

Public Safety Smallpox Seminar



North Dakota Department of Health

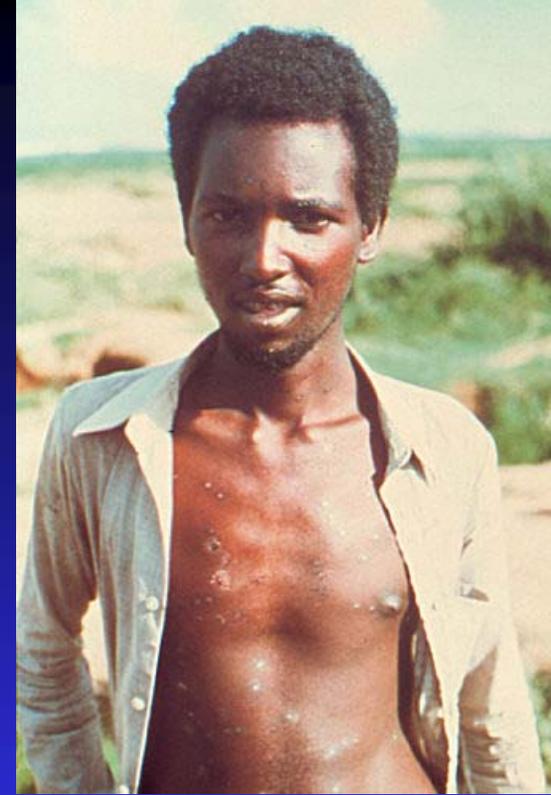
Smallpox Overview

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State Health Officer
North Dakota Department of
Health



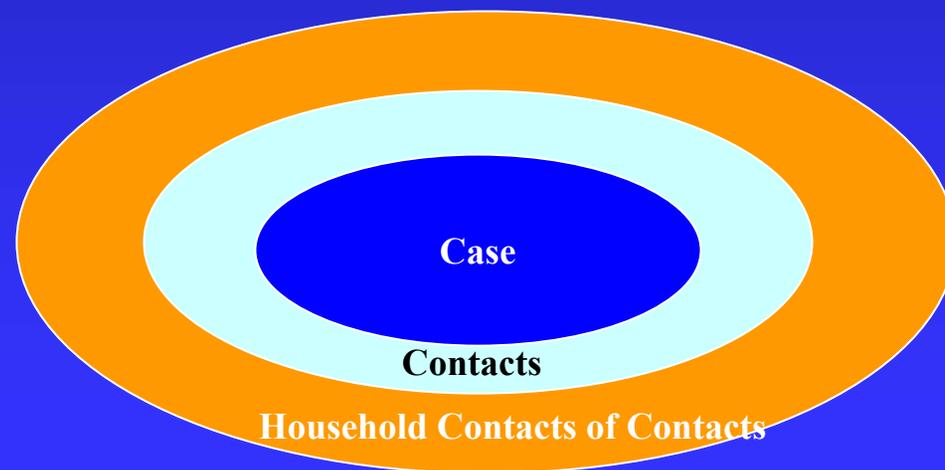
History

- 1977 – Last naturally acquired case in Somalia
- 1978 – Laboratory-related death at the University of Birmingham, England
- 1980 – Global eradication certified by the World Health Organization
- Method of eradication – Ring vaccination, not mass vaccination



Ring Vaccination Concept

- Isolation of confirmed and suspected cases
- Identification, vaccination and surveillance of significant contacts of proven cases
- Vaccination of household contacts of contacts



Smallpox – Basic Facts

- Cause – Variola Virus
- Can infect only humans
- Transmission – Close face to face (generally within 6 feet) via respiratory droplets of a person who has the disease

Smallpox - Disease

- Onset is 12 to 14 days after exposure
- Days 2 to 3 – High fever, bed-ridden, headache and backache
- Days 4 to 5 – Onset of the rash (small bump – blister – pustule – scab)
- Most infectious during the first week of the rash. No longer infectious once the scabs fall off (3 to 4 weeks)
- Death rate is about 30 percent

Smallpox



Smallpox Vaccination

- Live virus vaccine – Vaccinia (this is not the smallpox virus)
- Highly effective in preventing illness or severe disease if given within 3 to 4 days of definite exposure to smallpox

Smallpox Vaccination

- Skin reactions are an indicator that the vaccine was effective (vaccine “take”)
 - 3 to 4 days – Redness and itching
 - 7 to 11 days – Vesicle (blister) develops into a pustule, redness increases
 - 14 to 21 days – Pustule dries, scab forms
 - 21 days – Scabs falls off, leaving a permanent scar
- Commonly see fever and tender, enlarged lymph nodes

