Large Vaccination Reactions and Robust Takes Bacterial Superinfection of Site
Robust Takes Definition

- Area of redness greater than 3 inches
- Swelling
- Warmth
- Pain at Vaccination Site
Robust Takes Differentiation

- Robust Take
  - Onset 8-10 days post-vaccination
  - Clinical improvement within 72 hours
  - Lack of clinical progression

- Secondary Bacterial Infection
  - Onset within 5 days post-vaccination, OR
  - Greater than 30 days post-vaccination
Robust Takes Clinical Management

- Vigilant observation
- Patient Education
- Supportive care
  - Rest of affected limb
  - Oral, non-steroidal anti-inflammatory medications
  - Oral anti-pruritic agents
- Do NOT apply salves, creams or ointments to vaccination site

SAFER • HEALTHIER • PEOPLE™
Vaccinia Specific Adverse Events
Contact Transmission Cases

- Eczema vaccinatum
- Inadvertent inoculation
- 5-19 days after suspected exposure
- Rate of 2 to 6 per 100,000 first-time vaccinations
Prevention of Contact Transmission

- Proper hand-hygiene
- Healthcare Setting
  - Cover with gauze
  - Cover gauze with semi-permeable dressing
  - Until scab separates
- Non-Healthcare Setting
  - Cover with gauze
  - Wear sleeve over site
Adverse Events Associated with Smallpox Vaccine

- Inadvertent inoculation
- Ocular vaccinia
- Generalized vaccinina
- Eczema vaccinatum
- Progressive vaccinia
- Post-vaccinial Encephalopathy
- Encephalomyelitis
- Fetal Vaccinia
Contraindications to Smallpox Vaccine

- Pregnant Women
- Eczema or Atopic Dermatitis
- Immunosuppression
- Skin Conditions (burns, herpes, shingles, etc.)
- Allergic to vaccine components
Treatments for Adverse Events

- VIG
- Cidofovir
- Ophthalmic antivirals
# Rates of Adverse Events 1968

<table>
<thead>
<tr>
<th>Condition</th>
<th>National Survey</th>
<th>Ten-State Survey</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>All primary vaccinees</td>
<td>Vaccines ≥1 yr old</td>
</tr>
<tr>
<td><strong>Serious, but not life-threatening</strong></td>
<td></td>
<td></td>
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<tr>
<td>Inadvertent Inoculation</td>
<td>25.4</td>
<td>27.1</td>
</tr>
<tr>
<td>Generalized Vaccinia</td>
<td>23.4</td>
<td>17.7</td>
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<tr>
<td>Erythema Multiforme</td>
<td>NA</td>
<td>NA</td>
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<tr>
<td><strong>Total</strong></td>
<td>48.8</td>
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<tr>
<td><strong>Life-threatening reactions</strong></td>
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<tr>
<td>Postvaccinial Encephalitis/Encephalomyelitis</td>
<td>2.9</td>
<td>2.4</td>
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<tr>
<td>Progressive Vaccinia</td>
<td>0.9</td>
<td>1.0</td>
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<tr>
<td>Eczema Vaccinatum</td>
<td>10.4</td>
<td>10.6</td>
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<tr>
<td><strong>Total</strong></td>
<td>14.2</td>
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<tr>
<td><strong>Deaths</strong></td>
<td>1.1</td>
<td>0.6</td>
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</tbody>
</table>
Rates of Adverse Events Today

- May be higher today
- More persons at risk from immune suppression
  - Cancer
  - Cancer therapy
  - Radiation
  - Organ Transplantation
  - HIV/AIDS
  - Eczema or Atopic Dermatitis
Local Skin Reactions
Irritation from Adhesive Dressing
Local Skin Reactions
Irritation from Adhesive Dressing
Local Skin Reactions
Secondary Reaction to Adhesive Dressing
Non-Specific Rashes
Erythematous Patches
Non-Specific Rashes
Maculopapular Rash