

Department of Defense
Health Care Provider's
Briefing

SMALLPOX: Disease & Vaccine

USNH Version: 9 Jan 03
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Purpose

- Purpose of this briefing is to prepare health-care providers to understand smallpox & smallpox vaccination
- Refer to **DoD Smallpox Response Plan** (www.vaccines.army.mil/smallpox.asp) for information about:
 - Surveillance for fever-rash illness
 - Epidemiologic response (contact tracing)
 - Other smallpox and vaccination issues

Key Messages

- **Smallpox would disrupt military missions, because it is contagious and deadly**
- **Smallpox vaccine prevents smallpox, but requires very careful use**
- **Preserving the health and safety of our people are our top concerns**
- **Smallpox protection helps our War on Terrorism: New threats require new measures of force protection**

Threat

1. Smallpox would disrupt military missions, because it is contagious and deadly

- **Smallpox is a contagious disease that spreads from one person to another**
- **Before smallpox was eradicated, it killed many millions of people over hundreds of years**
- **Terrorists or governments hostile to US may have or could obtain variola virus**
- **A smallpox outbreak would significantly affect military readiness**

Smallpox

Threat to Fighting Forces

- **A smallpox outbreak would significantly degrade combat mission capability, because almost all troops are susceptible**
- **An outbreak could restrict movement of troops, aircraft, ships**
- **Smallpox would stress medical operations to maximum capacity**

Vaccines

Preserving the health and safety of our people are our top concerns

- **Vaccines will keep you and your team healthy**
- **Healthy troops complete their missions**
- **Vaccines:**
 - **Shield you from dangerous germs**
 - **Keep units fit to fight**
 - **Help you return home safely**
- **Vaccines saved more lives than any other medical invention, more than antibiotics or surgery. Only clean water has saved more lives**

General Public's Knowledge

- 89% knew smallpox was contagious
- 30% & 63% thought smallpox occurred in last 5yrs in US or world, respectively
- 78% believe medical treatment is available to prevent death or serious dz after sx dev't
- 25% stated that they would likely die from the vax
- 41% were likely to have serious illness from vax
- only 27% thought that contact with recently vaccinated person could result in serious infection
- only 7% reported a contraindication for vax'n
- *** majority (79%) would decline vax'n if docs declined

Clinical Presentation



Last case of Variola Major (Bangladesh, 1975)

Smallpox Threat

- Smallpox eradicated from the world in 1980
- Entire world's population is **susceptible**
- Significant **person to person** transmission
- Easily manufactured and disseminated
- **Low inoculum** needed
- Infamous for morbidity & mortality
- Significant **fear factor** & panic
- Overwhelm medical facilities
- No specific chemotherapy
- **Limited vaccine** supply
- Physicians are unfamiliar with the disease

**= Perfect
BioAgent**

Smallpox (Variola) Virus

- **Orthopox (dsDNA) virus**
 - vaccinia, variola, cowpox, monkey pox
- **Only human reservoir**
- **Infectious Dose**
 - unknown, presumedly only a few virions
- **Survivability (24 hrs to years)**
 - Inactivated by UV light, heat, bleach, alcohol, Lysol®
- **Transmission**
 - aerosol, respiratory, contact, fomites
 - “close” contacts = <2meters, 1-3hrs
 - 58% household contacts, avg 3-5/case



Smallpox Clinical Disease

- **Incubation is 7-17 days** (not infectious!)
- **Prodrome** (lasts 1-4 days)
 - Acute onset of fever (102-104°F), rigors, malaise, headache, backache, vomiting, **“self-quarantine”**
 - Skin is seeded with virus
- **Enanthem**
 - oral / GI / resp lesions
 - pt appears less ill as fever drops
 - **“herald spots”** soon develop

Smallpox Clinical Disease

- **Exanthem**
 - **Centrifugal** distribution
 - Lesions progress rapidly (**synchronized**)

Macules



Papules



Vesicular pustules



Scabs



Smallpox Infection Timeline

Post-exposure vaccination fully or partially protective through day 3 after exposure.

Average smallpox case infects 3 to 5 people. About half of close contacts are infected.

First symptoms develop 7 to 17 days after exposure; average depicted here as day 11.

After symptoms develop, isolate case. Trace and vaccinate contacts.

Communicability	Exposure = Day 0	Symptoms	Day of Symptoms	Disease Progress		
Not contagious	Day 1	No symptoms		Virus introduced to respiratory tract		
	2					
	3					
	4					
	5					
	6					
	7					
	8					
	9					
	10					
	Contagious			11	First symptoms	Day 1
12		2				
13		3				
Very contagious		14	Rash	4		Fever, backache, headache, nausea, malaise
		15		5		Macules (spots)
		16		6		Papules (bumps, pimples)
		17		7		
		18		8		
		19		9		Vesicles (blisters)
		20		10		Pustules (pus-filled blisters)
21		11				
22	12					
Contagious	23	Scabs contagious	13	Scabs		
	24		14			
	25		15			
	26		16			
	27		17			
Not contagious	28	Not contagious	18	Scars		
	29		19			
	30		20			
	31					
	32					

Smallpox Lesions

- Vesicles often umbilicated
- Pustules raised, round, firm, deeply embedded, well-circumscribed, “shotty” and quite painful
- Lesions found on palms and soles ($\geq 50\%$ cases) with extensor $>$ flexor
- This stage of rash associated with the recurrence of fever
- Extent of rash parallels severity of case

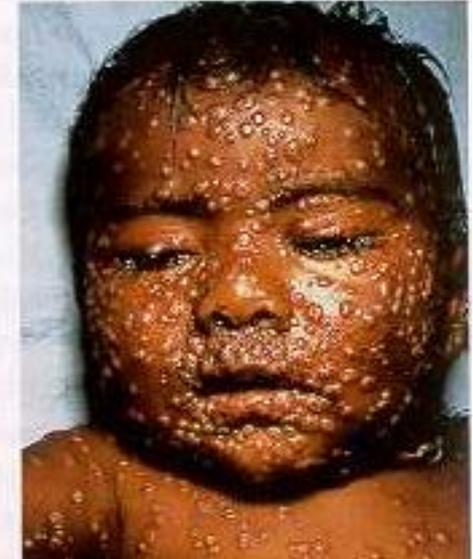
a. Third Day of Rash

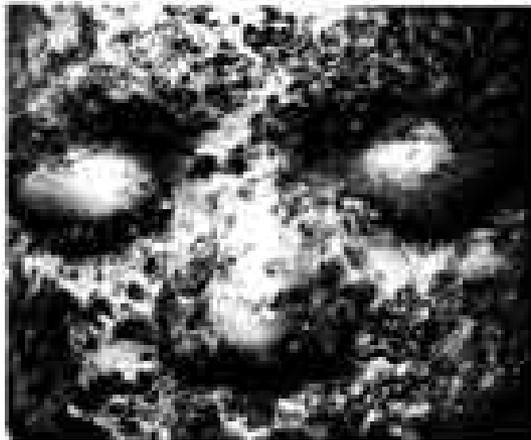
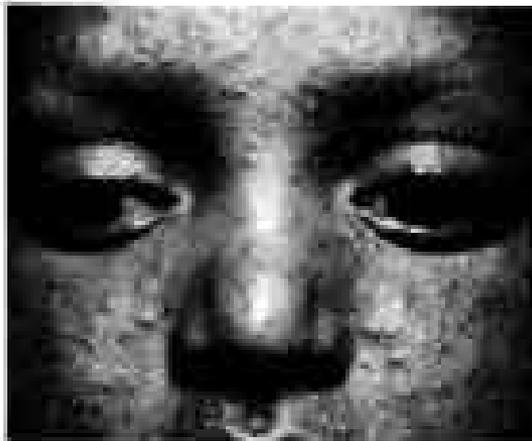


