



**TESTIMONY OF SCOTT NEEDLE, MD, FAAP
ON BEHALF OF THE AMERICAN ACADEMY OF PEDIATRICS**

COMMITTEE ON OVERSIGHT AND GOVERNMENT REFORM

July 19, 2007

Good morning. I appreciate this opportunity to testify today before the Committee on Oversight and Government Reform at this hearing on trailers provided after Hurricane Katrina by the Federal Emergency Management Agency (FEMA). My name is Scott Needle, MD, FAAP, and I am proud to represent the American Academy of Pediatrics (AAP), a non-profit professional organization of more than 60,000 primary care pediatricians, pediatric medical sub-specialists, and pediatric surgical specialists dedicated to the health, safety, and well-being of infants, children, adolescents, and young adults. I serve on the Academy's Disaster Preparedness Advisory Council. Until recently, I was a general pediatrician in private practice in Bay St. Louis, Mississippi, an area that experienced some of the worst devastation of Hurricane Katrina .

The American Academy of Pediatrics (AAP) has grave concerns regarding the current and future health of children in the Gulf Coast who continue to recover from Hurricane Katrina. From the dangers and hardship associated with evacuation and relocation, to respiratory problems and injuries immediately after the hurricane, to the ongoing concerns related to mental health effects, the children of the Gulf Coast have borne an enormous amount of suffering associated with that disaster. Today's hearing examines the potential risks to children's health associated with exposure to formaldehyde gas in the trailers provided by the FEMA following Hurricane Katrina.

Formaldehyde gas is known to cause a wide range of health effects. The AAP handbook on pediatric environmental health acknowledges that, "Formaldehyde is a known

respiratory irritant in the occupational setting and a common air pollutant in the home.”¹

The federal Agency for Toxic Substances and Disease Registry states:

Formaldehyde is an eye, skin, and respiratory tract irritant. Inhalation of vapors can produce narrowing of the bronchi and an accumulation of fluid in the lungs. Children may be more susceptible than adults to the respiratory effects of formaldehyde. ... Even fairly low concentrations of formaldehyde can produce rapid onset of nose and throat irritation, causing cough, chest pain, shortness of breath, and wheezing. Higher exposures can cause significant inflammation of the lower respiratory tract, resulting in swelling of the throat, inflammation of the windpipe and bronchi, narrowing of the bronchi, inflammation of the lungs, and accumulation of fluid in the lungs. Pulmonary injury may continue to worsen for 12 hours or more after exposure. ... Children may be more vulnerable to corrosive agents than adults because of the relatively smaller diameter of their airways. Children may be more vulnerable because of relatively increased minute ventilation per kg and failure to evacuate an area promptly when exposed.²

Studies since 1990 have found higher rates of asthma, chronic bronchitis, and allergies in children exposed to elevated levels of formaldehyde.^{3,4,5,6} In 2004, the International Agency for Research on Cancer, an arm of the World Health Organization, classified formaldehyde as a carcinogen;⁷ the U.S. National Toxicology Program classifies it as “reasonably anticipated to be a human carcinogen.”⁸

Formaldehyde is used in hundreds of products, but particularly in the resins used to bond laminated wood products and to bind wood chips in particleboard. Mobile homes and travel trailers, which have small, enclosed spaces, low air exchange rates, and many particleboard furnishings, may have much higher concentrations of formaldehyde than other types of homes.^{9,10}

My concern in this issue stems from my experience treating children in Hancock County, Mississippi in the weeks and months following Hurricane Katrina. In spring 2006,

certain patterns of illness emerged among some of my patients. Many children returned repeatedly to my office with symptoms that would not go away, or that would clear up and then recur: sinus infections, ear infections, colds, and other respiratory symptoms. In talking with these families, I found that they all shared two common characteristics. First, they were all living in travel trailers provided by FEMA. Second, these families reported that their symptoms started not long after moving into these trailers.