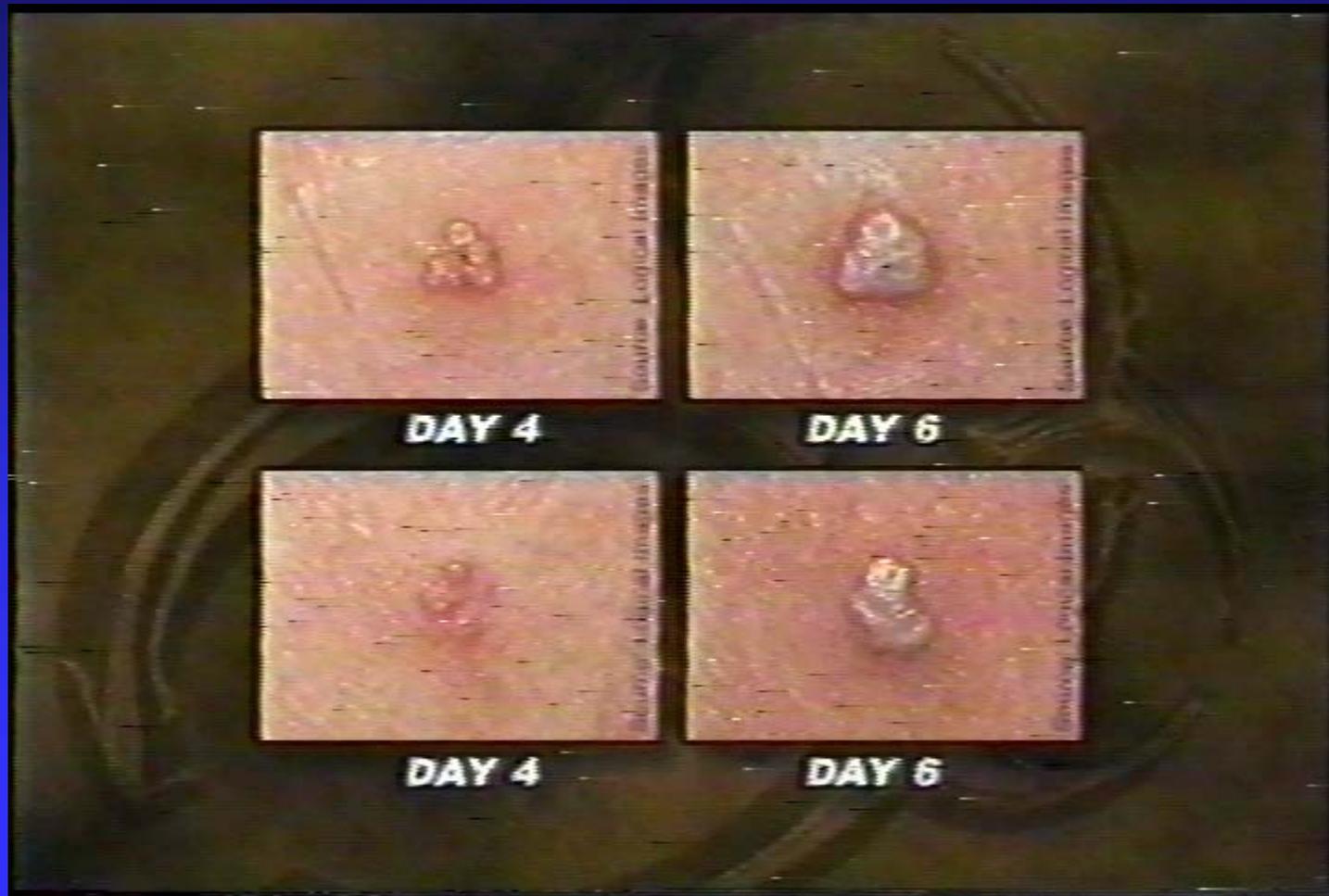


Vaccination – Adverse Reactions

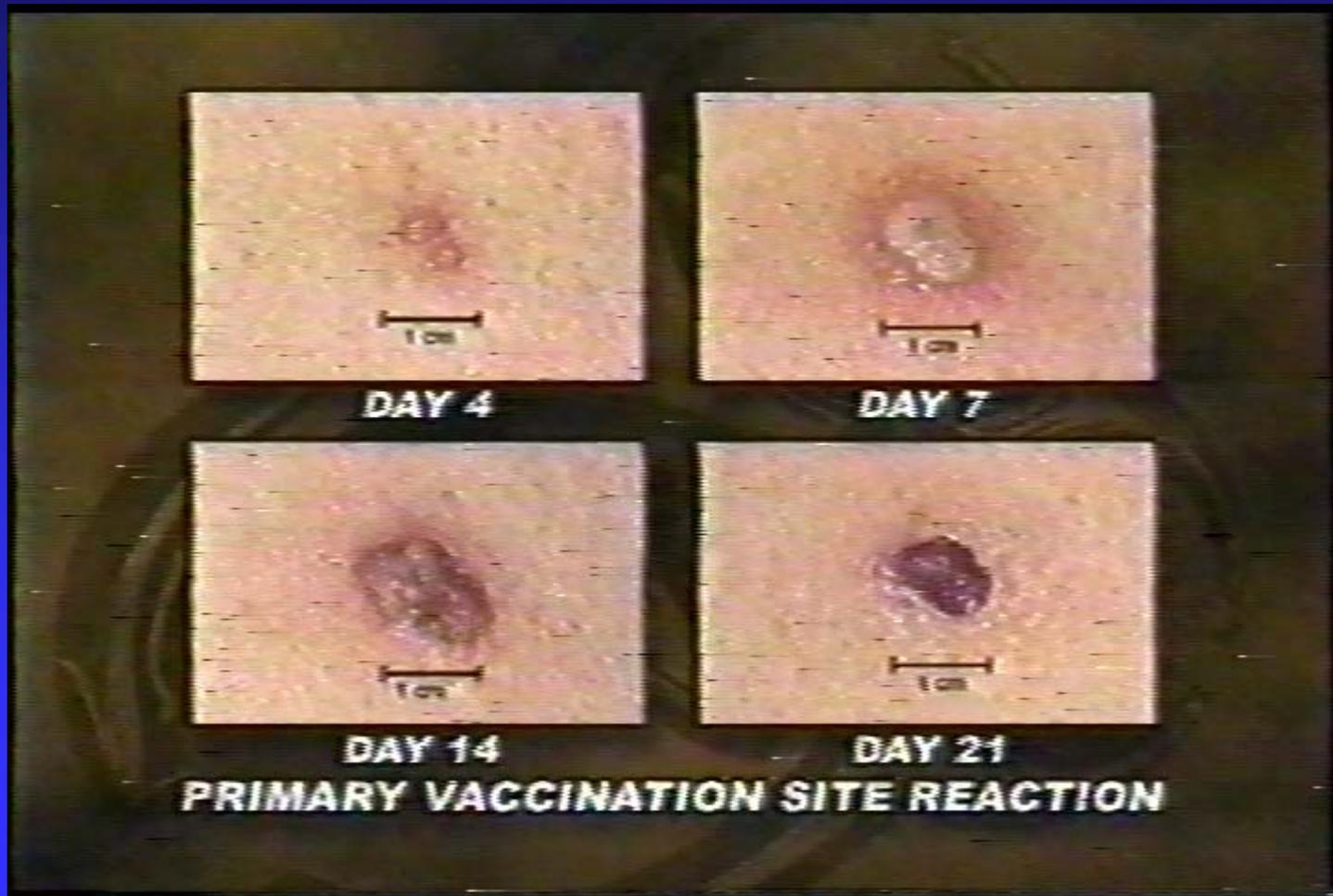
- Death – 1 / million
- Accidental infection of other body part (i.e. eye) – 1 / 2000
- Generalized vaccinia – 1 / 5000
- Eczema vaccinatum – 1 / 26,000
- Post vaccination encephalitis – 1 / 300,000
- Progressive vaccinia – 0.83 / million