b. Fifth Day of Rash



c. Seventh Day of Rash





Smallpox Clinical Features

- **Scabs form 8-14 days after disease onset**
 - Virus may be recovered from scabs
 - Enforce isolation until all scabs separate
 - Depressed depigmented scars after separation
- **Different Variants & Presentations**
 - **Variola Major-** 30% (vs 3%) Case Fatality Rate (CFR)
 - **Variola Minor-** 1% CFR
 - **Flat (Malignant)-** severe toxicity 95% (vs 66%) CFR
 - **Hemorrhagic-** severe systemic toxicity, extensive petechial/mucosal hemorrhage before pox formation

Smallpox

Clinical Variants In Partially Immune

- **Modified type**
 - Sparse skin lesions evolving variably and rapidly, often without pustules
 - Crusting occurring as early as day 7 of illness
- **Variola sine eruptione**
 - Fever, sore throat, conjunctivitis
 - No systemic toxicity or exanthem
 - Still infectious, but diminished shedding (?)
 - Subclinical infection (<48hrs) “have not been shown to transmit the infection to contacts”

Variola Complications

- **Bacterial superinfection of lesions (uncommon)**
- **Arthritis and Osteomyelitis (2%)**
- **Respiratory complications (~8th day)**
- **Encephalitis**
- **Death (10-16th day)**
 - **overwhelming viremia, circulating immune complexes or uncontrolled immune response**
 - **CFR for Ordinary Variola Major = 30%**
 - **CFR for children < 1yr = 40-50%**
 - **CFR for flat (kids) and hemorrhagic (pregn/adults) = >90%**
- **Sequelae- scarring, blindness, limb deformities**

Diagnosis & Management



Smallpox Differential Diagnosis

Clinical Dx

	<u>VARIOLA</u>	<u>VARICELLA</u>
Incubation	7-17 days	14-21 days *
Prodrome	2-4 days*	Minimal/none
Fever	Predominant	Minimal/none
Associated Sx	Significant	Minimal/none
Distribution	Centrifugal	Centripetal
Progression	Synchronous	Asynchronous
Scab formation	10-14 days	4-7 days *
Scab separation	14-28 days *	<14 days

Smallpox Differential Diagnosis

Lesions



Smallpox

- Deep, hard lesions
- Round, circumscribed
- Confluent or umbilicated
- Lesions at same stage of development

Varicella

- Superficial lesions
- Not well circumscribed
- Confluence & umbilication uncommon
- Lesions at all stages of development

Differential Diagnosis

- Disseminated herpes zoster/simplex
- Impetigo
- Drug eruptions
- Contact dermatitis
- Erythema multiforme
- Enteroviral infections
- Molluscum contagiosum



Figure 1. Multiple Hemorrhagic Vesicles and Crusted Papules in the Same Stage of Development on the Face and Scalp.

Smallpox Major Criteria



1) Febrile Prodrome

- 1-4 days prior to rash
- fever $\geq 101^{\circ}$ F
- at least 1 systemic complaint*

2) Typical rash lesions

- firm/hard, deep, round, circumscribed

3) Synchronous lesions

- all in same stage of development

* prostration, headache, backache, chills, vomiting or abdominal pain

Smallpox Minor Criteria

- 1) Centrifugal distribution (face/extremities)**
- 2) First lesions on oral mucosa/face/arms**
- 3) Patient appears toxic/moribund**
- 4) Lesions progress slowly (1-2 d duration)**
- 5) Lesions on palms and soles**

Risk of Smallpox by Hx/PE

- **High Risk**
 - febrile prodrome
 - classic smallpox lesions
 - same stage of development
- **Moderate Risk**
 - febrile prodrome
 - 1 major OR > 4 minor criteria
- **Low Risk**
 - no febrile prodrome
 - febrile prodrome and < 4 minor criteria



Algorithm



Smallpox Diagnosis

- **Rapid diagnostic testing for VZV or HSV** (DFA, IFA, PCR) also Tzanck prep
- **Laboratory findings**
 - Light Microscopy -- Guarnieri (inclusion) bodies
 - Electron Microscopy -- “brick-shaped”
 - Gel diffusion test
 - These will not differentiate variola, vaccinia, cowpox or monkeypox
- **Definitive tests**
 - Polymerase chain reaction (PCR), nucleic acid testing, culture, serologic testing
 - performed in BSL-4 lab

Smallpox Management

- **Recognize vesicular exanthem** in possible BW theaters as possible variola
 - may have atypical presentation or present initially with a viral illness
- **International emergency**- immediately report to command and public health authorities
- **Strict respiratory & contact isolation PPE...**
 - Properly fitted N-95 mask
 - Gloves, gowns, shoe covers
 - Negative pressure room (treat like VZV)
- **Supportive Care** for hydration, reduce pain, fever, etc.
- **Antiviral agents?** Cidofovir effective in animal and *in vitro* studies (IND protocol, no human efficacy data)

Smallpox Epidemiology

- Less contagious than measles, varicella, pertussis and influenza
 - Interval of 2-3 wks between cases
 - Secondary cases generally limited to household & hospital contacts
 - Interruption of transmission
 - isolation of smallpox patients
 - locate/vaccinate contacts (1° and 2°)
 - isolate contacts who become ill
- “surveillance & containment” “ring vaccination”**

