PHYSICIAN ALERT

DATE: January 3, 2003
TO: All Sutter County Physicians
FROM: Michael Kinnison, MD
Health Officer
RE: SMALLPOX VACCINATION

This memo is to apprise you of Sutter County’s plan for Phase 1 of Smallpox Vaccination. Even physicians not currently involved in the vaccination program(s) should be familiar with this plan. Community physicians may be asked about smallpox vaccination including general questions, contraindications, and potential adverse reactions among vaccinees or their contacts.

Overview of the Smallpox Vaccination Plan

The National Smallpox Vaccination Plan consists of three phases. In Phase 1 the federal government will release 500,000 doses for voluntary vaccination of a limited number of healthcare workers in public health and hospitals. These personnel will form public health and hospital-based smallpox response teams. These teams will increase the county’s capacity to respond to suspected or actual smallpox cases, should this ever be necessary. We anticipate that Phase 1 vaccination will begin in late January 2003. Phase 2 expands availability of smallpox vaccination to all healthcare workers and traditional first responders such as pre-hospital emergency medical, law enforcement and fire personnel. Phase 2 is expected to immediately follow completion of Phase 1. Phase 3 would make voluntary smallpox vaccination available to any member of the general public. Phase 3 is likely to begin in 2004 after the new cell culture vaccine is licensed by the Food and Drug Administration (FDA).

Phase 1 Smallpox Healthcare Response Teams

Each acute care hospital in the county is currently screening and recruiting volunteers from a number of disciplines to serve on their Smallpox Healthcare Response Teams. We have asked hospitals to develop teams composed of the following personnel:

- Emergency Department Staff, including physicians and nurses
- Intensive Care Unit Staff, including physicians and nurses; and, in hospitals that care for infants and children, pediatricians, pediatric intensivists and pediatric emergency department physicians and nurses
• General Medical Unit Staff, including physicians, internists, pediatricians, obstetricians, and family physicians
• Medical sub-specialists, including infectious disease specialists and dermatologists to provide consultation
• Infection Control Professionals (ICPs)
• Respiratory therapists
• Radiology technicians
• Security personnel
• Housekeeping staff (e.g., engineers and those staff involved in maintaining the health care environment and decreasing the risk of fomite transmission)
• Nursing personnel who would act as “vaccinators” for the facility’s staff when broader vaccination is indicated.

For Phase 1, Public Health Department staff will vaccinate healthcare workers for the hospital-based teams. Select vaccinated nursing staff at each hospital will be responsible for daily assessment of the vaccinees, including assessing the vaccination site for take/non-take, eliciting information about adverse reactions, and performing dressing changes. The Public Health Department will provide tools for hospitals to track and report this information.

About the Vaccine/Contraindications

About the vaccine
The vaccinia (smallpox) vaccine is a live virus that multiplies in the superficial layers of the skin. The vaccine does not contain variola virus, the virus that causes smallpox. A successful vaccination is often referred to as a “take.”

<table>
<thead>
<tr>
<th>Vaccination</th>
<th>Immunity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Primary vaccination</td>
<td>Fades after 5 years, after 20 years probably negligible</td>
</tr>
<tr>
<td>Revaccination</td>
<td>Found to persist 30+ years¹</td>
</tr>
<tr>
<td>Vaccination after exposure to smallpox</td>
<td>Within 2-3 days, can protect against smallpox</td>
</tr>
<tr>
<td></td>
<td>Within 4-5 days, may protect against a fatal outcome</td>
</tr>
</tbody>
</table>

¹ May protect against a fatal outcome, but not against developing a milder form of smallpox.

Contraindications
Because the vaccinia virus in the smallpox vaccine can be spread to others from the vaccine site of a vaccinated person, the contraindications below apply to both potential vaccinees and their household contacts. If a potential vaccinee or someone they live with has any of the following conditions, they should not receive the smallpox vaccine. The only exception would be in the case of exposure to smallpox. In that situation, all exposed persons should be vaccinated, regardless of contraindication.