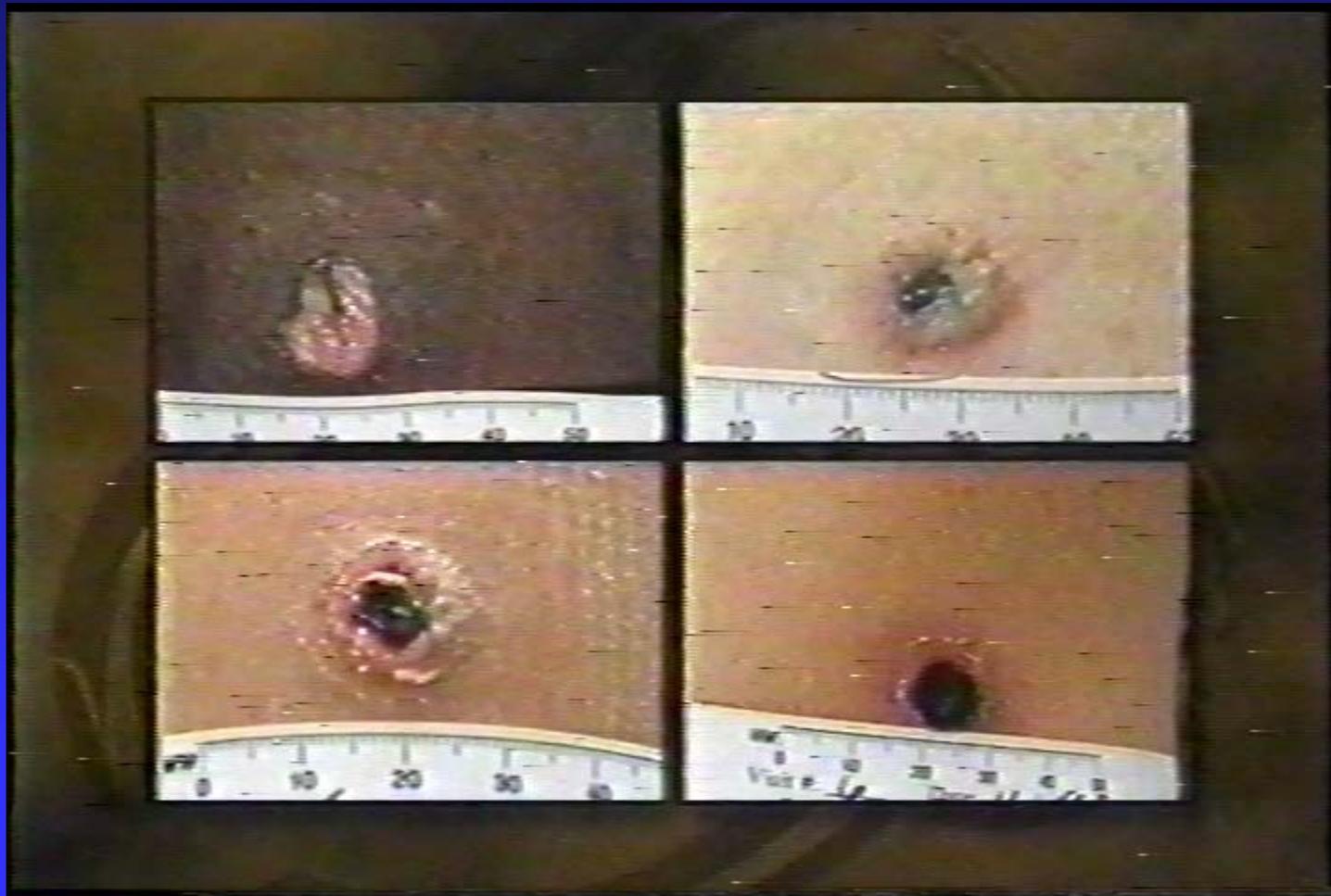
Vaccination Site Progression



Vaccination Site Progression



Vaccination Site Progression



Vaccination Site Progression

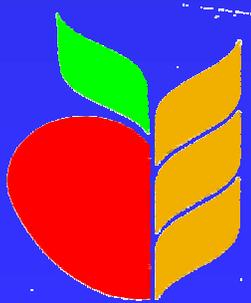


Smallpox Surveillance and Diagnosis

Larry A. Shireley, MS,MPH

State Epidemiologist

North Dakota Department of Health



Early Detection

“Atypical” Rash Illnesses



North Dakota Department of Health
Division of Disease Control

Dial:

1.800.472.2180

24 hours/day - 7 days/week

Call weekdays, evenings, weekends or holidays

For questions, reportable disease recommendations, reporting issues or consultations

Rash Illnesses

- Rule Out Chickenpox (Varicella)
 - ◆ Reporting of hospitalized patients
 - ◆ Consultation
 - ◆ Infectious Disease Physicians
 - ◆ Dermatologists
- Consultation/Confirmation
 - ◆ Centers for Disease Control and Prevention