Smallpox Vaccination



NY Epidemic 1947

Smallpox Vaccine in History

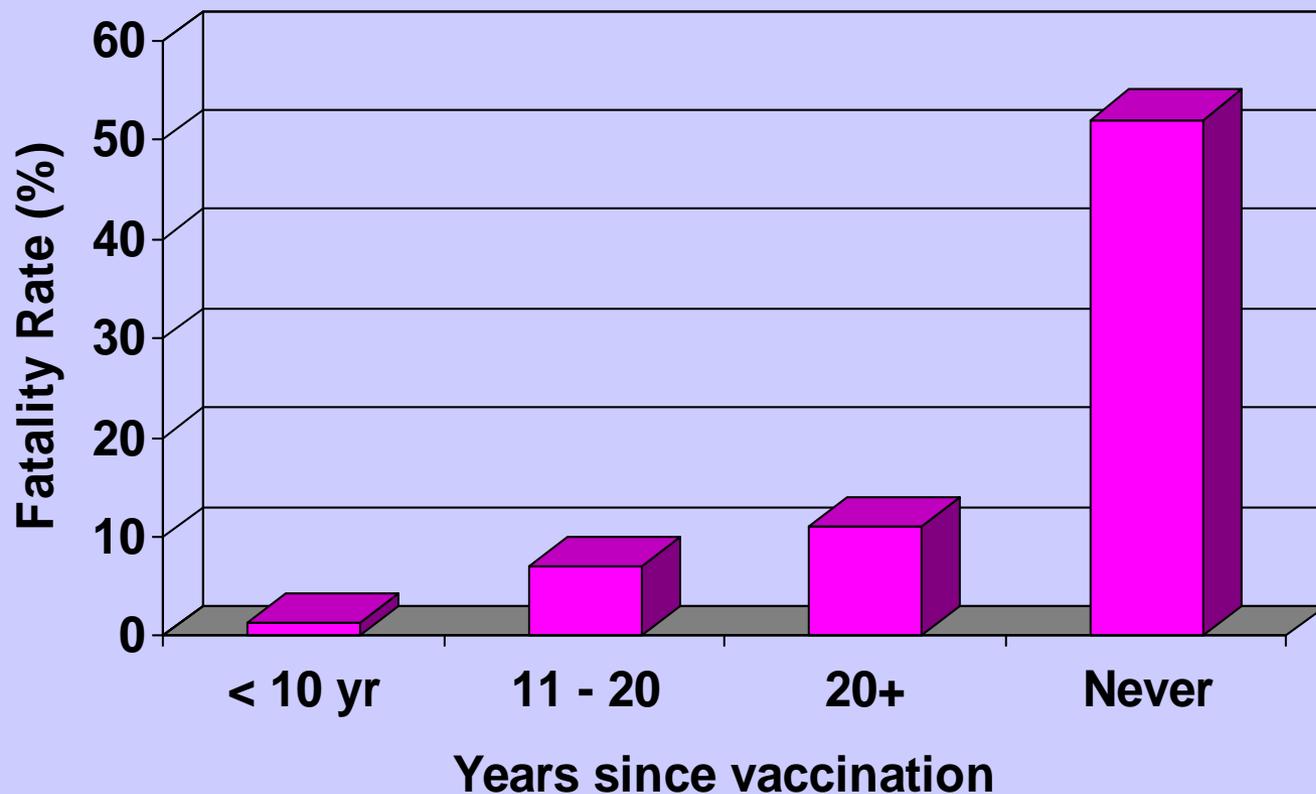
- **1776:** G. Washington orders variolation of Continental Army
- **1796:** Edward Jenner uses cowpox virus as "vaccination"
- **1812:** War Dept orders Jennerian vaccine of US troops
- **1931:** Dryvax[®] licenced by FDA
- **1949:** Last case of smallpox in US (TX)
- **1967:** WHO initiates aggressive campaign against smallpox
- **1971:** Discontinuation of routine vax'n in US
- **1976:** Discontinuation of vax'n of healthcare workers in US
- **1977:** Last case of natural smallpox (Somalia)
- **1980:** WHO declares Earth free of smallpox
- **1984:** DoD restricts vaccination to recruits at basic training
- **2002:** ~ **65% of AD personnel never vaccinated** for smallpox; almost whole force is susceptible to infection

Smallpox Vaccine

- **General:** *Dryvax*[®] (*Wyeth Laboratories*)
 - **Content:** lyophilized live Vaccinia virus
100 dose vial, FDA-approved (1:5 IND protocol)
 - **Diluent:** 50% glycerin, polymyxin B, streptomycin, tetracycline, neomycin, phenol (as preservative)
 - **Delivery:** Intradermal inoculation with bifurcated needle (scarification method)
 - **Result:** pustular lesion or area of induration surrounding a central lesion (scab or ulcer) 6-8 days after vaccination
 - **Efficacy:** 95% primary vaccinees (within 10d)
 - **Post-exposure:** within 3-4 days, no or mild disease.
If given within 4-7 days, offers some protection.
 - **Duration:** 3-5yrs (primary), ~5-10yrs (secondary)

Duration of Protection

Smallpox Fatality Rate by Time Since Vaccination Europe, 1950 - 1971*



*Mack, TM. J Infect Dis 1972; 125:161-9

Smallpox Vaccine Contraindications

Some people should not get smallpox vaccine, except under emergency situations. A Medical Exemption is given IF:

- **Allergies to vaccine components**
 - streptomycin, tetracycline, polymyxin B, neomycin
- **Pregnant or Breastfeeding**
- **Immunosuppression or Immunodeficiency**
 - HIV, cancer, transplant, autoimmune d/o, steroids, meds, chemotherapy, XRT
- **History or current eczema / atopic dermatitis**
 - scaly, red itchy rash, lasts ~2wks, intermittent
- **Household/close contacts with above**

Smallpox Vaccine Precautions

- **Households with Infants** (< 1yr old)
 - relative contraindication
 - want to minimize transmission
- **Active derm lesions**
 - psoriasis, burns, impetigo, uncontrolled acne, shingles, chickenpox, contact dermatitis
 - relative... may give vax once lesions controlled
- **Women should not become pregnant** (x4wks)
- **Passive Immunity (VIG)**
 - only for severely immunocompromised, or contacts w/ Vax contraindications



Vaccine Safety

- Carefully read & complete screening form
 - You are helping accurately document that it is safe to give you the vaccine
- Ask questions if you are unsure
- Contact family members who may know about childhood history of recurrent rashes like eczema
- Talk to close contacts and family members about the vaccination program and safety precautions
- Ask for assistance at any point, if needed by you or your close contacts or if you have safety concerns

CONTENTS: 100 STERILE NEEDLES

BIFURCATED VACCINATING NEEDLES

STERILE - SINGLE PATIENT USE ONLY

DO NOT RESTERILIZE

CAUTION: Federal law restricts this device to sale by or on the order of a physician.

