August 18, 2014

Administrator Gina McCarthy
Environmental Protection Agency
1200 Pennsylvania Avenue, NW
Washington, DC 20460

Re: Agricultural Worker Protection Standard Revisions; Proposed Rule

Docket ID: EPA-HQ-OPP-2011-0184

Thank you for the opportunity to comment on the United States Environmental Protection Agency's (EPA) proposed changes to the agricultural Worker Protection Standard (WPS).

Human Rights Watch has documented the dangerous conditions of work for child farmworkers in the US since 2000, through firsthand interviews with hundreds of children, their parents, experts on health, farm safety, and agriculture, and others, as well as through secondary research.[1] Most recently, we published a report on hazardous child labor in US tobacco farming, *Tobacco's Hidden Children*, based on interviews with 141 children, ages 7 to 17, who worked on tobacco farms in the United States in 2012 or 2013.[2] Through this research, we have repeatedly documented the exposure of child farmworkers to pesticides while working on US farms.

Human Rights Watch is pleased that EPA has proposed many important changes to the Worker Protection Standard that could serve to better protect the health and safety of child farmworkers and their families. However, we are concerned that the proposed rules fall short in several key areas.

---

[1] Human Rights Watch, *Fields of Peril: Child Labor in US Agriculture*, May 2010, http://www.hrw.org/reports/2010/05/05/fields-peril (accessed June 20, 2014); Human Rights Watch, *Fingers to the Bone*, June 2000, http://www.hrw.org/en/reports/2000/06/02/fingers-bone-0 (accessed June 20, 2014).

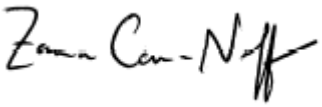
[2] Human Rights Watch, *Tobacco's Hidden Children: Hazardous Child Labor in United States Tobacco Farming*, May 2014, http://www.hrw.org/reports/2014/05/13/tobacco-s-hidden-children (accessed, June 20, 2014).

Below, we offer comments on the proposed changes to the WPS, focusing on the effects these changes will have on children, both children who work in the fields and the children of adult farmworkers. We frame our comments around empirical evidence of children's unique vulnerability to the adverse effects of pesticide exposure.

Human Rights Watch is grateful for the opportunity to comment on the changes to the agricultural Worker Protection Standard. EPA has proposed many important changes that could serve to better protect farmworkers from pesticide exposure, but we urge EPA to revise the WPS to take the additional steps detailed below in order to better protect the health and safety of child farmworkers and children in agricultural communities.

Thank you for your consideration.

Sincerely,



Joseph Amon
Director
Health and Human Rights Division

Zama Coursen-Neff
Director
Children's Rights Division

HUMAN RIGHTS WATCH

I. Background

Vulnerability of Children to Pesticide Exposure

Children are particularly vulnerable to the health consequences of pesticide exposure. Children are smaller than adults, and have a greater body surface area to body mass ratio, meaning they have more skin relative to their body size through which they absorb pesticides and other toxins.[3] Children have faster metabolic rates than adults, and consume more water and food, and breathe more air, pound for pound, than adults.[4] As a result, when pesticides are present in the environment, children may suffer greater exposure to these toxins.

Children, especially very young children, may also engage in behaviors that increase exposure to pesticides and other environmental toxins. Children often spend time playing on the ground or on the floor, where pesticides may be present,[5] and normal exploratory behaviors (e.g. hand-to-mouth or object-to-mouth activity) can transfer pesticides from floors, toys, and other surfaces into children's bodies.[6]

Children under the age of 18, including teenagers, remain in a critical stage of growth and development as their nervous systems and reproductive systems are maturing.[7] As a result, children may be more susceptible to the persistent, chronic effects of pesticide exposure. Long-term and chronic health effects associated with pesticide exposure include

---

3 Elaine A. Cohen Hubal, Linda S. Sheldon, Janet M. Burke,et al., "Children's Exposure Assessment: A Review of Factors Influencing Children's Exposure, and the Data Available to Characterize and Assess That Exposure," Environmental Health Perspectives, vol. 108, no. 6 (2000), p. 476.

4 Catherine Karr, "Children's Environmental Health in Agricultural Settings," Journal of Agromedicine, vol. 17, no. 2, (2012), p. 128.

5 Sara A. Quandt, Thomas A. Arcury, Pamela Rao, et al., "Agricultural and Residential Pesticides in Wipe Samples from Farmworker Family Residences in North Carolina and Virginia," Environmental Health Perspectives, vol. 112, no. 3 (2004), pp. 382–387.

