



August 11, 2014

Office of Pesticide Programs (OPP)
Regulatory Public Docket (7502P)
U.S. Environmental Protection Agency
1200 Pennsylvania Avenue, NW
Washington, D.C. 20460-0001

Re: Docket ID No. EPA-HQ-OPP-2011-0184; FRL-9395-8

Submitted via <http://www.regulations.gov>

The Children's Environmental Health Network (the Network) and the American Academy of Pediatrics (AAP) appreciate the opportunity to comment on the Agency's proposed revisions to the Agricultural Worker Protection Standard with respect to pesticides.

The Children's Environmental Health Network (CEHN) is a national multi-disciplinary organization whose mission is to protect the developing child from environmental hazards and promote a healthier environment. The Network's Board and committee members include internationally-recognized experts in children's environmental health science and policy who serve on key Federal advisory panels and scientific boards. We recognize that children, in our society, have unique moral standing.

The American Academy of Pediatrics is a non-profit professional organization of 62,000 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.

General Comments

Overall, the Network and the AAP strongly support the EPA's strengthening of the protection standards for workers involved in handling or overseeing potential exposure to pesticides. In updating the worker protection standards, the EPA should strive to decrease exposure of all individuals to pesticides by looking at what happens in the work environment and what happens as the workers move into their home and community environments.¹ Some of the workers protected may themselves be children, as the rule will affect adolescent workers who may be at risk from harm due to pesticide exposure (see below). Male workers, be they adolescents or adults, are potential fathers, and there are concerns about the impact of pesticide exposure on the form and function of sperm and adverse outcomes in pregnancy and in the children conceived. Female workers who are in the childbearing years or are pregnant will also need added protection from pesticides, as there are concerns about the impact of pesticide exposure before and during

¹ American Academy of Pediatrics Council on Environmental Health. Policy Statement: Pesticide Exposure in Children. *Pediatrics*. 2012; 130(6): e1757-e1763. doi: 10.1542/peds.2012-2757.

pregnancy on the outcome of the child at birth and in the years after birth. Finally, workers of all ages have the potential to take pesticides home on their shoes, clothing and bodies. It is also very clear that proximity to fields and having workers in the home correlates with pesticide levels in dust and in urine samples among residents.² It is therefore evident that by decreasing exposure to pesticides among all workers, as well as increasing the appropriate education of these workers about minimizing take-home exposures, these draft regulations will decrease take-home exposure among the family members (children, adults, the elderly) of all workers, thus expanding the benefits of the proposed rule.

Concern About Adolescent Workers

There are no longitudinal studies tracking individuals from adolescence through old age and attempting to correlate outcomes in later life with pesticide exposures in adolescence. We therefore urge EPA to consider abnormal outcomes that may occur to the adolescent in both the near- and the long-term. EPA should also consider the potential for adverse outcomes in the offspring of workers. Adolescents are, by definition, of child-bearing age, and some adolescent women may be pregnant at the time of their exposure.

Occupational exposure to some pesticides is associated with an increased life-time risk of developing cancer. Some pesticides are endocrine disrupting chemicals and may be associated reproductive effects and developmental difficulties in offspring.

Given that adolescents have a longer projected life span than older workers, the time within which they may develop these or other adverse outcomes is increased.

Concerns About Male Workers Who May Father Children

Paternal use of pesticides after a child is born is associated with an increased risk of childhood leukemia with odds-ratios between 1.41 and 1.82, depending on the class of pesticide to which the father was exposed.³ In a cohort study of more than 200,000 patients, paternal exposure in any occupation and in agricultural/forestry preceding conception was associated with an increased risk of central nervous system tumors (relative risk [RR], 2.36 [95% CI, 1.27–4.39] and RR, 2.12 [95% CI, 1.08–4.39], respectively).⁸³ Two studies from Minnesota have reported a relationship between physical defects in children and paternal occupation of pesticide applicator.⁴

Concerns About Female Workers of Child-Bearing Age or Who Are Pregnant

Infante-Rivard and Weichenthal reviewed the literature on the association between pesticide exposure and childhood leukemia.⁵ Their review showed that 5 of 6 recent case-control studies found a statistically significant relationship between pesticide exposure and leukemia. Given that

² *ibid*

³ Infante-Rivard C, Labuda D, Krajcinovic M, Sinnott D. Risk of childhood leukemia associated with exposure to pesticides and with gene polymorphisms. *Epidemiology*.1999;10(5):481–487

⁴ Roberts, 2012

⁵ *ibid*

the primary risk factors were maternal exposure to pesticide between the periods of preconception through pregnancy, worker protection is essential.