Part Number: PB-01000-000-00

MANUFACTURED BY:
PRECISION MEDICAL PRODUCTS, INC.
DENVER, PA 17517 USA
www.pmp.net



One VENTED NEEDLE for drug reconstitution
CAUTION: Federal law restricts this device to sale by or on the order of a physician.
STERILE - NONPYROGENIC
DISPOSABLE - Single patient use only
10240 10241
EXP 2/01
BRAUN
Braun Medical Inc.
Billerica, MA 01821
Made in USA



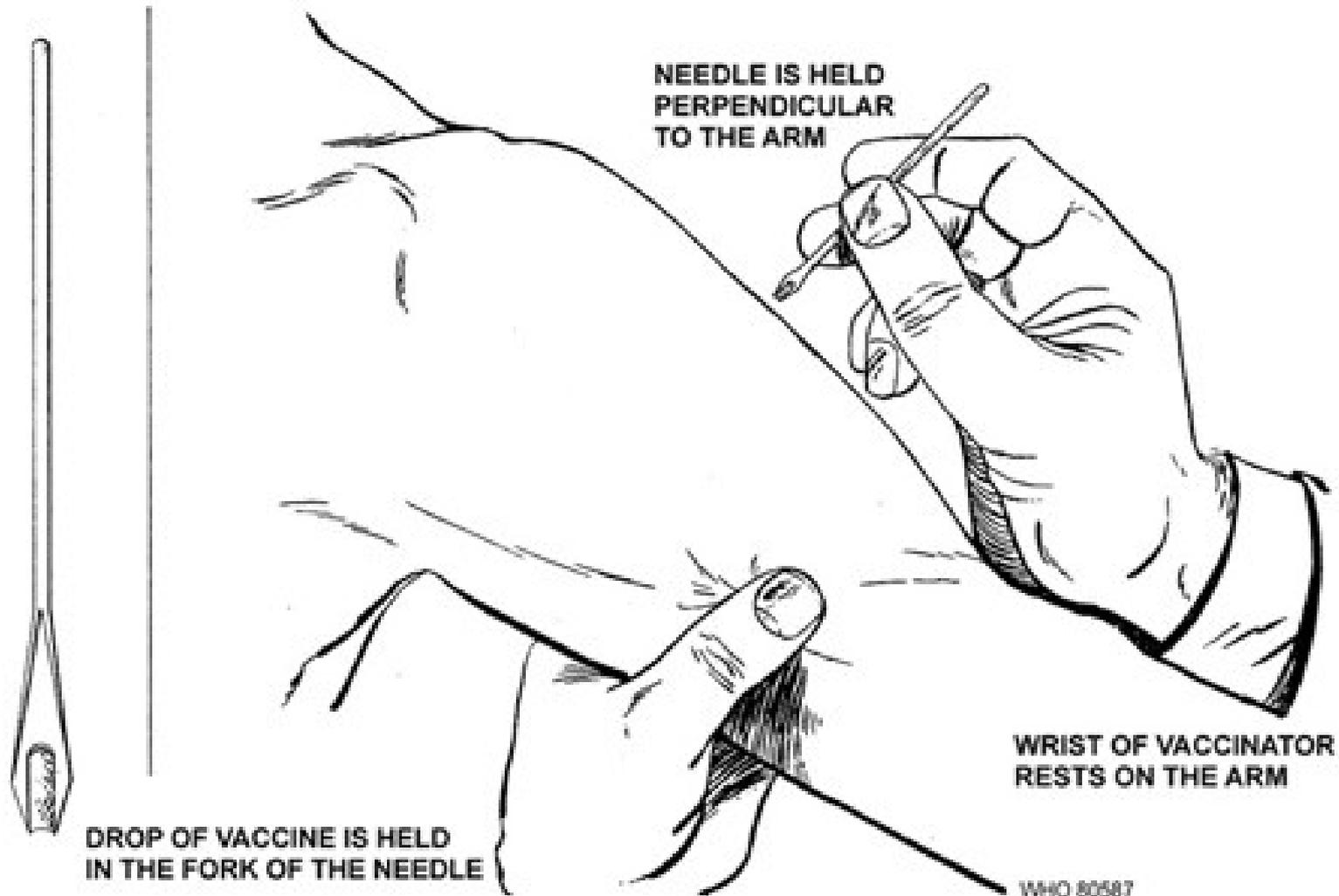
Vaccination Technique

- **Site:** Skin over deltoid or posterior arm over triceps
- **Cleanse site** (soap & water, acetone or alcohol)
- **Multiple-puncture technique:** uses bifurcated needle inserted vertically into the vaccine vial
- **Primary (first) vaccination:** 3 punctures, rapidly in 5 mm area, with strokes vigorous enough to cause a trace of blood after 15-20 seconds
- **Revaccination:** 15 punctures
- **Evidence of prior smallpox vaccination:**
(descending order of reliability)
 - medical documentation
 - characteristic Jennerian scar
 - entry into U.S. military service before 1984
 - birth in the United States before 1970

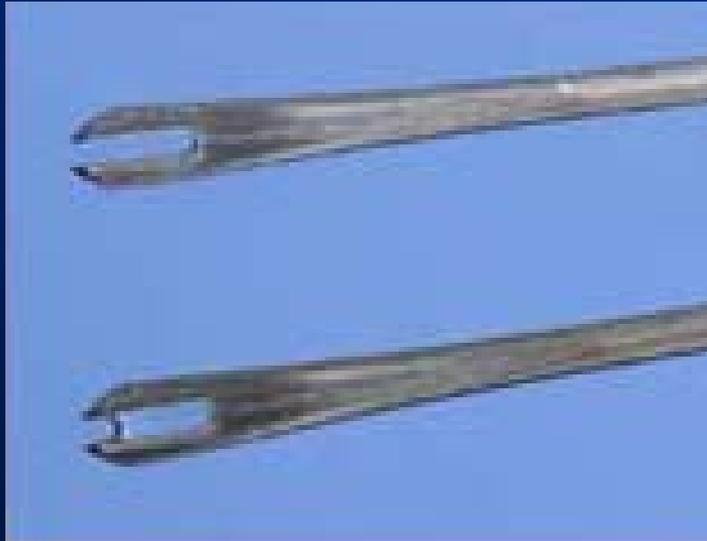


Vaccination Technique

MULTIPUNCTURE VACCINATION BY BIFURCATED NEEDLE



Vaccination Technique

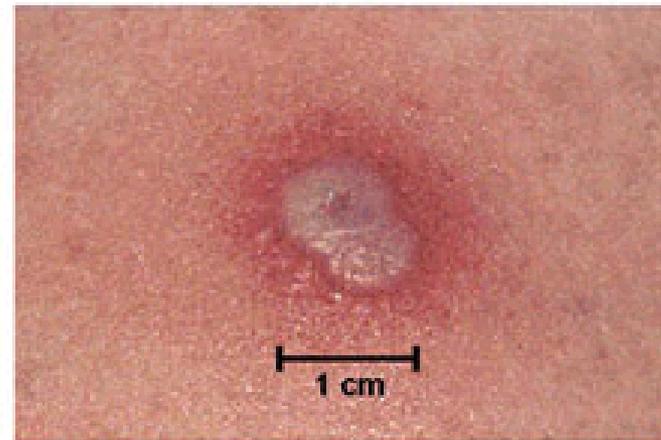


Typical Reaction

Primary Vaccination Site Reaction



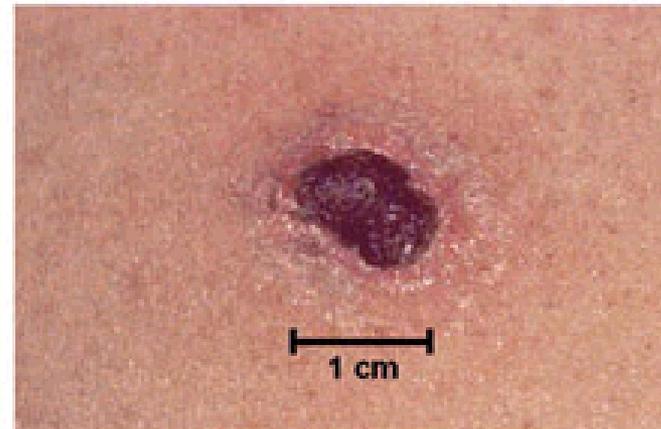
Day 4



Day 7



Day 14



Day 21

Smallpox Vaccination

Vaccination assessed 6-8 days later:

- Major (primary) reaction
 - successful vaccination s/p viral replication
 - vaccinee considered protected
- Equivocal reaction
 - lack of an appropriate immune response
 - indicates:
 - impotent vaccine
 - poor vaccination technique
 - previously immune
 - allergic reaction w/o immune response
 - immune suppression

Revaccination

Revaccination, if no take:

If no reaction:

- Repeat vaccination with 15 punctures (jabs)
- Do not revaccinate more than once in short term

If still no (suboptimal) reaction after 2nd attempt:

- If primary vaccination: Refer for immunologic evaluation.
- If previously vaccinated: Consider medically immune

Revaccination, booster interval:

- Booster if > 3-5 yr elapsed after first vaccination
- Booster if > 10 yr elapsed after later vaccination

Documentation

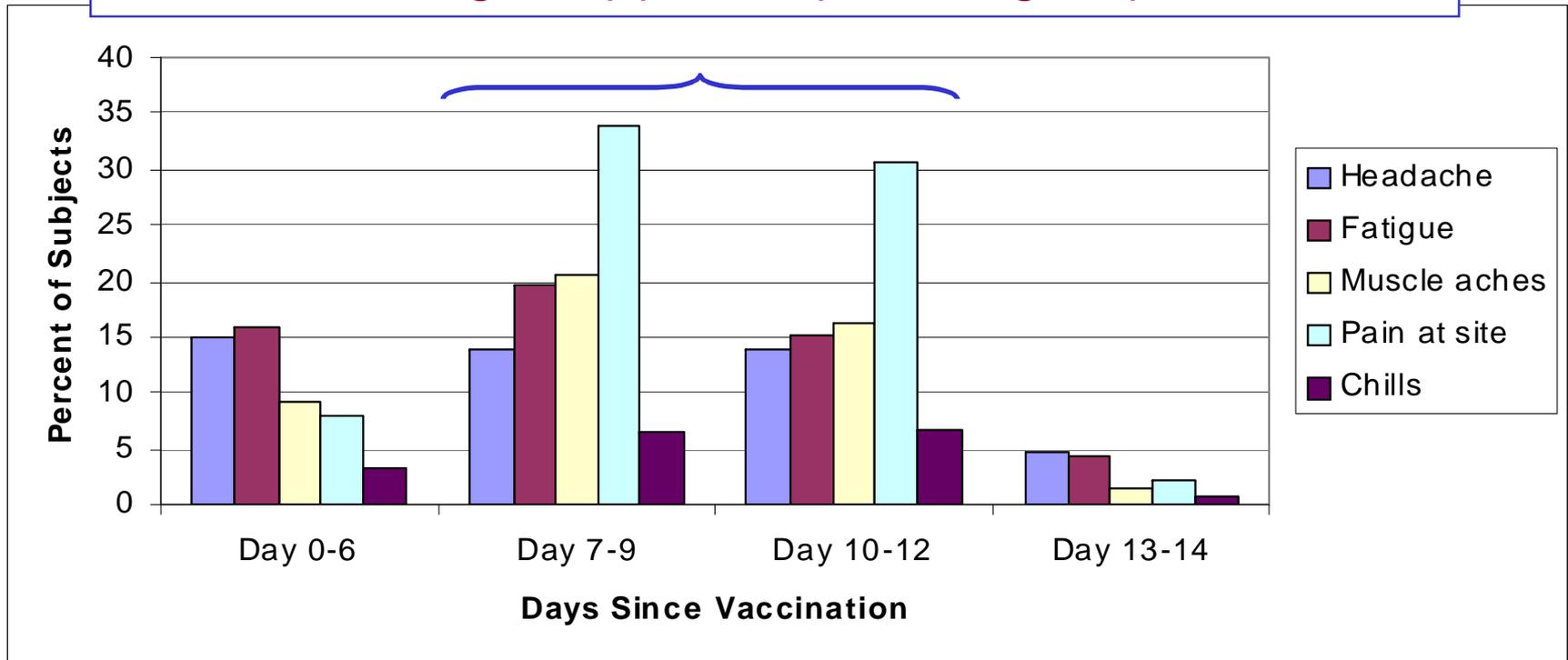
- **Screening:** Recorded on SF600; Contraindications recorded on SF600 & DD2766
- **Vaccination:** SF600, SF601, DD2766 and SAMS
- **Confirmation of successful vaccination:**
 - Instruct all: Come back to clinic for documentation, **ESPECIALLY** if no characteristic lesions develop
 - Recorded in medical record as above
 - May be recorded on PHS-731 (yellow card) International Certification of Vaccination
- **Adverse events:**
 - Medical records, VAERS, VHC access
- **USD(P&R):** Services will audit immunization tracking system

Side Effect Profile



Frequency of Moderate to Severe Symptoms After Primary Smallpox (Vaccinia) Vaccination, NIH Trial