Eczema or atopic dermatitis and other acute, chronic, or exfoliative skin conditions
• Persons who have ever been diagnosed with eczema or atopic dermatitis should not be vaccinated, even if the condition is not currently active. These patients are at high risk of developing eczema vaccinatum, a potentially severe and sometimes fatal complication. Additionally, persons with household contacts that have a history of eczema or atopic dermatitis, irrespective of disease severity or activity, should not be vaccinated.
• If the potential vaccinee or any of their household contacts have other acute, chronic, or exfoliative skin conditions (e.g., burns, impetigo, chicken pox, contact dermatitis, shingles,
herpes, severe acne, or psoriasis), they are at risk for inadvertent autoinoculation of the affected skin with vaccinia virus and should not be vaccinated until the condition(s) resolves.

**Diseases or conditions which cause immunodeficiency or immunosuppression**

- If a potential vaccinee or any of their household contacts have conditions such as HIV/AIDS, solid organ or stem cell transplant, generalized malignancy, leukemia, lymphoma, agammaglobulinemia, or autoimmune disease, they should not be vaccinated. People with these conditions are at greater risk of developing a serious adverse reaction resulting from unchecked replication of the vaccine virus (progressive vaccinia).
- HIV testing should be readily available to all persons considering smallpox vaccination. HIV testing is recommended for persons who have any history of a risk factor for HIV infection and who are not sure of their HIV infection status. Anyone who is concerned that they could have HIV infection also should be tested. HIV testing should be made available in a confidential setting with results communicated to the potential vaccinee before the planned date of vaccination. Alternatively, patients can be referred to the Public Health Department for free anonymous HIV testing (call 530-822-7215 for more information). Persons with a positive test result should be told not to receive smallpox vaccination.

**Treatments which cause immunodeficiency or immunosuppression**

- If a potential vaccinee or any of their household contacts are undergoing treatment with radiation, antimetabolites, alkylating agents, systemic corticosteroids, chemotherapy agents, or organ transplant medications, they should not be vaccinated. People who are receiving these therapies are at greater risk of serious adverse reactions to the smallpox vaccine.

**Pregnancy**

- Live virus vaccines are generally contraindicated during pregnancy. The fetuses of pregnant women who receive the smallpox vaccine are at risk of fetal vaccinia. Although a rare condition (fewer than 50 cases have ever been reported), fetal vaccinia usually results in stillbirth or death of the infant shortly after delivery.
- Before vaccination, potential vaccinees should be asked if they or any of their household contacts are pregnant or intend to become pregnant in the next 4 weeks; those who respond positively should not be vaccinated.
- In addition, women who are vaccinated should be counseled not to become pregnant during the 4 weeks after vaccination.
- Routine pregnancy testing of women of childbearing age is not recommended.
- Any woman who thinks she could be pregnant or who wants additional assurance that she is not pregnant should perform a home urine pregnancy test using a “first morning” void urine on the day scheduled for vaccination.
- If a pregnant woman is inadvertently vaccinated or if she becomes pregnant within 4 weeks after vaccinia vaccination, she should be counseled regarding potential risk to the fetus. At present, there is little data about the effects of vaccinia on the developing fetus.

**Children < 12 months in the household**

- Smallpox vaccination is contraindicated in children < 12 months old because of the higher rates of adverse reactions to vaccinia virus. Because of the possibility that infants will come into contact with live vaccinia virus shed from a household member’s vaccination site, it is recommended that persons with infants < 12 months old in their immediate household or directly under their care NOT be vaccinated.
The contraindications above apply to potential vaccinees and their household contacts. The following additional contraindications apply only to potential vaccinees:

**Previous allergic reaction to smallpox vaccine or any of the vaccine’s components**
- Vaccinia vaccine (Dryvax®) contains small amounts of polymyxin B sulfate, streptomycin sulfate, chlortetracycline hydrochloride, neomycin sulfate, and phenol. Anyone who has experienced an anaphylactic reaction to these components should not be vaccinated.
- In addition, anyone who has experienced a previous allergic reaction to the smallpox vaccine should not be vaccinated.

**Moderate or severe acute illness**
- Moderate or severe acute illness is generally considered a contraindication to vaccination.
- Vaccination should be deferred until the acute illness has resolved.

**Children**
- The Advisory Committee on Immunization Practices (ACIP) advises against non-emergency use of smallpox vaccine in persons younger than 18 years of age.

**Breastfeeding**
- Breastfeeding mothers should not receive the smallpox vaccine. The close physical contact that occurs during breastfeeding increases the chance of inadvertent inoculation.