Laboratory

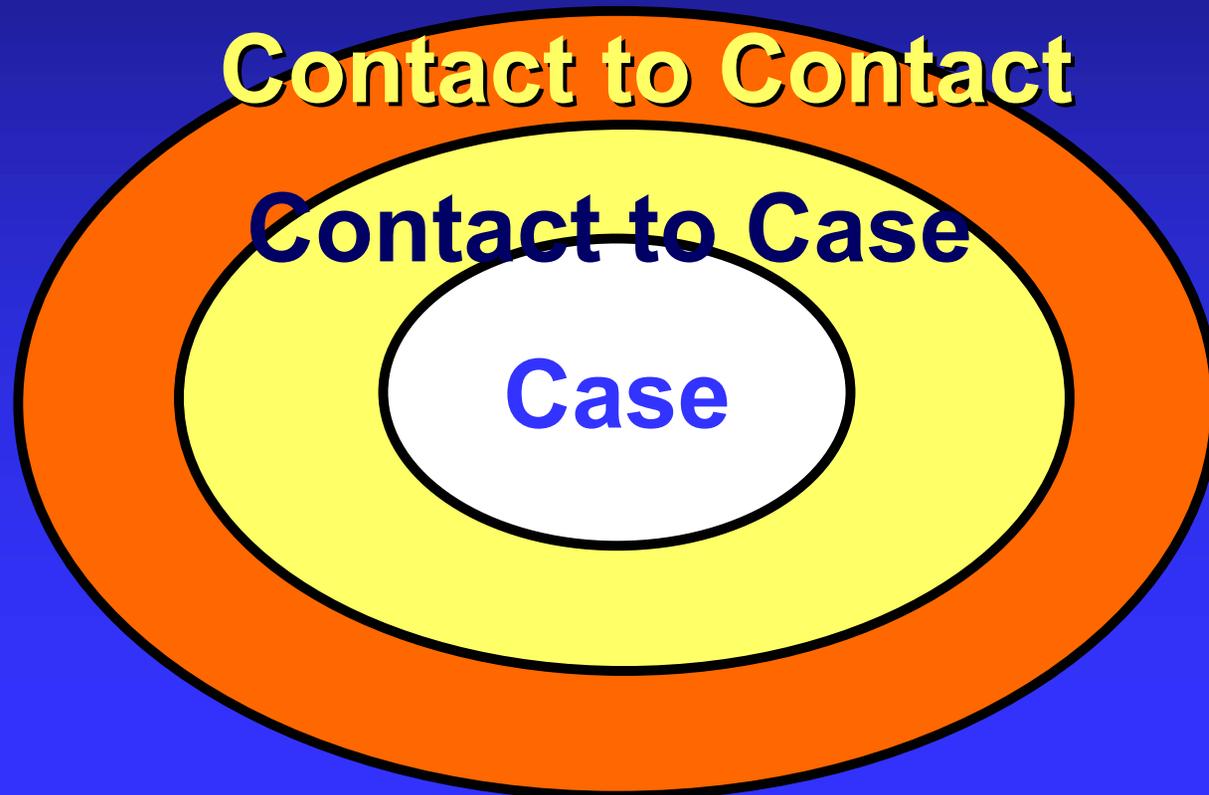
- ND Public Health Laboratory
 - ◆ “Rule in Varicella”
 - ◆ DFA
 - ◆ Real time PCR
 - ◆ Pan-Orthopox
 - ◆ Real time PCR
 - ◆ Vaccinia - Non-variola E9L
 - ◆ Real time PCR
- Variola
 - ◆ Centers for Disease Control and Prevention
 - ◆ Regional Laboratories

Syndromic Surveillance

- Regional Ask-A-Nurse
- Emergency Room
- Others
 - ◆ Ambulance “Runs”
 - ◆ Pharmaceutical Sales

Case Investigation

- Ring Vaccination



Smallpox Plan Overview



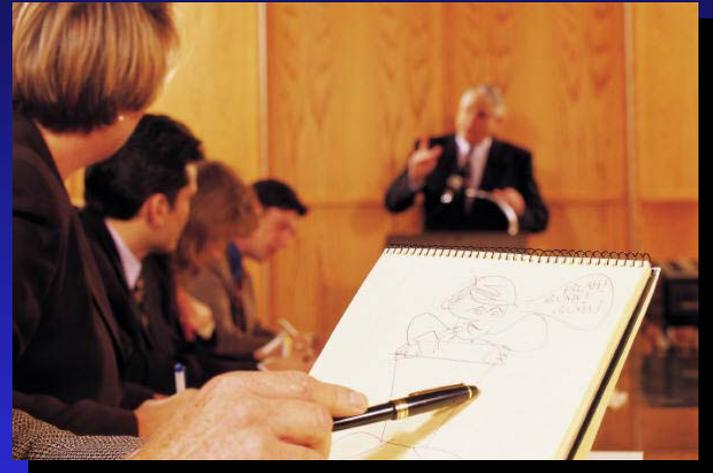
Brenda Vossler, Hospital Coordinator

Bioterrorism Preparedness and Response

North Dakota Department of Health

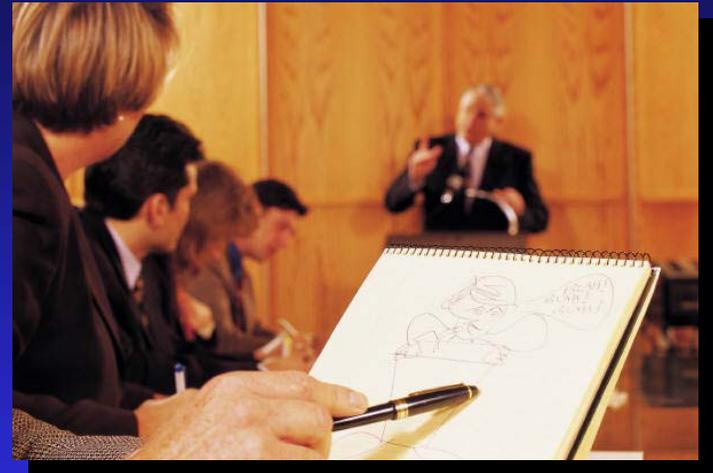
Smallpox Plan Categories

- Pre-event
 - ◆ Phase I
 - ◆ Initial Responders
 - ◆ Public Health
 - ◆ Hospital
 - ◆ About 2,000



