

DEPARTMENT OF HEALTH AND HUMAN SERVICES

Health Resources and Services Administration

42 CFR Part 100

National Vaccine Injury Compensation Program: Statement of Reasons for Not Conducting Rulemaking Proceedings

AGENCY: Health Resources and Services Administration (HRSA), Department of Health and Human Services (HHS).

ACTION: Denial of petition for rulemaking.

SUMMARY: In accordance with section 2114(c)(2)(B) of the Public Health Service Act, 42 U.S.C. 300aa–14(c)(2)(B), notice is hereby given concerning the reasons for not conducting rulemaking proceedings to add food allergies as an injury associated with vaccines to the Vaccine Injury Table.

DATES: Written comments are not being solicited.

FOR FURTHER INFORMATION CONTACT: Dr. Narayan Nair, MD, Acting Director, Division of Injury Compensation Programs (DICP), Healthcare Systems Bureau, Health Resources and Services Administration, 5600 Fishers Lane, Room 8N146B Rockville, Maryland 20857, or by telephone 301–443–6593.

SUPPLEMENTARY INFORMATION: The National Childhood Vaccine Injury Act of 1986, Title III of Public Law 99–660 (42 U.S.C. 300aa–10 *et seq.*) established the National Vaccine Injury Compensation Program (VICP) for persons found to be injured by vaccines. Under this federal program, petitions for compensation are filed with the United States Court of Federal Claims (Court). The Court, acting through special masters, makes findings as to eligibility for, and amount of, compensation. In order to gain entitlement to compensation under the VICP for a covered vaccine, a petitioner must establish a vaccine-related injury or death, either by proving that the first symptom of an injury or condition, as defined by the Qualifications and Aids to Interpretation, occurred within the time period listed on the Vaccine Injury Table (Table), and therefore, is presumed to be caused by a vaccine (unless another cause is found), or by proof of vaccine causation, if the injury or condition is not on the Table or did not occur within the time period specified on the Table.

The statute authorizing the VICP provides for the inclusion of additional

vaccines in the VICP when they are recommended by the Centers for Disease Control and Prevention (CDC) for routine administration to children. See section 2114(e)(2) of the PHS Act, 42 U.S.C. 300aa–14(e)(2). Consistent with section 13632(a)(3) of Public Law 103–66, the regulations governing the VICP provide that such vaccines will be included in the Table as of the effective date of an excise tax to provide funds for the payment of compensation with respect to such vaccines. 42 CFR 100.3(c)(8). The statute authorizing the VICP also authorizes the Secretary to create and modify a list of injuries, disabilities, illnesses, conditions, and deaths (and their associated time frames) associated with each category of vaccines included on the Table. See sections 2114(c) and 2114(e)(2) of the PHS Act, 42 U.S.C. 300aa–14(c) and 30aa–14(e)(2). Finally, section 2114(c)(2) of the PHS Act, 42 U.S.C. 300aa–14(c)(2) provides that:

[a]ny person (including the Advisory Commission on Childhood Vaccines) [the Commission] may petition the Secretary to propose regulations to amend the Vaccine Injury Table. Unless clearly frivolous, or initiated by the Commission, any such petition shall be referred to the Commission for its recommendations. Following—

(A) Receipt of any recommendation of the Commission, or

(B) 180 days after the date of the referral to the Commission, whichever occurs first, the Secretary shall conduct a rule-making proceeding on the matters proposed in the petition or publish in the **Federal Register** a statement or reasons for not conducting such proceeding.

On September 19, 2015, a private citizen submitted an email to the Department of Health and Human Services (HHS) and the Commission, requesting that food allergies be added to the Table. The email was considered to be a petition to the Secretary of HHS to propose regulations to amend the Table to add food allergies as an injury associated with vaccines on the Table. In support of the request that food allergies be added to the Table, the petitioner asserts that food proteins present in vaccines cause the development of food allergies.

Pursuant to the VICP statute, the petition was referred to the Commission on December 3, 2015. The Commission voted unanimously to recommend that the Secretary not proceed with rulemaking to amend the Table as requested in the petition.