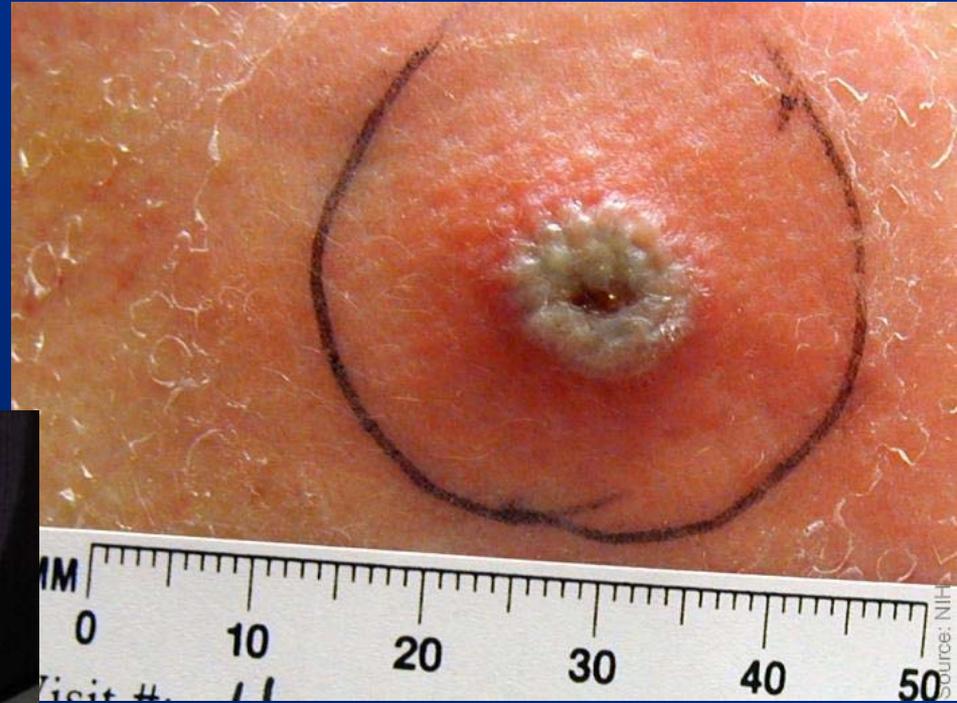
Reactogenicity peaks days 7 through day 12



Adapted from Frey, et al. NEJM 2002;346:1265-74. (Example of IND trial) 23

Normal Variants

Erythema



Edema

Normal Variants



Lymphangitis

Satellite Lesions



Adverse Events

- Otherwise rare, if adequate screening and appropriate precautions
 - In past, about 1,000 out of 1,000,000 (0.1%) people had reactions that were serious, but not life-threatening
 - Most involved vaccine virus elsewhere on body (autoinoculation)
 - Many preventable through better hand washing!
 - Can significantly reduce risk of side effects, by exempting people with immune problems or certain skin conditions
- 14 - 52 people per 1,000,000 (.005%) primary vaccinees had potentially life-threatening reactions
 - 1 - 2 people of 1,000,000 primary vaccinees may die (PVE/PV)
 - 1 for every 4,000,000 secondary vaccinee may die
- Serious side effects are less common w/ revaccination
 - Occurs 10x more often in primary vax'n
 - More frequent in infants, than kids/adults (now only vax >18yo)

Adverse Reactions

- See 16-panel CDC color brochure:
 - *Smallpox Vaccination: Methods & Reactions*
- See also additional images at www.bt.cdc.gov/training/smallpoxvaccine/reactions



A/E - Autoinoculation



- Most commonly on face, eyelid, nose, mouth, rectum, & genitalia
- Most lesions heal w/o specific therapy, but some scarring.
- Rate = 1/1890 (529)

A/E - Generalized Vaccinia



- Generalized viremia resulting in pustules, self-limited, generally no therapy, rarely “toxic”
- Other rashes can occur (incl. E. multiforme), but generally afebrile
- Rate = 1/4,000 (242)

A/E - Progressive Vaccinia



- *aka vaccinia necrosum*
- Progressive necrosis associated with cellular (+/- humoral) immune deficiency.
- Once widely fatal, can treat with VIG, cidofovir
- Rate = 1/600,000 (1.5)

A/E - Eczema Vaccinatum



- Localized or systemic dissemination of vaccinia, with either active or quiescent dz in patients with eczema, atopic dermatitis, or other exfoliative dermatitis
- 1/3 occurs in contacts
- May be severe or fatal
- Rate = 1/25,000 (39)

A/E - Post Vaccinial Encephalitis

- Primarily affects primary vaccinees
- Highest risk among children <1 yr
- Believed to result from autoimmune or allergic reaction
- Frequently fatal or permanent sequelae
 - ~25% die, ~25% sequelae
- Rate = 1/83,000 (12)

Post-Vaccination Process

Post Vaccination Checks

- Check site qDay before shift
- Dressing changes available BID
 - AM (0615 - 0800)
 - PM (1800 - 1930)
- Confirm take at days 6-8 (preprinted SF600)

Post Vaccination Care

- All care is to be handled by Sick Call
 - ensures conformity, adequate tracking, etc.
- Complications to be reported to VAERS via EPI office

Post-Vaccination Process

Staff Sick Call

- All follow ups are to be on pre-printed SF600's (will be available on U-drive)
- Utilize provided ICD-9 codes for efficiency, accuracy and consistency.
- Patients should notify ALL providers during the subsequent 30days of their recent vaccination even if for unrelated problem.
- “Treat all patient concerns with care: some symptoms may not be related to vaccination but all deserve individual attention.”

– CNO Draft Msg 12/02

Post-Vaccination Process

Management of Potential Vaccinia cases

- All vaccination site follow ups are to be on pre-printed SF600's (if outpatient, if appropriate)
- Whether Inpatient or Outpatient:
 - “Treat like herpes” - utilize contact precautions
- In determining etiology of complaint...
 - can consider viral culture or PCR
 - consider pharyngeal swab, blood or tissue specimen
- Already have ID and Immunology contacts at TAMC if necessary for consultation (on SMERT)

Serious Adverse Events

- Serious reactions that may require medical attention:
 - Accidental spread of virus to another body part or person
 - Widespread rash where sores break out away from vaccination site (generalized vaccinia)
 - Allergic rash after vaccination (erythema multiforme)
- Life-threatening reactions that need immediate attention:
 - Serious skin rashes in people such as those with eczema or atopic dermatitis (eczema vaccinatum)
 - Ongoing infection of skin with tissue destruction (progressive vaccinia or vaccinia necrosum)
 - Postvaccinal encephalitis, inflammation of the brain

Treatment of Adverse Events

- Be alert for serious, rare, adverse events after vaccination (e.g. pericarditis, osteomyelitis, etc.)
 - most of our previous primary data is from young kids
- Consult as appropriate with critical care, dermatology, neurology, allergy/immunology, infectious disease, or other subspecialist(s).
- Some conditions respond to vaccinia immune globulin (VIG) and/or Cidofovir
 - VIG consists of human IgG antibody from people vaccinated with smallpox vaccine
 - VIG and Cidofovir available only under IND protocol (USAMRIID vs. TAMC)

VIG & Cidofovir

	VIG	Cidofovir
Post Vaccinial Encephalitis	X	X
Eczema Vaccinatum	Yes	Yes
Progressive Vaccinia	Yes	Yes
Generalized Vaccinia	Yes	Yes
Ocular Auto-inoculation	Yes	Yes
Vaccinial Keratitis	X	X
Smallpox	X	Yes

Adverse Event Reporting

- **Vaccine Adverse Event Reporting System (VAERS)**
 - FDA and CDC review 100% of adverse-event reports submitted to VAERS
 - Anyone can submit a VAERS form
 - Reporting with medical help is preferred
- **DoD requires a VAERS form submission for:**
 - Loss of duty 24 hours or longer (≥ 1 duty day)
 - Hospitalization
 - Suspected vaccine vial contamination
- **Other submissions encouraged**