Another recent series of research studies found that higher levels of prenatal exposure to a common pesticide were linked to lower IQs and poorer working memory at age 7 in the offspring.⁶ Other studies have linked maternal occupational exposure to pesticides and birth defects in their offspring.⁷

Thus, it is vital for the Agency to move toward greater protections, increased training and communication requirements, and other measures for those who handle or may be exposed to pesticides. The risks of take-home exposure coupled with the heightened vulnerability of children make it especially vital that the Agency's Agricultural Worker Protection Standards comprehensively consider and protect children.

We also urge the Agency in its rule to require access to information for non-English speakers. Throughout these guidelines, the Agency must recognize and address the additional challenges faced by non-English speakers and the challenges in assuring that this population receives adequate information, training and communication. We urge EPA to support multiple avenues of communication, including through schools, clinics, and NGOs that work with the affected populations, to assure that all affected workers and their families receive the information and protections that they deserve, regardless of language spoken.

The Network's and AAP's specific comments follow.

Increase the Minimum Age Requirement

For the proposed minimum age (pg. 15445, A. *Executive Summary*, paragraph 6; page 15457-15458 section E. *Children's Protection*; pg. 15483 XI. Handler Restrictions) the Network and AAP strongly urge the adoption of age 18 as the minimum for handling pesticides. The Agency must recognize that teenagers under the age of 18 are still developing in critical physical and emotional areas, with particular regard to their brains and reproductive systems. Many pesticides are highly

⁶ Virginia Rauh, Srikes Arunajadai, Megan Horton, Frederica Perera, Lori Hoepner, Dana B. Barr, Robin Whyatt. [7-Year Neurodevelopmental Scores and Prenatal Exposure to Chlorpyrifos, a Common Agricultural Pesticide](#). Environmental Health Perspectives, published 21 Apr 2011. doi: 10.1289/ehp.1003160;

Stephanie M. Engel, James Wetmur, Jia Chen, Chenbo Zhu, Dana Boyd Barr, Richard L. Canfield, Mary S. Wolff. [Prenatal Exposure to Organophosphates, Paraoxonase 1, and Cognitive Development in Childhood](#) Environmental Health Perspectives, published 21 Apr 2011. doi: 10.1289/ehp.1003183;

Maryse F. Bouchard, Jonathan Chevrier, Kim G. Harley, Katherine Kogut, Michelle Vedar, Norma Calderon, Celina Trujillo, Caroline Johnson, Asa Bradman, Dana Boyd Barr, Brenda Eskenazi. [Prenatal Exposure to Organophosphate Pesticides and IQ in 7-Year Old Children](#). Environmental Health Perspectives, published 21 Apr 2011. doi: 10.1289/ehp.1003185

⁷ Roberts, 2012

toxic to the brain and reproductive system and will cause long-term damage to those systems. Pesticides also greatly increase the likelihood of diseases such as cancer and Parkinson's; and the risk is positively correlated with each additional year of exposure. Furthermore, decision making skills of those under 18 are underdeveloped and can cause the individual to make harmful decisions and take unnecessary risks. The proposed rule itself acknowledges that in all other industries, 16- and 17-year-old teenagers are not allowed to work with hazardous chemicals, a protection that the Network and AAP believe should be extended to pesticide work. The Network and AAP strongly believe that the costs imposed by requiring an age minimum of 18 are outweighed by the benefits of reducing the life-long health problems caused by pesticide exposure.

Worker Training Requirements

The Network and AAP appreciate the EPA's attention to the risks of take-home exposure of pesticides, and the implementation of basic worker training and education of this matter (pg. 15448 subsection *b. Improving training for workers and handlers on reducing take-home pesticide exposure*; pg. 15467 4. *Details of the proposal/rationale*; pg. 15476 IX. Hazard Communication). Young children are the most vulnerable to pesticides. This is due to the increased level of air, water, and food that they intake per pound compared to an adult, as well as the fact that their physical, mental, and emotional development occurs rapidly during this time. The exposure that occurs from pesticides brought home on clothes can have very damaging and life-long effects for these children and relatives of agricultural workers. Pesticide handlers and all other workers potentially exposed to pesticide drift or pesticide residues need to be educated thoroughly on the harms of take-home exposure as well as how to prevent this exposure. This information is critical for the health and safety of all individuals within a family.

The Network and AAP also highly recommend that worker training content include education on the effects of pesticides on reproductive health, as well as the developmental health impacts on children. There is an increasing amount of evidence finding harmful effects of pesticides on reproductive health. As discussed above, prenatal exposure to pesticides has been linked to numerous children's health problems, from increased rates of neurological issues such as ADHD, to poor infant growth and development of respiratory problems, as described earlier.

Additionally, shortening the interval between trainings to one year (pg. 15460, A. Shorten Retraining Interval for Workers and Handlers) is a very positive step. Annual trainings will help workers retain and apply this safety content, especially considering that a large number of those who work with pesticides have limited formal education and low levels of literacy, making it much more difficult for them to seek this information elsewhere. Furthermore, most Occupational Safety and Health Administration (OSHA) standards require annual training in high-hazard occupations.