Food allergies are defined as an “adverse health effect arising from a specific immune response that occurs reproducibly on exposure to a given

food.”¹ Food allergy reactions are generally classified as mediated through immunoglobulin E (IgE), not mediated through IgE, or involving both IgE and non-IgE mechanisms. Food allergies are thought to result from a failure of the regulatory mechanisms of the immune system. IgE mediated reactions cause the severe and rapid responses to food known as anaphylaxis. Non-IgE mediated reactions cause slower onset skin and gastrointestinal symptoms.

When a food allergy occurs, the body’s immune system reacts to a food as if it was a threat. When people are first exposed to a potential food allergen, they do not experience symptoms but, in some people, their immune system produces IgE to that food allergen. The production of IgE in response to an allergen is called sensitization. It is thought that sensitization can occur from exposure to the food through the skin and respiratory route, as well as from eating food allergens. When sensitized people are exposed to the food allergen again, the IgE antibodies may bind to the allergen, resulting in a release of chemicals which can trigger a severe allergic response. The symptoms of this response can include hives, itching, nausea, vomiting, swelling of the mouth and throat, difficulty breathing, and low blood pressure.² Not all people who have IgE to a food will have an allergic response.

To support the claim that food allergies are caused by vaccines, the petitioner cites two sources as evidence including the 2012 Institute of Medicine (IOM) Report, “Adverse Effects of Vaccines: Evidence and Causality.” The 2012 IOM report reviewed 8 of the 12 vaccines covered by the VICP and provided 158 causality conclusions. However, the IOM report did not evaluate evidence regarding a causal association between vaccinations and food allergies. The report does describe case reports of individuals with a history of allergies to eggs, lamb, or milk that experienced anaphylaxis or an allergic reaction after receiving an immunization.³ The IOM report does not address whether individuals who receive a vaccination may subsequently develop food allergies. This report does not comment on the strength of the

¹ Boyce et al, Guidelines for the diagnosis and management of food allergy in the United States: Summary of the NIAID-sponsored expert panel report. *J Allergy Clin Immunol*, Volume 16, Number 6, S1–58.

² <http://www.niaid.nih.gov/topics/foodAllergy/understanding/Pages/allergicRxn.aspx>

³ IOM (Institute of Medicine). 2012. *Adverse effects of vaccines: Evidence and causality*. Washington, DC: The National Academies Press. pp 170–173.

epidemiologic or mechanistic evidence regarding food allergies and vaccination. Therefore, the 2012 IOM report does not support the petitioner's position for adding food allergies to the Table.

The petition also describes a 2002 paper that appeared in the journal, *Pediatrics*.⁴ The authors of this paper included researchers from CDC, the Food and Drug Administration (FDA), and the Mayo Clinic. The objective of this study was not to evaluate whether vaccines could cause food allergies. Rather, the purpose of the study was to examine whether people with anaphylaxis after the receipt of the measles vaccines had an unusual profile of self-reported allergies and whether they had higher levels of antibodies to gelatin, a compound found in both foods and some vaccines. This was a case control study utilizing the Vaccine Adverse Event Reporting System (VAERS) database for cases of anaphylaxis and individuals from the Mayo Clinic and VAERS who did not have an adverse event to the measles vaccine as controls. The study had relatively small numbers as only 57 individuals who had anaphylaxis agreed to be interviewed and of these, only 22 underwent IgE testing. The researchers found that there was a higher proportion of food allergies found in the group with anaphylaxis as opposed to the control group. However, it was not clear if the food allergies preceded the vaccine. They also noted that a number of individuals who had anaphylaxis to the vaccine also had the IgE antibody to the gelatin. However, none of these individuals reported an allergy to gelatin.