6 See, e.g., N.C. Freeman, M. Jimenez, K.J. Reed, et al., "Quantitative Analysis of Children's Microactivity Patterns: The Minnesota Children's Pesticide Exposure Study," Journal of Exposure Analysis and Environmental Epidemiology, vol. 11, no. 6 (2001), pp. 501-509.

7 Elaine M. Faustman, Susan M. Silbernagel, Richard A. Fenske, et al.,"Mechanisms Underlying Children's Susceptibility to Environmental Toxicants," Environmental Health Perspectives, vol. 108, no. Suppl 1 (2000), pp. 13-21.

respiratory problems, cancer, depression, neurologic deficits, and reproductive health problems.[8] Studies have linked early childhood pesticide exposure, or exposure *in utero*, with lasting effects on neurodevelopment and behavior.[9] Many pesticides are highly toxic to the brain and reproductive health system,[10] both of which continue to grow and develop during the teen years.[11]

Research suggests children may also be more sensitive to pesticide exposure, causing them to suffer acute pesticide-related illness at lower thresholds than adults.[12] Acute health problems associated with pesticide exposure include nausea, dizziness, vomiting, headaches, abdominal pain, and skin and eye problems.[13] Children interviewed by Human Rights Watch in 2013 said they experienced a range of acute symptoms after coming into contact with pesticide spray including burning eyes, burning noses, itchy skin, nausea, vomiting, dizziness, shortness of breath, redness and swelling of their mouths, and headaches.[14]

---

[8] Linda A. McCauley, W. Kent Anger, Matthew Keifer, Rick Langley, Mark G. Robson, and Diane Rohlman. "Studying Health Outcomes in Farmworker Populations Exposed to Pesticides," Environmental Health Perspectives, vol. 114, no. 6 (2006), p. 953; K.L. Bassil, C. Vakil, M. Sanborn, et al., "Cancer Health Effects of Pesticides: Systematic Review" Canadian Family Physician, vol. 53 no. 10 (2007), pp. 1704-1711; F. Kamel, C. M. Tanner, D. M. Umbach, et al., "Pesticide Exposure and Self-reported Parkinson's Disease in the Agricultural Health Study," American Journal of Epidemiology, vol. 165 (2007), pp. 364–374.

[9] See, e.g., James R. Roberts, Catherine J. Karr, and Council on Environmental Health, "Pesticide Exposure in Children," Pediatrics, vol. 130, no. 6 (2012), p. e1765- e1788; Brenda Eskenazi, Lisa G. Rosas, Amy R. Marks et al., "Pesticide Toxicity and the Developing Brain," Basic & Clinical Pharmacology & Toxicology, vol. 102 (2008), pp 228–236; Maryse F. Bouchard, Jonathan Chevrier, Kim G. Harley, et al., "Prenatal Exposure to Organophosphate Pesticides and IQ in 7-Year-Old Children," Environmental Health Perspectives, vol. 119 (2011), pp. 1189-1195; Jose R. Suarez-Lopez, John H. Himes, David R. Jacobs Jr, Bruce H. Alexander and Megan R. Gunnar, "Acetylcholinesterase Activity and Neurodevelopment in Boys and Girls," Pediatrics, vol. 132, no. 6 (2013), pp. e1649-1658; Sarah Mackenzie Ross, I. C. McManus, Virginia Harrison, and Oliver Mason, "Neurobehavioral Problems Following Low-Level Exposure to Organophosphate Pesticides: A Systematic and Meta-Analytic Review," Critical Reviews in Toxicology, vol. 43, no. 1 (2013), pp. 21-44.

[10] James R. Roberts and J. Routt Reigart, "Chapter 21: Chronic Effects" in Recognition and Management of Pesticide Poisonings, 6th ed., ed. James R. Roberts and J. Routt Reigart (Washington, DC: Environmental Protection Agency, 2013, pp. 212-238, http://www2.epa.gov/pesticide-worker-safety/recognition-and-management-pesticide-poisonings (accessed July 10, 2014).

[11] Catherine Lebel and Christian Beaulieu, "Longitudinal Development of Human Brain Wiring Continues from Childhood into Adulthood," Journal of Neuroscience, vol. 31, no. 30 (2011), pp. 10937–10947; Medline Plus, "Adolescent Development," US National Library of Medicine, National Institutes of Health, updated January 27, 2013, http://www.nlm.nih.gov/medlineplus/ency/article/002003.htm (accessed July 10, 2014).

