	Usually present	Usually absent
<i>Distribution</i>	Centrifugal (see below)	Centripetal (see below)



Unlike chickenpox lesions, smallpox lesions are more dense on the face and extremities than on the trunk; they appear on the palms of the hand and soles of the feet; and they are similar in appearance to each other. In chickenpox, one would expect to see, in any area, macules, papules, pustules, and lesions with scabs.

**NB: Children vaccinated for chickenpox may still develop chickenpox although it is usually only a mild infection with minimal number of lesions.**