Smallpox Plan Categories

- Pre-event
 - ◆ Phase II
 - ◆ All Responders
 - ◆ Public Health
 - ◆ Hospital
 - ◆ Clinic/Physician
 - ◆ Public Safety
 - Law enforcement
 - Fire
 - EMS



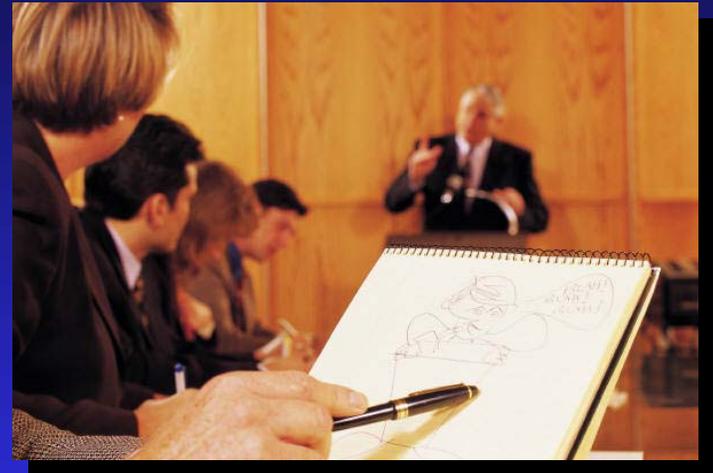
Smallpox Plan Categories

- Pre-event
 - ◆ Phase III
 - ◆ Public



Smallpox Plan Categories

- Post-event
 - ◆ Ring vaccination
 - ◆ Mass vaccination

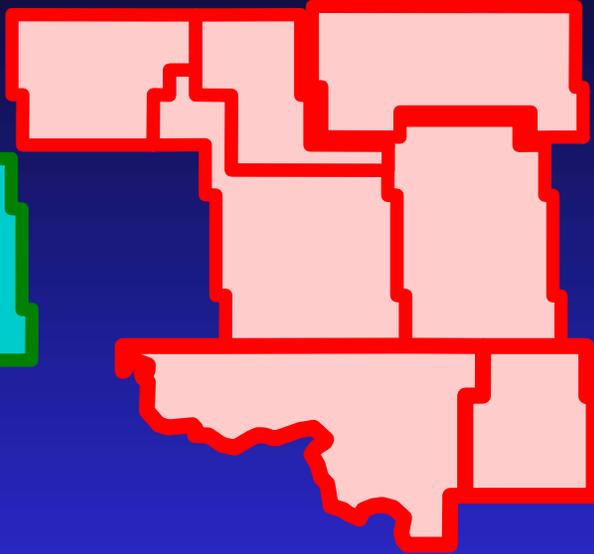


Bioterrorism Regional Planning Areas

North West



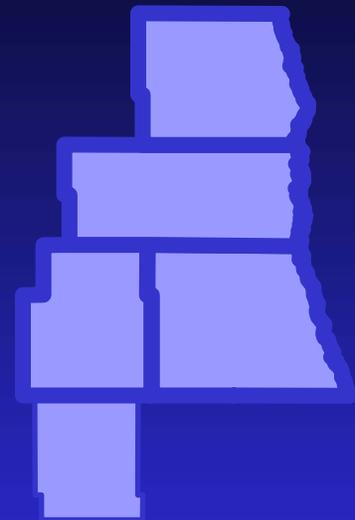
North West Central



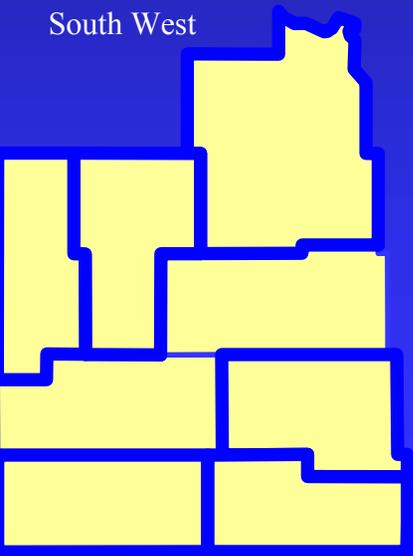
North East Central



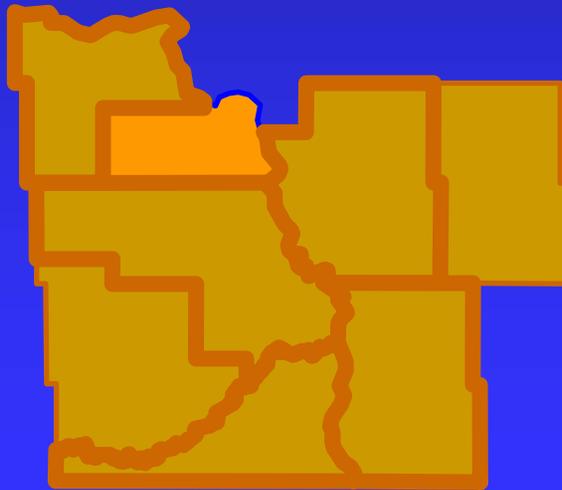
North East



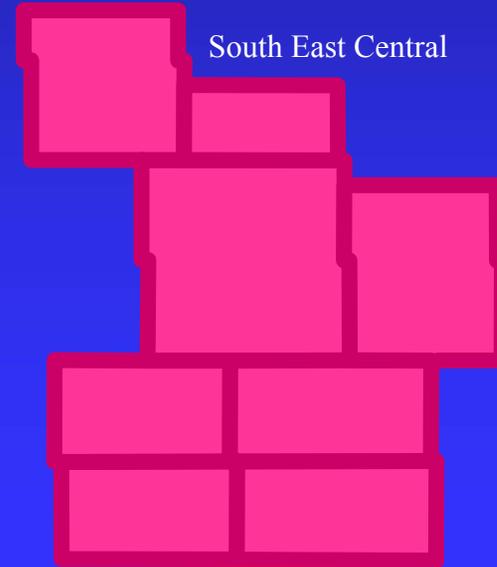
South West



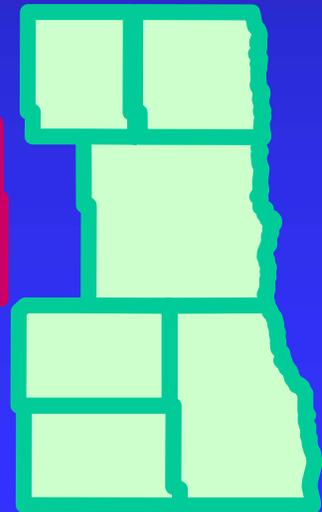
South West Central



South East Central



South East



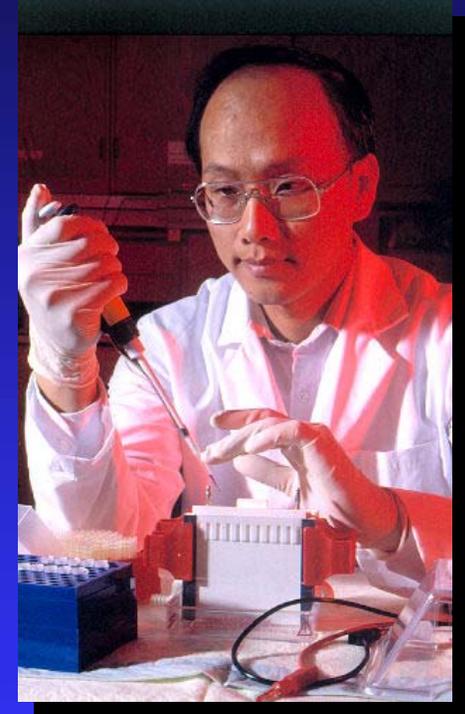
Public Health Regional Resources

- Lead Public Health Units
- Bioterrorism Directors
- Field Epidemiologists
- Medical Consultants
- Public Information Officers



Phase I Pre-event Vaccination Clinics

- State Responsibilities
 - ◆ Receipt and delivery of vaccine
 - ◆ Establishment of regional consultants
 - ◆ Data registration
 - ◆ Training
 - ◆ Public education
- Regional and Local Responsibilities
 - ◆ Identification of public & hospital response teams
 - ◆ Clinic Planning
 - ◆ Site selections
 - ◆ Supply acquisitions
 - ◆ Staffing
 - ◆ Schedule planning
 - ◆ Supervision and evaluation



Making the Decision

- Vaccination is VOLUNTARY.
- Make an EDUCATED decision– Become knowledgeable.
- Personally weigh the risks and benefits.
- Obtain testing for contraindications if you have concerns.
- Persons previously vaccinated will shed less virus and may experience fewer side effects.