[12] James V. Bruckner, "Differences in Sensitivity of Children and Adults to Chemical Toxicity: The NAS Panel Report," Regulatory Toxicology and Pharmacology, vol. 31, (2000), pp. 280–285.

[13] Linda A. McCauley, W. Kent Anger, Matthew Keifer, Rick Langley, Mark G. Robson, and Diane Rohlman, "Studying Health Outcomes in Farmworker Populations Exposed to Pesticides," Environmental Health Perspectives, vol. 114, no. 6 (2006), p. 953.

[14] Human Rights Watch, Tobacco's Hidden Children: Hazardous Child Labor in United States Tobacco Farming, May 2014, pp. 45-52, http://www.hrw.org/reports/2014/05/13/tobacco-s-hidden-children (accessed, June 20, 2014).

The National Institute for Occupational Safety and Health (NIOSH) commented on the vulnerability of children to pesticide exposure in a 2002 report containing recommendations to the US Department of Labor for changes to federal child labor regulations. In the report, NIOSH stated, "There is age-related variation in susceptibility to pesticides, based on different metabolic rates and ability to activate, detoxify and excrete xenobiotic compounds, and both qualitative and quantitative differences in toxicity of pesticides between children and adults."[15]

Inadequate Protection for Child Farmworkers under US Law

Child farmworkers in the US may be especially susceptible to occupational pesticide exposure due to weak protections in child labor laws and regulations. As EPA notes on pages 15457-15458 of the proposed rules, the Fair Labor Standards Act (FLSA) allows child farmworkers to work longer hours, at younger ages, and in more hazardous conditions than all other working children.

Under the FLSA, there is no minimum age for a child to begin working on a small farm with parental permission.[16] At age 12, a child can work for any number of hours outside of school on a farm of any size with parental permission,[17] and at age 14, a child can work on any farm without parental permission.[18] In other sectors, in contrast, employment of children under age 14 is prohibited,[19] and children ages 14 and 15 may work only in certain jobs and for limited hours outside of school.[20]

Children working in US agriculture are also permitted to engage in tasks deemed "particularly hazardous" at age 16, while the minimum age for hazardous work in

---

[15] National Institute for Occupational Safety and Health (NIOSH), "National Institute for Occupational Safey and Health (NIOSH) Recommendations to the U.S. Department of Labor for Changes to Hazardous Orders," May 3, 2002, p. 95, http://www.cdc.gov/niosh/docs/NIOSHRecsDOLHaz/pdfs/DOL-recomm.pdf (accessed July 10. 2014).

[16] 29 U.S.C. sec. 213(c)(1)(A). A "small farm" is one which did not employ more than 500 man-days of agricultural labor (or about seven workers) during any calendar quarter of the preceding year.

[17] 29 U.S.C. sec. 213(c)(1)(B).

[18] 29 U.S.C. sec. 213(c)(1)(C).

[19] The FLSA allows for very limited exceptions to this, including work delivering newspapers, acting, and making evergreen wreaths.

[20] Children ages 14 and 15 can work in certain limited jobs, such as cashiers, stocking shelves, or washing cars, in retail or food service stores, and in gas stations but only for limited hours: up to 40 hours in a nonschool week; up to 18 hours in a school week; up to 8 hours on a nonschool day; and up to 3 hours on a school day.

nonagricultural occupations is 18.[21] The list of hazardous occupations currently prohibits child farmworkers from handling and applying only Category I and II pesticides. Children younger than 16 can handle and apply pesticides of lesser toxicity, and 16 and 17-year-olds can handle and apply any pesticides, regardless of the toxicity.

Existing child labor laws and regulations in the US, including the current WPS, fail to protect child farmworkers from the hazards of pesticide exposure. Through the rulemaking process, EPA has an opportunity to revise the WPS to ensure that child farmworkers are prohibited from engaging in tasks that pose the highest risk of pesticide exposure.

II. Comments on Proposed Changes to Agricultural Worker Protection Standard

Human Rights Watch supports many of the proposed changes to the WPS that enhance protections for farmworkers. However, in some cases the revisions are insufficient to protect child farmworkers from the hazards of occupational pesticide exposure. Our comments on the proposed changes to the WPS, detailed below, include additional steps we urge EPA to take to protect child farmworkers.

Training for Workers and Handlers (Unit VII.)

Annual Retraining Interval (Unit VII.A, pp. 15459-15461)

Human Rights Watch strongly supports EPA's proposal to require employers to provide handlers and workers with pesticide safety training each year, rather than once every five years as the current WPS protections require.