Careful screening is essential to minimize complications from the smallpox vaccine. Further information regarding vaccine contraindications can be found on the CDC website at [www.cdc.gov/smallpox](http://www.cdc.gov/smallpox).

**REMEMBER:** There are no contraindications to the smallpox vaccine if someone has been exposed to the smallpox virus!

**Vaccination Method**
The smallpox vaccine is not given with a hypodermic needle. The vaccine is given using an individually wrapped, sterile, bifurcated (two-pronged) needle that is dipped into the vaccine solution. When removed, the needle retains a droplet of the vaccine. Multiple puncture vaccination of the deltoid area of the upper arm with the bifurcated needle is the recommended method of vaccination. The vaccination site will be covered with gauze which will in turn be covered by a semipermeable dressing.

**Post-vaccination Site Care**
Health care workers who have been vaccinated will be provided with close follow up and vaccination site care. Trained personnel will assess the vaccinee and vaccination site daily. Dressing will be changed as needed but no less often than twice weekly. Vaccinees with adverse reactions will be referred to physicians for further evaluation.

Health care worker caution: Treat contaminated materials as infectious waste (e.g. towels, gauze, instruments, etc.). These materials should be placed in an appropriate biohazard container.

**Normal Primary Vaccination**

**Normal Reaction Timeline**
A normal primary vaccination appears as a papule in 3 - 4 days, and rapidly progresses to a vesicle with the surrounding erythema by the 5th - 6th day. The vesicle center becomes depressed and progresses to a well-formed pustule by the 8th - 9th day. By the 12th day, or soon thereafter, the pustule crusts over forming a brown scab, which progresses from the center of the pustule to the periphery. After 2 ½ to 3 weeks, the scab detaches and a well-formed scar remains.
<table>
<thead>
<tr>
<th>Day</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>Vaccination</td>
</tr>
<tr>
<td>3-4</td>
<td>Papule</td>
</tr>
<tr>
<td>5-6</td>
<td>Vesicle with surrounding erythema → vesicle with depressed center</td>
</tr>
<tr>
<td>8-9</td>
<td>Well-formed pustule</td>
</tr>
<tr>
<td>12+</td>
<td>Pustule crusts over → scab</td>
</tr>
<tr>
<td>17-21</td>
<td>Scab detaches revealing scar</td>
</tr>
</tbody>
</table>

**Primary Vaccination Site Reaction**


**No Reaction**
Rarely, in some previously unvaccinated individuals, seemingly appropriate vaccination techniques may result in no reaction. One should assume that the individual is not immune and vaccination must be repeated.

**Systemic Symptoms**
Systemic symptoms are expected and occur about a week after vaccination. These may include:
- Fever
- Malaise
- Myalgia, headache, chills, nausea, fatigue
- Soreness at the vaccination site
- Lymphadenopathy (local)
- Intense erythema ringing the vaccination site

The occurrence of these normal reactions varies considerably from study to study. The range of symptom prevalence is as follows:

Lymphadenopathy  25.0 - 50.0 %
Normal Variants/Revaccination

Normal Variants
Normal variants (rate: 2.4% - 6.6%) of vaccination are NOT adverse events and require no specific treatment. They include:
- Local satellite lesions (that are normal in appearance)
- Lymphangitis from the site to regional nodes
- Regional lymphadenopathy
- Considerable local edema at the site
- Viral cellulitis† (intense inflammation surrounding the papule)

† This normal consequence of vaccination is often confused with bacterial infection.

Revaccination
The nature of the response to revaccination depends on the degree of residual immunity following previous vaccination. One of the following responses will occur:

<table>
<thead>
<tr>
<th>Response</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Typical Primary Reaction</td>
<td>Clear cut pustule 6-8 days after vaccination</td>
</tr>
<tr>
<td>Major Reaction</td>
<td>Area of definite induration or congestion surrounding a central lesion that may be a scab or ulcer 6-8 days after vaccination. The evolution of the lesion is more rapid than following a primary vaccination.</td>
</tr>
<tr>
<td>Equivocal Reaction</td>
<td>Any other reaction or response; <em>e.g.</em> an “allergic reaction”(^1) (revaccination is indicated) or no reaction(^2) (revaccination is indicated)</td>
</tr>
</tbody>
</table>

\(^1\) Erythema and a small, evanescent papule present within several days that resolves quickly. These are “sensitivity” reactions that can be evoked with vaccine virus that is no longer viable. Revaccination is indicated.