Report to VAERS at www.vaers.org or call 800-822-7967

Specific Topics



Co-Administration with Other Vaccines

- ACIP accepts administration of live and inactivated vaccines simultaneously or at any interval
- The only major restriction to combining vaccinations is with multiple live-virus vaccines
 - Either give simultaneously or separate by 28+ days
- Separate varicella (chickenpox) and smallpox (vaccinia) vaccinations by 28 days, to avoid confusing lesions
- Do not administer other vaccines near smallpox site

Blood Donation

- **Because of viremia and other concerns regarding vaccinia transmission:**
 - **Defer for 21 days or when the scab spontaneously falls off whichever is longer**
- OR**
- **Defer for 2 months if scab is removed**

HIV Infection

- HIV infection is a bar to smallpox vaccination
- Service Members will be up-to-date with HIV-screening before smallpox vaccination
- DoD civilian employees and contractors will be offered HIV testing in confidential setting, with results before vaccination
- HIV testing recommended for anyone with history of risk factor for HIV infection, especially since last HIV test, and not sure of HIV-infection status
- Because known risk factors cannot be identified for some people infected with HIV, people concerned they could be infected should be tested

Pregnancy & Infant Care

- **Defer routine smallpox vaccinations while pregnant:**
 - When pregnant women get smallpox vaccine, pregnancy usually goes well
 - In rare cases, vaccine caused fetal vaccinia (50 cases)
- **Avoid getting pregnant 4wks after vaccination**
- In an outbreak, personal benefit from vaccination may outweigh risks
- **Smallpox vaccine not recommended for nursing mother,** as it could put infant in close contact with mother's vaccination site
- **Take care to prevent spread of vaccine virus to infants** < 1 yr of age. Wash hands before handling infant (e.g., feeding, changing diapers)

Alternate Housing

- People who have household contact with person with bar to smallpox vaccination shall:
 - either have alternative housing arrangements
 - or be exempted from smallpox vaccination until household-contact situation no longer applies (i.e., scab falls off)

Unacceptable: Permitting vaccinated SM to reside in house, trailer, apartment, or similar close arrangements (e.g., “hot-bunking”) with medically-barred contact

Acceptable:

- Vaccinated SM uses alternate lodging (e.g., barracks, dorm room, tents) on military installation, vessel, or aircraft, or in contracted space
- Berthing barges, familiar to naval forces in shipyards
- Vaccinated SM voluntarily arranges for alternate lodging in privately-owned or managed space is acceptable, if commander has reasonable expectation that SM will comply with requirement
- Schedule vaccinations shortly before or during 21-day deployments or family separation

Care of Vaccination Site



Care of Vaccination Site

Vaccine virus remains at the site, until scab falls off & can infect others

- Vaccine recipients need to be careful and informed
- Vaccine recipients need to educate close contacts about risk
- **Don't touch any vaccination site**
- **If you touch it by accident, wash your hands right away**
- **Don't let others touch vaccination site or materials that covered it**
- Wear gloves if assisting with site care
- **Handle your own laundry/towels and place in hot soapy water directly**



This woman touched her vaccination site, then touched her eye. She recovered with a scarred eyelid.

Care of Vaccination Site

Follow these instructions carefully, or you could harm yourself or others. Ask questions if anything is unclear.

- Avoid spreading vaccine virus to close contacts until your scab falls off, particularly with people exempted from getting vaccinated
- Do not share a bed, bunk, or cot with people who are exempted from vaccination
 - Anyone is at risk for vaccine virus contact infection, so **Wash Your Hands!**
- Do not share clothes, towels, linen, or toiletries
 - Anyone is at risk for vaccine virus contact infection, so **Wash Your Hands!**

Care of Vaccination Site

Follow these instructions carefully, or you could harm yourself or others. Ask questions if anything is unclear.

- Wear long sleeves to cover the site.
- Use bandages, if needed. Dispose of bandages in sealed or double plastic bags. You may carefully add bleach, alcohol, or soap, if desired
- Keep site dry, except normal bathing. Avoid rubbing. Avoid swimming or public bathing facilities
- Launder clothing, towels, and sheets in hot water with detergent or bleach.
- When the scab falls off, flush it down the toilet. Soap, alcohol, sunlight, chlorine, and bleach kill the virus.
- **Wash your hands – Hand washing, hand washing!**

Hand Washing & Hand Hygiene

- Wash hands with soap and warm water
 - rub hands together vigorously for at least **10 seconds**
 - cover all surfaces of the hands and fingers
 - rinse hands with warm water
 - dry hands thoroughly with a **paper towel**
 - use paper towel to **turn off the faucet**
- Alcohol-based waterless hand rinse *e.g., Calstat®*
 - Excellent alternative if hands are not visibly soiled
 - Apply product to palm and rub hands together, covering all surfaces of hands and fingers, until hands are dry
 - May have sticky feel after repeated use – wash hands with soap and water as needed

Hand Washing & Hand Hygiene

To prevent accidental virus exposure to the genital or rectal area, wash your hands **BEFORE** using the bathroom.



After using the toilet,
Wash your hands again!