The vast majority of child farmworkers interviewed by Human Rights Watch in 2013 said their employers had not provided them with *any* education or training on pesticide safety. For example, Violet R., 19, started working on tobacco farms in eastern North Carolina at age 12. "They didn't tell us anything about the chemicals," she said. "We'd be working and the grower would spray the fields next to our field….They didn't move us away."[22] Natalie G., 18, who also started working on tobacco farms in North Carolina at age 12, and

[21] 29 U.S.C. sec. 213(c)(2).

[22] Human Rights Watch interview with Violet R., 19, Lenoir County, North Carolina, May 19, 2013.

continued working in the 2012 and 2013 summers, had a similar observation: "I never got any training or materials about pesticides."[23]

In rare cases, children interviewed by Human Rights Watch said their employers had told them that pesticides presented health risks, but most children did not know how to protect themselves from exposure while working. For example, Eli B., a 15-year-old farmworker in eastern North Carolina, said that the contractor who employed him told him about pesticides: "The contractor said, 'You have to be careful. The job is not easy. They spray pesticides, poison, it might make you dizzy or make you want to throw up.'" However, his employer did not specify any precautions Eli should take to minimize exposure to pesticides. Eli said, "No, [the contractor] just said, 'Be careful.' That's all."[24]

Inadequate safety training left child workers ill equipped to navigate dangerous situations. For example, Emilio R., 16, told Human Rights Watch that he reentered a tobacco field in North Carolina minutes after the grower had applied pesticides. "We were working in one field and finished half of the field and then the farmer decided to spray [pesticides using a tractor]," he said. "It [the drift] was about to catch up to us and so we stepped out of the field. We waited a few minutes and went back in."[25]

Regular pesticide safety training is particularly important for child workers for several reasons. First, as explained above, children under the age of 18 are highly vulnerable to both the immediate and long-term health consequences of pesticide exposure, making safety training especially important to protect them from the harms of pesticides.

Second, children are less socially mature than adults, and may be less savvy in navigating or removing themselves from unsafe work situations. A public health study on occupational pesticide-related illnesses among children suggested, "Young people are generally less experienced and assertive than adults, and thus they may not question assignments that place them at risk for pesticide exposure."[26] As a result, more regular

---

[23] Human Rights Watch interview with Natalie G., 18, Lenoir County, North Carolina, May 18, 2013.

[24] Ibid.

[25] Human Rights Watch interview with Emilio R., 16, Lenoir County, North Carolina, May 18, 2013.

[26] Geoffrey M. Calvert et al., "Acute Pesticide-Related Illnesses Among Working Youths, 1988–1999," American Journal of Public Health, vol. 93, no. 4 (April 2003), p. 608.

training could help to ensure that child workers know their rights and know how to protect themselves at work.

Third, child agricultural workers may be less likely than adult workers to receive pesticide safety training under the current five year retraining interval in the WPS. Most child agricultural workers we interviewed are seasonal workers, working primarily or exclusively after school and during the summer months. Many of them are employed by farm labor contractors or subcontractors or employed off the books altogether, and their often informal employment arrangements may cause them to be overlooked or excluded from the training that is mandated under the current WPS.

Establishing an annual retraining interval would ensure that child workers receive important health and safety information more frequently, and help child workers take precautions to protect themselves on the job.

Recordkeeping Requirements (Unit VII.B, pp. 15461-15463)

Human Rights Watch supports the proposal to require employers to keep records of worker and handler training for two years, and provide copies of training verification to employees. Required documentation could increase employers' accountability for providing workers with required safety training. Recordkeeping could also enable better enforcement of training requirements by state agencies and inspectors.

Content of Worker and Handler Pesticide Safety Training (Unit VII.E, pp. 15466-15470)

Human Rights Watch supports the expanded content of the required training for workers and handlers, particularly the requirement to include information on "take-home" exposure. Public health research indicates that children living in farming communities are exposed to pesticides brought home on the bodies, clothes, and shoes of farmworkers.[27] Child farmworkers we interviewed often described alternating between working in agriculture and helping to care for their younger siblings at home, suggesting that education and training on reducing take-home exposure could help to protect non-working children in their families and communities from pesticide exposure.

---

[27] Thomas A. Arcury and Sara A. Quandt, "Pesticide Exposure Among Farmworkers and Their Families," *Latino Farmworkers in the Eastern United States: Health, Safety, and Justice*, Thomas A. Arcury and Sara A. Quandt, eds. (New York: Spring, 2009), pp. 108-109.

