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

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on behalf of the MMR Working Group

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Health Resources and Services Administration
Centers for Disease Control and Prevention
MMR- Adverse events

- Febrile Seizures
- Transient Arthralgia
- Measles inclusion body encephalitis (MIBE)
What are febrile seizures?

- Associated with a fever
- Infants or children
- Last a minute or two (few seconds to more than 15 minutes)
- No long-term sequelae
• The 2011 IOM committee concluded that the evidence convincingly supports a causal relationship between MMR vaccine and febrile seizures

• Information is not new with literature evidence going back to 1989
Listing of relevant literature


Listing of relevant literature (evidence for justification)


Febrile seizures occurring after MMR vaccinations hold no long-term consequences
  - no risk of subsequent seizure or neurodevelopmental disability
  - no increased rate of epilepsy

In comparison, post-vaccination syncope can lead to serious adverse events

No VIT revisions proposed
Listing of relevant literature


• Transient Arthralgia is a symptom with no long term effects
• The 2011 IOM committee concluded that the evidence favors acceptance of a causal relationship between MMR vaccine (rubella component) and transient arthralgia in women and children.
• The 2011 IOM committee concluded that the evidence is inadequate to accept or reject a causal relationship between MMR vaccine and chronic arthralgia.
• No VIT revisions proposed
Listing of relevant literature (evidence for justification)


In 2011, the Institute of Medicine, following an extensive review of the scientific and medical literature, concluded that the evidence convincingly supported a causal relationship between MMR vaccine and measles inclusion body encephalitis (MIBE) in individuals with demonstrated immunodeficiencies.
Summary Justification for Proposed Changes to the VIT

• The current VIT has the injury “Vaccine-strain measles infection in an immunodeficient recipient” for vaccines containing measles virus.

• Since MIBE is one type of measles-associated disease, the proposal involves revision of the current injury to include MIBE.
Justification for Proposed Changes to the Time Interval

- Based on 3 case reports the IOM reviewed, the time interval for MIBE is 4 – 9 months.
- Goon 2001 describes a patient with vaccine strain measles with onset of symptoms 8 days after vaccination.
- Angel 1998 describes a patient with vaccine-associated measles pneumonitis with onset of symptoms 11 months after vaccination.

Proposal:
- Broad interval of $\leq 12$ months for those cases in which typing of vaccine strain was not performed.
- If vaccine strain is identified, no time frame will be applicable.
Listing of relevant literature (evidence for justification)


Listing of relevant literature (evidence for justification)

Current VIT

- **Vaccine:**
  Vaccines containing measles virus (e.g., MMR, MMRV, MR, M)
- **Injury (Time Interval):**
  A. Thrombocytopenic purpura (7 – 30 days)
  B. Vaccine-Strain Measles Viral Infection in an immunodeficient recipient (6 months)
  C. Any acute complication or sequela, including death, of above events that arose within the time period prescribed (Not applicable)

Proposed VIT

- **Vaccine:**
  Vaccines containing measles virus (e.g., MMR, MMRV, MR, M)
- **Injury (Time Interval):**
  A. Thrombocytopenic purpura (7 – 30 days)
  B. Vaccine-Strain Measles Viral Disease in an immunodeficient recipient
    - Vaccine –strain virus identified (Not Applicable)
    - If strain determination is not done or if laboratory testing is inconclusive (≤ 12 months)
  (b) Any acute complication or sequela, including death…of above events…
### Current VIT

<table>
<thead>
<tr>
<th>Vaccines containing measles virus (e.g., MMR, MMRV, MR, M)</th>
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• Proposed VIT

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| Vaccine-Strain Measles Viral Disease in an immunodeficient recipient | • Vaccine –strain virus identified  
• If strain determination is not done or if laboratory testing is inconclusive | Not Applicable  
≤ 12 months |
Current QAI

- Vaccine-strain measles viral infection is a disease caused by the vaccine-strain that should be determined by vaccine-specific monoclonal antibody or polymerase chain reaction tests.

Proposed QAI

- This term is defined as a measles illness that involves the skin and/or other organs (such as the brain and lungs).
- Measles virus must be isolated from the affected organ or histopathologic findings characteristic for the disease must be present.
- Measles viral strain determination may be performed by methods such as polymerase chain reaction test and vaccine-specific monoclonal antibody.
- If strain determination reveals wild-type measles virus or another, non-vaccine-strain virus, the 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 within 12 months after vaccination.
Current QAI

Vaccine-strain measles viral infection is a disease caused by the vaccine-strain that should be determined by vaccine-specific monoclonal antibody or polymerase chain reaction tests.
Proposed QAI

- This term is defined as a measles illness that involves the skin and/or other organs (such as the brain and lungs).
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MMR- Vaccine-strain measles viral disease

Justification for proposed QAI

- **Science**
  - Isolation of measles virus from the affected organ and/or characteristic histopathologic findings
  - Identification of vaccine-strain measles virus by PCR or specific monoclonal antibody
  - Diseases in persons with immunodeficiencies

- **ACCV Guiding Principles**
  - Presumption of causation to cases in which the vaccine-strain is undetermined or testing is inconclusive
    - Only 1 out of 3 cases of MIBE showed vaccine-strain virus
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