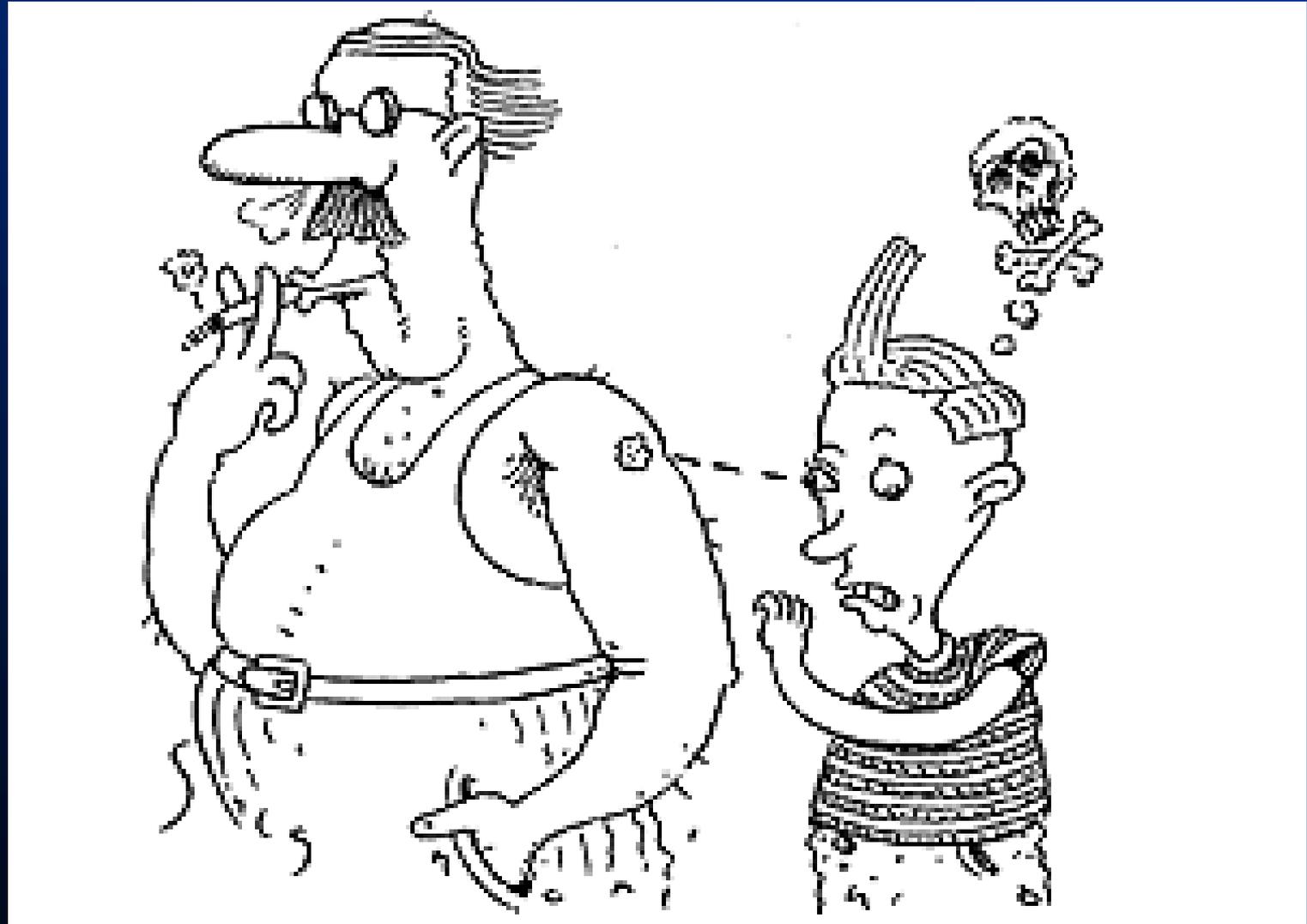
Be extremely careful with your contact lenses!

- Wash hands thoroughly before you touch your eye or the lenses
- Wearing your glasses until site heals is preferred

Extra Cautions for Healthcare Workers

- Minimize contact with unvaccinated patients until scab falls off
- If contact essential and unavoidable, workers can continue to work with patients, including those with immunodeficiencies:
 - If site well-covered and thorough hand-hygiene maintained
 - Semi-permeable bandage (Opsite, Tegaderm, Cosmopore)
- To prevent accumulation of exudates, cover site with dry gauze, and then apply dressing over gauze
- Change dressing daily or every few days (according to type of bandaging and amount of exudate), eg, start or end of shift.
- Site-care stations: to monitor worker vaccination sites, promote effective bandaging, and encourage scrupulous hand hygiene
- Long-sleeve clothing can further reduce risk for contact transfer
- Most critical measure: Thorough hand-hygiene after changing bandage or any contact with site

Be SMART!!!



USNH Vax'n Plan



USNH Smallpox Vax'n Plan

- As per Presidential directive, in accordance with DoD Smallpox Vaccination Program, based on DoD and CDC's Smallpox Response Plan and ACIP Vaccinia Recommendations...
- Will vaccinate **Stage 1A and 1B** for “pre-outbreak” preparations
 - Stage 1A - Smallpox (Epi) Response Teams
 - Stage 1B - “Selected” healthcare workers
 - Stage 2 - Other designated forces (Component UIC)

Selected Healthcare Providers

- ER Providers
- FP Providers
- PEDS Providers
- Consultants
 - ICU / Derm / Neuro
 - IM (x2)
 - G. Surg (x2)
 - Anesthesia (x2)
 - Ophtho (x2)
 - OB/Gyn (x2)
 - NICU (x2)
- ER Staff (incl EMTs)
- ICU Staff
- 3E Staff
- BMC Staff
- PMT's
- Radiology Techs
- Respiratory Techs
- Laboratory Staff
- Security

Vaccination Process

Part A - Screening of Personnel

- **Prescreen / Selection of candidates**
 - prescreened by DH or Div-O
 - nondeployable, h/o previous vax, on OKI >6mo, no personal (+/- family) contraindications
 - if family contraindications, we may elect to temporarily house AD members x3wks.
- **Individual Briefing, fill out SF600**
- **Medical Screening (1:1 interview)**
 - order lab tests, refer for consults, etc.
- **Provide Information (VIS)**

Vaccination Process

Part B - Vaccination of Personnel

- **Briefly re-screen staff members**
 - no acute illness, not pregnant, no active derm lesions, no new information
- **Vaccinate**
- **Give wound care instructions**
- **Document on SF600, SF601, DD2766**
- **Enter into SAMS**

Vaccination Process

Part C - Post Vaccination Care

- **Check site qDay before shift**
- **Dressing changes available BID**
 - AM (0615 - 0800)
 - PM (1800 - 1930)
- **Confirm take at days 6-8**
- **All care to be handled by Sick Call**
 - ensures conformity, adequate tracking
- **Complications to be reported to VAERS via EPI office**

Reserve (or TAD/LEAVE) Adverse-Event Care

- Adverse events after DoD- or USCG-directed vaccinations are line-of-duty conditions
- Someone with an adverse event in a non-duty status possibly associated to any vaccination:
 - **Seek medical evaluation at a DoD, USCG, or civilian medical treatment facility, if necessary**
 - Must report the event to your unit commander or designated representative as soon as possible
 - See local medical department or squadron for guidance
- Commander will determine Line of Duty and/or Notice of Eligibility status, if required

More Information



- **U-drive: Smallpox**
- **USNH Website**
 - excellent resources (NEJM, ACIP, pix, etc.)
 - www.oki.med.navy.mil
- **CDC Website**
 - including CDC Smallpox Response Plan
 - www.bt.cdc.gov
- **Military Vaccine Website**
 - including DoD Smallpox Response Plan
 - www.vaccines.army.mil/smallpox

Information Sources

- Chain of Command
- Website: www.smallpox.army.mil
- E-Mail: vaccines@amedd.army.mil
- Toll-Free: **877.GET.VACC**
- CDC National Immunization Hotline: **800.232.2522**
- CDC Bioterrorism Information: www.bt.cdc.gov
- Walter Reed Vaccine Healthcare Center, for help with complicated adverse-event management: **202.782.0411**
 - Askvhc@amedd.army.mil www.vhcinfo.org
- Information for Civilian Healthcare Providers: The Military Treatment Facility (MTF) where the member is enrolled, OR contact The Military Medical Support Office (MMSO) **888-647-6676** if the member is not enrolled to an MTF.

Questions?