We also support the expansion of worker training to include additional information on the hazards of pesticide exposure to children and pregnant women, early entry notification requirements, reporting of violations, and protection from employer retaliation. In our research, we have found that child farmworkers are often unaware of their rights and protections under the WPS. We have also found that workers do not always express their concerns with assignments that place them at risk due to fear of retaliation from employers. For example, in 2009, a former child farmworker in North Carolina who now educates workers about pesticides told Human Rights Watch that she had personally seen tobacco workers being sprayed with pesticides: "People don't leave. . . . People say, 'We can leave but we don't want to because we're afraid the *patron* [boss] will fire us.' They stay there because they're afraid of their *patron*."[28]

Human Rights Watch supports the expansion of handler training to include information on proper removal of PPE, and training regarding: 1) the requirement for handlers to cease application if persons are in the treated area or entry restricted area; 2) the requirement that employers must ensure handlers have received respirator fit-testing, training, and medical evaluation if required to wear a respirator; and 3) the minimum age requirement for handlers. These measures will help to ensure that handlers, workers, and non-workers are properly trained to avoid pesticide exposure.

Notifications to Workers and Handlers (Unit VIII.)

Posted Notification Timing & Oral Notification (Unit VIII.A, pp. 15472-15474)

Human Rights Watch supports mandatory posting of field warning signs where a pesticide has a restricted-entry interval (REI) greater than 24 hours, rather than the proposed mandatory posting requirement only for pesticides with REIs of greater than 48 hours. We understand EPA considered proposing a requirement for employers to post warning signs for pesticides with REIs of greater than 24 hours, and we agree with the arguments raised in support of this alternative proposal.

As EPA notes, workers may not remember the details of pesticide application where REIs span more than one day; that is, oral warnings alone given two days earlier (permissible

[28] Human Rights Watch interview with Julia N., age 18, Benson, North Carolina, August 5, 2009.

with a 48-hour REI), are more likely to be forgotten or not relayed to all workers, than those given a day before. Oral warnings are difficult to verify, and employers may not be able to provide oral warnings to all workers in a language and manner that are readily understood by workers, especially young workers. As discussed above, child farmworkers we interviewed were often hired by farm labor contractors or subcontractors, or worked informally along with family members, making it less likely that the mandated oral notifications regarding pesticide-treated areas would reach them.

Many child farmworkers interviewed by Human Rights Watch in 2013 reported that they were not warned to keep out of areas that had been recently treated with pesticides. For example, Lucia A., 17, a seasonal farmworker in eastern North Carolina, told Human Rights Watch that she got a rash after being taken to work in a tobacco field that had been treated with pesticides:

One time I got a lot of splotches on my leg. … I was around 15. It was bad. It got red. … It was like a rash. It started itching. I kept telling my mom. She kept telling [the contractor] maybe we shouldn't work in this field. And he said, "No, it's ok, it isn't supposed to harm us." And then I saw other workers start walking out, saying "I can't work like this." … I showed [the contractor the rash on] my legs, and then he said, "Let's move to a different field."[29]

Andrew N., a 10th grade student in Tennessee who works with a crew of tobacco workers led by his stepfather, told Human Rights Watch that he was taken to work in a field that had been sprayed very recently with pesticides. "I went back into a field after they sprayed it, like *right* after they sprayed it. I didn't know…I did notice it because the spray was all over the plant, the yellow stuff was all over it, and my shirt was getting all the yellow liquid on it. We didn't want to work anymore. And finally the boss guy came, and he told us he had sprayed down, so we left. The smell was pretty strong. I really wouldn't know how to explain it, but it was a strong smell."[30]

We understand that required posting for all pesticides with REIs greater than 24 hours would place an additional burden on agricultural employers, but we believe it is the best

[29] Human Rights Watch interview with Lucia A., 17, Lenoir County, North Carolina, May 18, 2013.

[30] Human Rights Watch interview with Andrew N., 16, Macon County, Tennessee, October 22, 2013.

option for protecting workers from pesticide exposure. Given the strong protective effect of a 24-hour posting requirement in Monterey County, California, Human Rights Watch urges EPA to adopt the same requirement nationwide to protect farmworkers from pesticide exposure. Posted warning signs could help limit reentry by workers into pesticide-treated areas prior to the end of the REI, which, as EPA notes, is a leading cause of occupational pesticide poisoning.

Hazard Communication (Unit IX)

Pesticide-Specific Hazard Communication (Unit IX.A-C, pp. 15476-15481)

Human Rights Watch strongly urges EPA not to eliminate the current requirement that employers post pesticide application-specific information at a central location. The proposed change to require employers to maintain pesticide-specific hazard information, and make that information available to workers and handlers, places the burden on workers and their advocates to request vital information about the hazards of chemicals farmworkers could be exposed to at work.