Research revealed that my patients' symptoms were all consistent with exposure to formaldehyde. At the same time, the Sierra Club released the results of testing which found 29 out of 31 trailers with elevated levels of formaldehyde.¹¹ Over the subsequent year, I contacted the Mississippi Department of Health, the Centers for Disease Control and Prevention (CDC), and various researchers at Gulf Coast universities, and others to alert them to the patterns I was seeing. Unfortunately, my efforts did not lead to any immediate action. I am therefore personally and professionally grateful to you for bringing attention to this issue through this hearing.

The American Academy of Pediatrics remains deeply concerned that Gulf Coast children residing in FEMA trailers may have been and may continue to be exposed to levels of formaldehyde gas that are hazardous to both their short-term and long-term health. The Academy urges FEMA and federal health agencies undertake a systematic, scientifically rigorous study of this issue to determine children's exposure levels and correlation with reported symptoms, and steps that should be taken to safeguard their health. Furthermore, the Academy urges FEMA to set standards for formaldehyde levels in

trailers purchased by the agency that are consistent with the most current science, including an additional margin of safety that takes into account the special vulnerabilities of children. Finally, the Academy encourages FEMA to explore alternative options for providing short- and long- term housing to disaster victims that would pose fewer health risks than the travel trailers currently occupied since Hurricane Katrina.

The American Academy of Pediatrics commends you, Mr. Chairman, for holding this hearing today to call attention to the potential hazards of formaldehyde exposure among Gulf Coast children residing in FEMA trailers. We look forward to working with Congress to minimize the exposure of children and all Americans to potentially toxic chemicals in these and other settings. I appreciate this opportunity to testify, and I will be pleased to answer any questions you may have.

¹ American Academy of Pediatrics. Pediatric Environmental Health, 2d Edition. American Academy of Pediatrics, 2003.

² Agency for Toxic Substances & Disease Registry. Medical Management Guidelines for Formaldehyde. <http://www.atsdr.cdc.gov/MHMI/mmg111.html#bookmark02>

³ American Academy of Pediatrics. Pediatric Environmental Health, 2d Edition. American Academy of Pediatrics, 2003.

⁴ Wantke F, Demmer CM, Tappler P, Gotz M, Jarisch R. Exposure to gaseous formaldehyde induces IgE-mediated sensitization to formaldehyde in school-children. *Clin Exp Allergy*. 1996 Mar; 26(3):276-80.

⁵ Garrett MH, Hooper MA, Hooper BM, Rayment PR, Abramson MJ. Increased risk of allergy in children due to formaldehyde exposure in homes. *Allergy*. 1999 Apr; 54(4):330-7.

⁶ Rumchev KB, Spickett JT, Bulsara MK, Phillips MR, Stick SM. Domestic exposure to formaldehyde significantly increases the risk of asthma in young children. *Eur Respir J*. 2002 Aug; 20(2):403-8.

⁷ International Agency for Research on Cancer, "IARC Classifies Formaldehyde As Carcinogenic to Humans," Press Release No. 153, June 15, 2004, http://www.iarc.fr/ENG/Press_Releases/archives/pr153a.html

⁸ Krzyzanowski M, Quackenboss JJ, Lebowitz MD. Chronic respiratory effects of indoor formaldehyde exposure. *Environ Res*. 1990 Aug; 52(2):117-25.

⁹ American Academy of Pediatrics. Pediatric Environmental Health, 2d Edition. American Academy of Pediatrics, 2003.

¹⁰ Spengler JD. Sources and concentrations of indoor air pollution. In: Samet JM, Spengler JD, eds. *Indoor Air Pollution: A Health Perspective*. Baltimore, MD: Johns Hopkins University Press; 1991.

¹¹ Sierra Club. Toxic Trailers? Tests Reveal High Formaldehyde Levels in FEMA Trailers. http://www.sierraclub.org/gulfcoast/downloads/formaldehyde_test.pdf.