Contraindications

- Immunosuppression for any reason
- Eczema or atopic dermatitis or history
- Pregnancy or breast feeding
- Household members with above contraindications
- Allergic reaction to previous vaccination or vaccine ingredients
 - ◆ Polymyxin
 - ◆ Streptomycin
 - ◆ Tetracycline
 - ◆ Neomycin
 - ◆ Phenol
- Moderate or severe illness
- Persons younger than 18 years of age

Contraindications

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Administrative Leave and Sick Leave

- CDC recommendations do not require administrative leave from work.
- Vaccinated staff may be physically unable to work for several days.
- Employers must decide what their policy will be.
- Worker's compensation decision regarding phase II coverage pending.

Post-Vaccination Site Care

- Cover vaccination site and any satellite lesions with gauze and semi-permeable dressing.
- Change dressing every 3-5 days and as needed when site is weeping.
- Long sleeved clothing recommended as additional barrier over vaccination site.
- Examine vaccination site each day to ensure complete coverage and seal of the dressing.
- If no contact with patients or high risk persons, may use gauze dressing only.

Post-vaccination Recommendations

- Practice good hand washing before and after each patient contact and after touching or dressing your vaccination site.
- Avoid touching the vaccination site.
- Vaccinee may provide care for persons without high risk if basic precautions are followed.

Post-Vaccination Recommendations

- Dispose of dressings in a sealed plastic bag placed in the garbage.
- May shower or bathe with vaccination site covered with a plastic barrier. Do not submerge the site in water.
- Launder clothing and towels in hot water with bleach.

Reasons to Exclude Vaccinee From Work

- Systemic symptoms.
- Vaccine-related complications.
- Inability to contain drainage from vaccination site.
- Inability to follow infection control practices.

Contact Precautions

- When treating patients with adverse events of smallpox vaccination, use contact precautions.
- Gown and gloves.
- Disposable equipment or dedicated equipment disinfected after each patient use.
- Environmental cleaning.
- Good hand washing.

Airborne Precautions

- If SMALLPOX is suspected follow contact precautions and airborne precautions.
- Negative air pressure room when hospitalized.
- Caregivers wear N 95 respirator.
- Only immune staff provide care.
- If unable to provide negative air pressure, the patient wears a surgical mask until transferred to appropriate room.

Decontamination

- For contact with vaccination site drainage or lesions (vaccinia virus) routine disinfecting agents are effective.
- Guidelines from CDC for decontamination after contact with smallpox (variola virus) are still pending.

References

- ND Department of Health website at www.health.state.nd.us
- CDC website at www.cdc.gov.
- Regional bioterrorism directors.
- State bioterrorism office 701-328-2270.

Smallpox Communications

Loreeta Leer Frank
Public Information Officer
North Dakota Department of Health

Guiding Principle

The public will need information that will help them minimize their risk

Not Business as Usual

A public health emergency:

- ◆ Triggers a level of public interest and media inquiry that requires a response beyond normal operations and resources.
- ◆ Requires a significant diversion of department staff from regular duties.

Recent Events

- Anthrax concerns ~ 2001
- West Nile virus ~ 2002

Emergencies Are Media Events

- Emergency response would be hampered if media not involved
 - ◆ People rely on media for up-to-date information during an emergency
 - ◆ Media relay important protective actions for the public
 - ◆ Media know how to reach their audiences and what their audiences need

Psychology of a Crisis

Common human emotions may lead to negative behaviors that hamper recovery or cause more harm.

Negative Behaviors

- Demands for unneeded treatment
- Reliance on special relationships
- Unreasonable trade and travel restrictions
- Multiple unexplained physical symptoms

What Do People Feel During a Disaster?

- Denial
- Fear and avoidance
- Hopelessness or helplessness
- Vicarious rehearsal
- Seldom panic

Communicating During a Crisis

When in “fight or flight” moments of an emergency, more information leads to decreased anxiety.

Decision Making During a Crisis

- We simplify
- We cling to current beliefs
- We remember what we previously saw or experienced

How Do We Initially Communicate During a Crisis?

Simply

Timely

Accurately

Repeatedly

Credibly

Consistently

During an Emergency ...

- Don't over reassure
- State continued concern before stating reassuring updates
- Don't make promises about outcomes
- Give people things to do
- Allow people the right to feel fear
 - ◆ Acknowledge fear in self and others

Avoid These Pitfalls

- Jargon
- Humor
- Personal opinions
- Speculation

Effective Messages

- Speed counts
- Facts
- Trusted source

Building Trust in the Message and the Messenger

- Express empathy
- Competence
- Honesty
- Commitment
- Accountability

Public Health's Goal in Emergency Response

To efficiently and effectively reduce
and prevent illness, injury and death
and to return individuals and
communities to normal

Contact Information

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Questions?

During this Live program

Call 701-328-2614

or

Send E-mail

Following the Live Program

Call 701-328-2270 or Send E-mail to
twiedric@state.nd.us



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