\(^2\) In some individuals, no take is seen after revaccination, even at long intervals after a primary vaccination. Usually this is due to poor technique, low potency vaccine, or inactivation of the virus at the skin site (*e.g.* if alcohol is used to prepare the site). Revaccination is indicated using vaccine of assured potency.

If a patient has never had a successful take, the patient should be informed that he/she is almost certainly NOT immune.

Adverse Reactions
There are three general categories of adverse reaction following smallpox vaccination 1) mild reactions, 2) serious reactions, and 3) life-threatening reactions. Rates of adverse reactions are more frequent with primary vaccination. Careful screening of potential vaccinees for contraindications should decrease the frequency with which adverse reactions occur.
Smallpox Vaccine Adverse Reaction Rates (per million primary vaccinations)

<table>
<thead>
<tr>
<th>Reaction</th>
<th>Rate in Primary Vaccination</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inadvertent inoculation</td>
<td>25-529</td>
</tr>
<tr>
<td>Generalized vaccinia</td>
<td>23-242</td>
</tr>
<tr>
<td>Eczema vaccinatum</td>
<td>10-39</td>
</tr>
<tr>
<td>Progressive vaccinia</td>
<td>0.9-1.5</td>
</tr>
<tr>
<td>Post-vaccinia encephalitis</td>
<td>3-12</td>
</tr>
<tr>
<td>Death</td>
<td>1</td>
</tr>
</tbody>
</table>

**Hospitalization**
Hospitalization of patients with adverse events should be based on the degree of severity and infectivity:

<table>
<thead>
<tr>
<th>Diagnosis</th>
<th>Do Not Hospitalize</th>
<th>Hospitalize</th>
</tr>
</thead>
<tbody>
<tr>
<td>Non-infectious patients(*)</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Generalized vaccinia(†)</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Severe and extensive autoinoculation(§)</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Progressive vaccinia(§)</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Post-vaccinia encephalitis(§)</td>
<td>X</td>
<td></td>
</tr>
</tbody>
</table>

* Unless serious disease is present, such as Stevens Johnson Syndrome.
† Most patients with generalized vaccinia will not require hospitalization; in fact, it is prudent to avoid hospitalization to minimize intra-hospital spread.
§ Patients with severe and extensive inoculation vaccinia, progressive vaccinia and post-vaccinia encephalitis almost always require hospital care. In hospital, they must be isolated and care taken to separate all materials used in their care, treating such materials as infectious waste.

**Rashes following smallpox vaccination**
Toxic and/or hypersensitivity rashes are common 1 - 2 weeks after vaccination. The rash varies from erythematous macular lesions, to vesicles, urticaria, pustules and typical bulls-eye lesions, all under the rubric “**erythema multiforme**.” These are benign lesions that do not progress. Itching may accompany the rash. The most serious hypersensitivity reaction, Stevens Johnson Syndrome (SJS), is rare.

The diagnosis is made when the typical rash is seen in temporal association with primary vaccination. In the vesicular and pustular forms it is necessary to distinguish these from generalized vaccinia or inoculation vaccinia.

Treatment is symptomatic, usually employing an anti-histamine and other measures to counteract itching, if present. Mucosal involvement and evolution to SJS requires hospitalization and supportive care.

severity: benign (except SJS - severe)
frequency: most common (exception: SJS - rare)
VIG: not recommended
reporting: document reaction; do not call Public Health Department unless rash is severe
**Inadvertent Inoculation**
The vaccination site contains high titers of vaccinia virus. Transfer of this virus from the primary site to other parts of the body, or to other individuals can easily occur if care is not taken, especially since itching is a common part of the local reaction. Autoinoculation varies from single lesions to massive involvement in areas affected by skin disorders (*e.g.* eczema).

The degree of skin involvement appears to parallel the risk and severity of autoinoculation. Slight lesions, such as superficial wounds or minor burns may pose less of a risk than massively involved skin areas. Nevertheless, any disrupted skin may be susceptible to implantation, although the consequences may be less for minor lesions.

Lesions follow the same course as the primary vaccination, except in patients with cell-mediated immune dysfunction where each lesion progresses without an inflammatory response, does not heal, and expands.