Regarding the shortening of the training grace period from 5 days to 2 (pg. 15504 XVIII. Exemptions and Exceptions), the Network and AAP believe that this change is inadequate because it does not address the core issue. During this grace period children can be exposed to pesticides because of the simple lack of information on prevention of take-home hazards. OSHA requires employers in almost all industries to notify their workers of the hazards that may be encountered in the workplace before the work begins. The same protection and information should be required here.

Hazard Communications

Information about the pesticides used in a particular facility must be posted in a central location, along with requiring further information being available on hand (pg. 15476-15477, IX. Hazard Communication). OSHA requirements for all other industries state that all labor information be posted at the workplace. Having the information available only upon request places the burden on the worker, advocate, or healthcare provider to obtain or request this information in non-emergency situations. There is no guarantee that workers will understand they have this right or even request such information due to fear of reprisals or language barriers. This information is important for workers to identify and prevent over-exposures, and healthcare providers need this information to assist in a differential diagnosis and for more accurate incident reporting. Without clear information, there is not only risk to the worker, but also increased risk to children and other family members due to the possibility of take-home exposures.

The Network and AAP commend the strengthened warning protections for restricted areas by posting signs in the specific restricted area (pg. 15472 VIII. Notifications to Workers and Handlers; XIII Display of Basic Pesticide Safety Information). Furthermore, the Network and AAP recommend that signs be posted surrounding the premises to warn those living in the area of the danger of being exposed. It is only common sense that warnings should be posted in advance of the application rather than posting at the end of day. Those who do not work within the facility but who live near to or travel through the treated area will not otherwise have the information.

With regard to pesticide drift problems (XI. Handler Restrictions), the Network and AAP believe that the further restriction of ceasing all spray of pesticides when an unprotected/non-trained person enters the area is a step in the right direction.

The decision not to supply bilingual Safety Data Sheets (pg. 15478, IX. Hazard Communication) when most of the pesticide workers are primarily non-English speaking places an unreasonable burden on those with language barriers to be able to work safely. The Network and AAP commend the EPA's understanding of disproportionate impacts on minorities and focus upon environmental justice (pg. 15457, section D. Environmental Justice), and emphasize that education on the effects of handling pesticides needs to be clear to all who face the possibility of exposure. This particularly affects minority populations with significant English-language barriers. While English may be the primary language spoken in the whole of the United States, safety measures to protect workers cannot wait until high English language proficiency is achieved. The consequences to themselves or their children and families may not be understood if it is not available in a language they can fully understand.

In addition, the Network and AAP are concerned about the use of solely oral notifications of a restricted-entry interval (REI) under 48 hours (pg. 15472, VIII. Notifications to Workers and Handlers). Relying only on oral dissemination of knowledge is inadequate for assuring that workers and handlers will be adequately informed and protected. The Network and AAP recommend posted signs for an REI of 8 hours or more, with oral notification allowed for time less than that.

The Network and AAP appreciate the movement forward by the EPA in regards to early-entry worker training and education (pg. 15486, XII. Restrictions for Worker Entry into Treated Areas).

In addition, written proof of oral notification is a positive step in assuring all workers are adequately informed of the risks they face. The Network and AAP reemphasize that the minimum age for pesticide workers should be 18, and that no individual under 18 should be exposed to the risks of early-entry. As the EPA writes, the most harm done by pesticides is in early-entry situations, a harm to which workers under 18 should not be exposed. In addition, the Network and AAP commend the increased restrictions on the definition of “agricultural emergency” that allows early-entry operations.

Treatment and Decontamination

The requirement that employers are to provide transportation to a medical facility within 30 minutes of learning of the exposure (pg. 15494, XV. Emergency Assistance) is inadequate. The requirement should be the same as the OSHA requirements that a worker injured on the job is to receive treatment within 4-5 minutes for life-threatening injury and within 15 minutes if it is not life-threatening (29 CFR 1926.50(a)). In addition, the requirement to provide pertinent information about the pesticide is crucial.

The Network and AAP believe that the requirement for a specific quantity of water (pg. 15492, XIV. Decontamination) in order to clarify necessity and means of decontamination is a positive step. Inadequate supply of water, and the incomplete decontamination of workers after handling pesticides, can lead to a high risk of take-home exposure and contamination of first responders, emergency department workers and hospital personnel.

In conclusion, the Network and AAP commend the Agency for its efforts to better protect those who handle and work with pesticides through these standards. We urge the Agency to strengthen this proposal in the areas we have indicated to better assure that all children will be adequately protected from potentially harmful direct or indirect pesticide exposures.

Thank you for the opportunity to comment. If you have questions or comments on these comments, please contact Carol Stroebel at the Children’s Environmental Health Network, 703-963-8374 or Ami Gadhia at the American Academy of Pediatrics at agadhia@aap.org or 202-347-8600.

Sincerely,

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