Farmworkers and their advocates should have unfettered access to essential information about the pesticides they may encounter at work, as well as how to access emergency medical assistance. Farmworker advocacy groups have repeatedly documented the reluctance among farmworkers to seek information or express concerns on workplace hazards or abuses due to fear of retaliation by employers.[31] In addition, workers may not know that they have the right to request this information. Workers should have ready access to basic information that could protect their occupational health and safety, and central posting gives workers daily reminders to take steps to protect themselves at work.

While Human Rights Watch is encouraged to see that EPA proposed to make pesticide labeling and safety data sheets (SDS) available to workers and handlers, this information should be provided in both English and Spanish. Information from the National Agricultural Worker Survey indicated 76 percent of crop workers are Latino,[32] indicating

---

[31] See, e.g., Oxfam America and Farm Labor Organizing Committee (FLOC), "A State of Fear: Human Rights Abuses in North Carolina's Tobacco Industry," 2011, http://www.oxfamamerica.org/explore/research-publications/a-state-of-fear-human-rights-abuses-in-north-carolinas-tobacco-industry/ (accessed July 11, 2014); Farmworker Justice, "Workplace Hazards," 2014, http://www.farmworkerjustice.org/content/workplace-hazards (accessed July 11, 2014).

[32] Email from Egan Reich, US Department of Labor, to Human Rights Watch, May 6, 2014. Citing 2008-2009 data from "The National Agricultural Workers Survey: Public Access Data," http://www.doleta.gov/agworker/naws.cfm (accessed May 6, 2014).

Spanish could be a primary language for many of them. Bilingual pesticide safety data sheets, in addition to crop sheets with basic crop-specific pesticide information in a format designed for low-literacy populations, could increase worker understanding and awareness of the hazards posed by pesticides applied in fields where they work. Interventions utilizing health education materials designed for low-literacy audiences have been found to increase knowledge and change pesticide safety behaviors among farmworker families.[33]

Furthermore, farmworkers should be afforded the same protections under the WPS that other workers are afforded under the Occupational Safety and Health Administration's (OSHA) Hazard Communication Standard (HCS). The proposed changes to the WPS would not require employers to provide workers with training on specific chemicals and their health effects, such as symptoms associated with exposure. Such information could be essential in helping healthcare workers respond appropriately to pesticide-related illnesses or emergencies. Human Rights Watch urges EPA to adopt a requirement analogous to OSHA's Hazard Communication Standard to fully protect the health of workers.

Retention of Records (Unit IX.D, pp. 15481-15482)

Human Rights Watch supports the proposed change to require employers to keep records of pesticide application. However, the current proposal to require recordkeeping for a period of only two years is insufficient. Pesticide application records should be retained for 30 years to allow workers, advocates, enforcement agencies, and others to access important information relevant to worker safety and health. OSHA regulations require employers to maintain employee exposure and medical records for 30 years, stating that access to this information "is necessary to yield both direct and indirect improvements in the detection, treatment, and prevention of occupational disease."[34] Given the potential long-term and chronic health effects of pesticide exposure, retention of pesticide use

---

33 Sara A. Quandt, Joseph G. Grzywacz, Jennifer W. Talton, et al., "Evaluating the Effectiveness of a Lay Health Promoter-Led, Community-Based Participatory Pesticide Safety Intervention With Farmworker Families," Health Promotion Practice, vol. 14, no. 3 (2013), pp. 425-432; Thomas A. Arcury, Antonio Marín, Beverly M. Snively, Mercedes Hernández-Pelletier, and Sara A. Quandt, "Reducing Farmworker Residential Pesticide Exposure: Evaluation of a Lay Health Advisor Intervention," Health Promotion Practice, vol. 10, no. 3 (2009), pp. 447-455; Joseph G. Grzywacz, Thomas A. Arcury, Jennifer W. Talton, et al., "'Causes' Of Pesticide Safety Behavior Change in Latino Farmworker Families," American Journal of Health Behavior, vol. 37, no. 4 (2013), pp. 449-457.

34 29 C.F.R sec. 1910.1020

records is especially important to provide workers and their representatives with access to information that could assist with diagnosis and treatment of pesticide-related illnesses.

Handler Restrictions and Restrictions for Worker Entry into Treated Areas (Units XI & XII)

Drift Protections (Unit XI.A, p. 15483 & Unit XII.E, pp. 15489-15490)

Human Rights Watch strongly supports the drift protections in the proposed changes to the WPS, including the requirement for handlers and applicators to cease application of pesticides immediately if any worker or other person enters a treated or restricted entry area, and the establishment of entry restricted areas (or buffer zones) adjacent to treated areas during pesticide applications.