If there are only one or a few lesions, no specific treatment is required. Multiple lesions, especially if they are confluent and cover large portions of the body warrant treatment with VIG.

- **severity:** mild to severe - hospitalize severe
- **frequency:** common
- **VIG:** indicated for extensive lesions, not recommended for mild instances
- **reporting:** report to Public Health Department if patient requires hospitalization

**Bacterial Infection**
Today, staphylococci and streptococci would be the most likely organisms to be encountered in normal individuals. Occasionally, enteric or anaerobic organisms are the cause of bacterial superinfection of vaccinations.

The use of nonpermeable dressings, especially those tightly bound to the skin, may result in increased maceration of the skin. Nonpermeable dressings may also lead to more frequent occurrence of infection, the possibility of anaerobic infection, and more serious disease.

Bacterial cultures should be obtained from the site by swabbing or aspiration. Treatment is with antibiotics specific to the agent. Initial treatment should anticipate staphylococcal and streptococcal etiology.

- **severity:** mild
- **frequency:** uncommon
- **VIG:** not recommended
- **reporting:** document, but do not need to call Public Health Department

**Eczema Vaccinatum**
Individuals with eczema or atopic dermatitis are at special risk from implantation of vaccinia virus into the diseased skin, sometimes with a fatal outcome. Atopic dermatitis implies both a skin abnormality and an immunologic difference, ill defined, in individuals subject to this disease.

Transfer of vaccinia virus can occur by autoinoculation or from contact with a vaccinee whose lesion is in the florid stages. Because most individuals have large contiguous patches of skin in the affected area, confluent lesions are the rule (on the face and limbs primarily).

With early recognition and prompt treatment with VIG, mortality can be reduced to zero, and morbidity alleviated. Scarring may be extensive.
severity: severe, especially if untreated
frequency: somewhat uncommon
VIG: indicated
reporting: report immediately to the Health Officer on call at the Public Health Department

**Generalized Vaccinia**

Generalized vaccinia is rare, usually benign, and the result of viremia. Within a week, lesions appear on any part of the body (most often on the trunk and abdomen, less commonly on the face, limbs, palms and soles). Lesions undergo rapid evolution to scarring. Rarely, lesions may recur at 4 - 6 week intervals for as long as one year.

Subtle minor immunologic abnormalities, particularly of the immunoglobulin B-cell system, are suspected to be present. Differentiate from erythema multiforme, eczema vaccinatum, progressive vaccinia, severe chickenpox, and smallpox. Consultation with an immunologist is strongly recommended.

Most instances of generalized vaccinia, particularly if the lesions are few, require no specific therapy. In some cases, with extensive lesions, or in recurrent disease, VIG should be administered.

  severity: benign, no hospitalization (exception: recurrent generalized vaccinia - hospitalize)
  frequency: rare
  VIG: indicated if severe or recurrent; not recommended if mild or limited - most instances
  reporting: report to the Health Officer on call at the Public Health Department

**Progressive Vaccinia**

Progressive vaccinia (also known as vaccinia necrosum) is a rare complication occurring primarily in T-cell deficient persons. Patients with T-cell deficiencies (cancer, HIV/AIDS, or those receiving immunosuppressive therapy) are at risk.

The primary vaccination fails to heal and spreads both locally and through the blood system to other parts of the body. Each lesion spreads without an inflammatory response. Untreated patients may succumb to viral infection or to secondary fungal, bacterial, or parasitic infections.

Complications include septic shock, disseminated intravascular coagulation, and superimposed microbial infections. If viable lymphocytes are administered, the patient may experience graft-versus-host disease.

Viral and immunologic laboratory investigation is mandatory. Therapy consists of intensive administration of antibody, usually in the form of VIG, in addition to supportive care.

  severity: severe - hospitalize
  frequency: rare
  VIG: indicated
  reporting: report immediately to the Health Officer on call at the Public Health Department

**Vaccinia Keratitis**

Although a rare occurrence, vaccinia virus can be implanted into diseased or injured conjunctiva and cornea resulting initially in viral replication with ulceration and ultimately in an antigen-antibody interaction leading to corneal cloudiness.

