



# 2011 Institute of Medicine (IOM) Report-generated Proposals for Updates to the Vaccine Injury Table (VIT)

Presenting on Behalf of the Varicella Work Group

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# Proposed Table Injuries for Varicella Vaccines

- **Disseminated Vaccine-strain Virus Disease**
  - Widespread chickenpox rash shortly after vaccination
  - Infection resulting in disease in another organ
- **Vaccine-strain Virus Reactivation**
  - Appearance of chickenpox rash months to years after vaccination
  - Infection resulting in disease in another organ



# Varicella: Disseminated Vaccine-strain Virus Disease



## Summary Justification for Proposed Changes to the VIT

- The 2011 IOM committee found that the evidence convincingly supports a causal relationship between varicella vaccine and disseminated vaccine strain virus disease with involvement limited to the skin.
- The 2011 IOM committee found that the evidence convincingly supports a causal relationship between varicella vaccine and disseminated vaccine strain virus disease resulting in involvement of the lungs, meninges and liver and only in individuals with demonstrated immunodeficiencies.
  - The IOM limited their finding to immunocompromised individuals because the one immunocompetent individual [an adult] who had disseminated disease had Down syndrome, a condition in which some affected adults do have immunoglobulin abnormalities. However, the individual was not known to have an immune abnormality and it is felt that a limiting this Table injury to the immunocompromised would not be justified. In addition, our proposal does not limit the involvement of other organs to the lungs, meninges or liver.



# Varicella: Disseminated Vaccine-strain Virus Disease



## Listing of relevant literature

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# Varicella: Disseminated Vaccine-strain Virus Disease



## Listing of relevant literature cont.

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# Varicella: Disseminated Vaccine-strain Virus Disease



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# Varicella: Disseminated Vaccine-strain Virus Disease



## Listing of relevant literature cont.

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# Varicella: Disseminated Vaccine-strain Virus Disease



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# Varicella: Disseminated Vaccine-strain Virus Disease



## Current VIT

No injuries  
on the  
current Table

## Proposed VIT

Vaccine: Varicella vaccines

Injury: Disseminated varicella vaccine-strain  
viral disease

- Vaccine-strain virus identified
  - Time interval: Not applicable
- If strain determination is not done  
or if laboratory testing is inconclusive
  - Time interval: 7-42 days

Injury: Any acute complication or sequelae  
(including death) of above event

- Time interval: Not applicable



# Varicella: Disseminated Vaccine-strain Virus Disease



## Current QAI

No injuries  
on the  
current Table

## Proposed QAI

- Disseminated varicella vaccine-strain virus disease is defined as a varicella illness that involves the skin beyond the dermatome in which the vaccination was given and/or there is disease caused by vaccine-strain varicella in another organ.
- For organs other than the skin, disease, not just mildly abnormal laboratory values, must be demonstrated in the involved organ.
- If there is involvement of an organ beyond the skin, and no virus was identified in that organ, the involvement of all organs must occur as part of the same, discrete illness.
- If strain determination reveals wild-type varicella virus or another, non-vaccine-strain virus, the viral disease shall not be considered to be a condition set forth in the Table.
- If strain determination is not done or if the strain cannot be identified, onset of illness in any organ must occur 7– 42 days after vaccination.



# Varicella: Disseminated Vaccine-strain Virus Disease



## Justification for proposed QAI

- If the wild-type strain is identified, the cause of the injury will have been identified and there will be no basis for the presumption of vaccine causation to be given.
- Although in the majority of the cases reviewed by the IOM, the wild-type strain of the varicella virus was identified, the program is meant to be generous. Thus, if testing to determine the strain of the virus was not performed or was unsuccessful, the presumption of causation will be given if the injury onsets between 7 and 42 days after vaccination. This time interval was determined by considering the incubation period for the natural disease and careful review of the time intervals reported in the cases considered by the IOM.
- Since it is common for individuals with no actual disease to have mildly abnormal laboratory values, that alone is not sufficient to establish that there is actual disease in an organ other than the skin.



# Varicella: Vaccine-Strain Reactivation



## Summary Justification for Proposed Changes to the VIT

- The 2011 IOM committee found that the evidence convincingly supports a causal relationship between varicella vaccine and vaccine strain viral reactivation with involvement limited to the skin.
- The 2011 IOM committee that the evidence convincingly supports a causal relationship between varicella vaccine and vaccine strain reactivation with subsequent involvement of the brain and surrounding membranes. Although the IOM limited their causal conclusion to the brain and meninges, there is no justification for the Table injury to be limited in that way as demonstration of the vaccine-strain of the virus will be required to establish a Table injury.



# Varicella: Vaccine-Strain Reactivation



## Listing of relevant literature

Chaves, S. S., P. Haber, K. Walton, R. P. Wise, H. S. Izurieta, D. S. Schmid, and J. F. Seward. 2008. Safety of varicella vaccine after licensure in the United States: Experience from reports to the vaccine adverse event reporting system, 1995-2005. *Journal of Infectious Diseases* 197(SUPPL. 2):S170-S177.

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# Varicella: Vaccine-Strain Reactivation



## Listing of relevant literature cont.

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# Varicella: Vaccine-Strain Reactivation



## Listing of relevant literature cont.

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# Varicella: Vaccine-Strain Reactivation



## Current VIT

No injuries  
on the  
current Table

## Proposed VIT

Vaccine: Varicella vaccines

- Injury: Varicella vaccine-strain viral reactivation disease
  - Time interval: Not applicable
- Injury: Any acute complication or sequelae (including death) of above event
  - Time interval: Not applicable





# Varicella: Vaccine-Strain Reactivation



## Current QAI

No injuries  
on the  
current Table

## Proposed QAI

- Varicella vaccine-strain viral reactivation disease is defined as the presence of the rash of herpes zoster with or without concurrent disease in an organ other than the skin.
- For organs other than the skin, disease, not just mildly abnormal laboratory values, must be demonstrated in the involved organ.
- There must be laboratory confirmation that the vaccine-strain of the varicella virus is present in the skin or in any other involved organ.
- If strain determination reveals wild-type varicella virus or another, non-vaccine-strain virus, the viral disease shall not be considered to be a condition set forth in the Table.



# Varicella: Vaccine-Strain Reactivation



## Justification for proposed QAI

- If the wild-type strain is identified, the cause of the injury will have been identified and there will be no basis for the presumption of vaccine causation.
- As the majority of cases of varicella virus reactivation disease are caused by the wild-type virus and reactivation can occur decades after the initial viral exposure, if testing to identify the viral strain is not done or is unsuccessful, no presumption of vaccine causation would be appropriate.
- Vaccine strain reactivation can occur months to decades after the initial viral exposure making it impossible to define a relevant time interval between vaccine administration and onset of the injury.
- Since it is common for individuals with no actual disease to have mildly abnormal laboratory values, that alone is not sufficient to establish that there is actual disease in an organ other than the skin.



# Proposed VIT -Varicella Vaccines



Vaccine	Injury	Time Interval
Varicella vaccines	A. Anaphylaxis	$\leq 4$ hours
	B. Disseminated varicella vaccine-strain disease -- Vaccine Strain virus identified -- If strain determination is not done or if laboratory testing is inconclusive	Not applicable 7-42 days (not less than 7 days and not more than 42 days)
	C. Varicella vaccine-strain viral reactivation	Not applicable
	D. Shoulder Injury Related to Vaccine Administration	$\leq 48$ hours
	E. Vasovagal syncope	$\leq 1$ hour