About half of the child tobacco workers interviewed by Human Rights Watch in 2013 reported that they saw tractors spraying pesticides in the fields in which they were working or in fields adjacent to the ones in which they were working.[35] These children often reported being able to smell or feel the chemical spray as it drifted towards them.

For example, Jocelyn R., 17, started working on tobacco farms in eastern North Carolina at 14, along with her younger brother. Describing an incident that occurred during the summer of 2012, she told Human Rights Watch:

> Once they sprayed where we were working. We were cutting the flower and the spray was right next to us in the part of the fields we had just finished working in. I couldn't breathe. I started sneezing a lot. The chemicals would come over to us. The farmer when he was spraying would get ahead of us and it would come back over us. No one ever told us about the chemicals.[36]

Cameron M., an 18-year-old worker in Kentucky, described seeing a tractor spraying in the tobacco field in which he was working: "One time I saw a tractor spraying chemicals on the

[35] Sixty-three out of 120 children interviewed by Human Rights Watch reported seeing tractors spray pesticides in fields in which they were working or in nearby fields; 21 children interviewed by Human Rights Watch in 2013 were not asked about exposure to pesticides.

[36] Human Rights Watch interview with Jocelyn R., 17, Lenoir County, North Carolina, May 18, 2013.

field. It made the workers upset. There was a strong smell. We all covered our mouths and noses."[37]

The health consequences of pesticide exposure through drift are documented in the public health literature,[38] and buffer zones have been shown to reduce pesticide exposure from drift. One study measured pesticide residues from drift in areas surrounding pesticide-spraying zones and found that these residues decreased steadily with increased distance from the field.[39]

The proposed drift protections in the WPS could limit both occupational and non-occupational pesticide exposure and pesticide-related illness.

Minimum Age Requirements (Units XI.B & XII.A pp. 15483-15485)

Human Rights Watch strongly supports the establishment of a minimum age of 18 for all pesticides handlers and early entry workers. While the adoption of any minimum age is an improvement over the current Worker Protection Standard, the proposed minimum age of 16 would leave 16 and 17-year-old children vulnerable to pesticide exposure during a critical stage in their growth and development.

Five children interviewed by Human Rights Watch in 2013 said that they applied pesticides to tobacco plants with a handheld sprayer and backpack, or operated tractors that were spraying pesticides on tobacco fields. Sixteen-year-old Theo D., for example, described how he felt one day in the summer of 2013 after using a backpack sprayer to apply an insecticide to tobacco fields on a Virginia farm where he worked: "I got home and felt dizzy and started puking, but I took a cold shower and got over it.[40]

Pesticide handlers and early entry workers are at high risk of pesticide exposure, and pesticide exposure can have long-term health consequences, particularly when children are exposed while their bodies and brains are immature and developing. As discussed

---

[37] Human Rights Watch interview with Cameron M., 18, Monroe County, Kentucky, September 2, 2013.

[38] See, e.g., Soo-Jeong Lee, Louise Mehler, John Beckman, et al., "Acute Pesticide Illnesses Associated with Off-Target Pesticide Drift from Agricultural Applications: 11 States, 1998–2006," Environmental Health Perspectives, vol. 119, no. 8 (2011), pp. 1162-1169.

[39] S.C.K. Carlsena, N.H. Spliida, and B. Svensmarkb, "Drift of 10 Herbicides after Tractor Spray Application," Chemosphere, vol. 64, no. 5(2006) pp. 778-786.

[40] Human Rights Watch interview with Theo D., 16, Scott County, Virginia, October 25, 2013.

above, child farmworkers, even 16 and 17-year-old children, remain in an important stage of growth and development.

Child workers may also lack the maturity to follow all pesticide applications instructions and take the necessary safety precautions. Research has shown that teens feel less vulnerable to harm, and do not take the same safety precautions as adults, even when they have received the same training.[41]

For example, Alberto H., 16, told Human Rights Watch that he drove an all-terrain vehicle with a sprayer attached to the back through tobacco fields in Kentucky while working in 2013. Even though he was given appropriate protective clothing including gloves, plastic safety glasses, and a mask, his safety training was minimal, and he appeared not to remember clearly the instructions. He said, "They just told me not to get it on me, be careful with it. Always spray… I think they said, against the wind? Like toward where the wind was blowing. Yeah, where the wind was blowing."[42] Alberto's confusion over the instructions he received indicates he may not have been adequately prepared to protect his health and safety while applying pesticides on the farm where he worked.