Ten days after transfer the clinical signs of infection (a central, grayish, disciform corneal lesion) can be seen. VIG is contraindicated for use in vaccinia keratitis. Topical antiviral agents are the treatment of choice in consultation with an experienced ophthalmologist.
severity: severe - if untreated
frequency: rare
VIG: contraindicated
reporting: report immediately to the Health Officer on call at the Public Health Department

Post-Vaccinia Encephalitis
Post-vaccinia encephalitis is a rare complication of primary vaccination (15 per million primary vaccinations). Encephalitis occurs 10-14 days after vaccination with headache, vomiting, drowsiness and fever as the first symptoms. In severe cases life-threatening complications can develop.

severity: severe - hospitalize
frequency: rare
VIG: not indicated
reporting: report immediately to the Health Officer on call at the Public Health Department

Fetal Vaccinia
Fetal vaccinia is a rare complication of smallpox vaccination. Fewer than 50 cases have been reported, usually after primary vaccination of the mother in early pregnancy. Fetal vaccinia usually results in stillbirth or death of the infant soon after delivery. Smallpox vaccine is not known to cause congenital malformations; however, data is limited.

severity: severe - hospitalize
frequency: rare
VIG: unknown
reporting: report immediately to the Health Officer on call at the Public Health Department

Death
Death resulting from smallpox vaccination is rare; in the past approximately 1 to 2 primary vaccinees died per million vaccinated. Death is most often the result of post-vaccinia encephalitis or progressive vaccinia.

reporting: report immediately to the Health Officer on call at the Public Health Department

More Vaccination Site Information
CDC has established a training module which includes extensive photographs of both adverse reactions and normal vaccination sites. The address of this website is: http://www.bt.cdc.gov/training/smallpoxvaccine/reactions/default.htm

Vaccinia Immune Globulin (VIG)
Vaccinia Immune Globulin (VIG) was produced in the 1960’s from plasma obtained from recently vaccinated donors and was administered intramuscularly.

Vials of intramuscular VIG (IM-VIG) are stored at the CDC and are available only under Investigational New Drug (IND) protocols. An effort is underway to produce new lots that will meet the standards for intravenous VIG (IV-VIG).

VIG Administration

<table>
<thead>
<tr>
<th>Indicated</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Autoinoculation (extensive lesions)</td>
</tr>
<tr>
<td>• Eczema vaccinatum</td>
</tr>
<tr>
<td>• Generalized vaccinia (if severe or recurrent)</td>
</tr>
<tr>
<td>• Progressive vaccinia (also known as vaccinia necrosum)</td>
</tr>
</tbody>
</table>
| Not Recommended | • Autoinoculation (mild instances)  
|                 | • Generalized vaccinia (mild or limited - most instances)  
|                 | • Erythema multiforme  
|                 | • Post-vaccinia encephalitis  
| Contraindicated | • Vaccinia keratitis (may produce severe corneal opacities)  

**Dosage**

The usual dose of IM-VIG is 0.6 ml/kg body weight. As much as 1-10 ml/kg body weight has been used in serious, life-threatening complications.

The exact dose of IV-VIG has not been determined but most likely will be administered at a lower dose than the intramuscular preparation.

**Physician’s Role**

- Be familiar with smallpox vaccination including contraindications and potential adverse reactions in order to counsel patients considering vaccination.
- Report immediately by telephone to the Public Health Department any known or suspected adverse reactions to smallpox vaccination that are serious, life-threatening and/or require hospitalization (see contact information below).
- Request consultation with the Public Health Department when encountering severe adverse reactions for which Vaccinia Immune Globulin may be required. VIG is available only from the CDC, and procurement must be coordinated through the local health department.

**Additional Information**

Extensive resources regarding smallpox and smallpox vaccination are available on the CDC website(s) and satellite broadcasts. These can be accessed at [www.bt.cdc.gov/agent/smallpox](http://www.bt.cdc.gov/agent/smallpox).

**Contact/Reporting Information**

To report known or suspected adverse reactions to smallpox vaccination, or for physician consultation during normal business hours, please call 530-882-7215 and ask to speak with the Public Health Officer (Dr. Kinnison). After hours and on weekends call the County Sheriff Dispatcher at 530-822-7307 and ask for the Public Health Officer or Public Health Duty Officer on call.

For all other questions or matters concerning the county’s smallpox vaccination plan, please contact the Public Health Department 530-882-7215 during normal business hours.