This paper is not supportive of adding food allergies to the Table for several reasons. First, it was not designed to determine the causality of food allergy but rather whether severe allergic reactions to the measles vaccines could be due to gelatin. Gelatin is present in numerous foods including confectionary products, icings and fillings in baked goods, meat products, wine, beer, and

⁴ V. Pool, et al. "Prevalence of anti-gelatin IgE antibodies in people with anaphylaxis after measles-mumps-rubella vaccine in the United States," *Pediatrics*, 110, 6 (Dec. 2002): e71.

juices.⁵ Given that oral intake is not necessary for sensitization, a wide array of exposures could have led to the development of a food allergy. Second, the individuals in this study who had anaphylaxis to the measles vaccine and had antibodies to gelatin did not report a food allergy. This finding does not support a causal association between vaccines and food allergies, nor do the authors contend this in their study. Third, while there was a higher proportion of food allergies reported in the anaphylaxis group, the authors state the practical significance of this is not clear. They conclude that their data could support the hypothesis that anaphylaxis to the measles vaccine could be due to sensitivity to gelatin but they do not assert that vaccines cause or contribute to food allergies. Finally, there are limitations to VAERS, which is a passive reporting system, and the primary purpose of VAERS is to look for signals for evidence of unexpected adverse events that would require other investigations to try to determine causal relationships. Thus, most VAERS reports alone cannot be utilized to establish conclusions about causality.

In addition to reviewing evidence submitted by the petitioner, HHS gathered additional data from the existing medical literature. A literature search was conducted of the major medical databases for any articles linking the development of food allergies to vaccinations. This research was conducted in collaboration with the National Institutes of Health (NIH) Library, Office of Research Services. Despite an extensive search, no published research was found that addressed any linkages or potential causality between vaccinations covered by VICP and the development of food allergies in any population.

While none of the publications identified a link between food allergies and vaccines, several did address risk factors related to the development of food allergies. The NIH National Institute of Allergy and Infectious Disease sponsored an expert panel to develop guidelines for the diagnosis and

⁵ http://www.gelatin-gmia.com/images/GMIA_Gelatin_Manual_2012.pdf.

management of food allergies. This panel consisted of 34 professional organizations, federal agencies and patient advocacy groups all with expertise related to food allergies. The guidelines, which were published in 2010, discuss prevention of food allergies but make no mention of the role of vaccines in developing food allergies. They also do not list vaccination as a risk factor for developing food-induced anaphylaxis. The Guidelines discuss gaps in the scientific knowledge related to food allergies. However, they did not identify the role of vaccination in developing food allergies as an area where future research is needed.⁶ Several recent reviews of the epidemiology and natural history of food allergies have been published. None of the publications discuss any role of vaccinations in the development of food allergies.^{7 8 9 10 11 12}

In light of the above, I have determined that there is no reliable scientific evidence of an association between vaccines and food allergies. Therefore, I will not amend the Table to add food allergies as an injury associated with any vaccine on the Table at this time.

Dated: March 17, 2016.

Sylvia M. Burwell,

Secretary, Department of Health and Human Services.

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⁶ Boyce et al, Guidelines for the diagnosis and management of food allergy in the United States: Summary of the NIAID-sponsored expert panel report. *J Allergy Clin Immunol*, Volume 16, Number 6, S1-58.

⁷ Lack, G. (2012). "Update on risk factors for food allergy." *Journal of Allergy and Clinical Immunology* 129(5): 1187-1197.

⁸ Savage, J. and C. B. Johns. (2015). "Food allergy: Epidemiology and natural history." *Immunol Allergy Clin North Am* 35(1): 45-59.

⁹ Sicherer, S. H. (2011). "Epidemiology of food allergy." *Journal of Allergy and Clinical Immunology* 127(3): 594-602.

¹⁰ Carrard, A., D. Rizzuti, et al. (2015). "Update on food allergy." *Allergy*. 70: 1511-1520.

¹¹ Chin, S. and B. P. Vickery. (2012). "Pathogenesis of food allergy in the pediatric patient." *Curr Allergy Asthma Rep* 12(6): 621-9.

¹² Allen, K. J. and J. J. Koplin. (2015). "Why Does Australia Appear to Have the Highest Rates of Food Allergy?" *Pediatr Clin North Am* 62(6): 1441-51.