In many climates, proper use of the personal protective equipment that would be necessary to protect child farmworkers from pesticide exposure during application or early entry work, such as chemical-resistant suits, would increase their risk of heat illness, a leading cause of mortality. The Centers for Disease Control and Prevention (CDC) reported that the rate of heat-related deaths among crop workers between 1992 and 2006 was nearly 20 times that of all US civilian workers.[43] Children are even more susceptible to heat illness than adults.[44] Child farmworkers interviewed by Human Rights Watch have consistently reported working in extreme, unrelenting heat, often without access to shade.

---

41 Mary K. Salazar, Marie Napolitano, Jennifer A. Scherer and Linda A. McCauley, "Hispanic Adolescent Farmworkers' Perceptions Associated with Pesticide Exposure," Western Journal of Nursing Research, vol. 26, no. 2 (2004), pp. 146-166; Laurence Steinberg,"Cognitive and Affective Development in Adolescents," Trends in Cognitive Sciences, vol. 9, no. 2 (2005), pp. 69-74.

42 Human Rights Watch interview with Alberto H., 16, Doug S., 17, and Damian W., 17, Wayne County, Kentucky, September 3, 2013.

43 Centers for Disease Control and Prevention (CDC), "Heat-Related Deaths among Crop Workers---United States, 1992-2006," *Morbidity and Mortality Weekly Report,* vol. 57, no. 24, pp 649-653.

44 Human Rights Watch telephone interview with Dr. Thomas Arcury, director of the Center for Worker Health at Wake Forest School of Medicine, February 24, 2014. See also, Jeffrey R. Bytomski and Deborah L. Squire, "Heat Illness in Children," Current Sports Medicine Reports, vol. 2, no. 6 (2007), p. 320 (noting that children are more susceptible than adults to heat illness because of "greater surface area to body mass ratio, lower rate of sweating, and slower rate of acclimatization").

For example, Andrea D., a 16-year-old seasonal worker, told Human Rights Watch about her experience working on a tobacco farm in Kentucky during the summer months: "When the sun is really beating hot, really hot, I would get like dizzy. I had to stop a minute. Especially when we're taking out the weeds because that's in the middle of June, and it's hot. I never passed out, but I felt dizzy."[45]

Pesticide poisoning surveillance data indicate that 62 percent of acute occupational pesticide-related illnesses reported by children occurred among children working in agriculture.[46] According to public health studies, this number represents only a small fraction of actual pesticide poisonings as many cases are never reported.[47]
Prohibiting children under 18 from handling and applying pesticides or performing early entry work could reduce pesticide-related illnesses among working children.

International Legal Standards

Under International Labor Organization Convention No. 182 Concerning the Prohibition and Immediate Elimination of the Worst Forms of Child Labor (Worst Forms of Child Labor Convention), which the United States ratified in 1999, the US is legally obligated to prohibit the employment of children under the age of 18 in "work which, by its nature or the circumstances in which it is carried out, is likely to harm the health, safety or morals of children."[48] The Worst Forms of Child Labor Convention also obligates the US to take immediate and effective steps to ascertain what forms and conditions of child labor in agriculture violate the convention and then eliminate them.[49] The Worst Forms of Child Labor Recommendation provides guidance to countries on determining what types of work constitute harmful or hazardous work, stating that consideration should be given to "work in an unhealthy environment which may, for example, expose children to hazardous substances, agents or processes."[50]

---

45 Human Rights Watch interview with Andrea D., 16, Shelby County, Kentucky, August 7, 2013.

46 Calvert et al., "Acute Pesticide-Related Illnesses Among Working Youths, 1988–1999," American Journal of Public Health, p. 609.

47 Ibid.

48 International Labor Organization, Convention Concerning the Prohibition and Immediate Action for the Elimination of the Worst Forms of Child Labor ("Worst Forms of Child Labor Convention"), adopted June 17, 1999, 38 ILM 1207 (entered into force November 19, 2000), ratified by the United States on December 2, 1999, art. 3.

49 Worst Forms of Child Labor Convention, arts. 1, 4, 6, and 7.

50 Ibid., para. 3.

Many states party to the Worst Forms of Child Labor Convention have prohibited all children under age 18 from working with harmful chemicals, particularly those that are considered toxic or carcinogenic. In addition, the following countries specifically prohibit children under age 18 from handling pesticides: Brazil, Cambodia, Cote d'Ivoire, Cyprus, Dominican Republic, Egypt, Greece, India, Kuwait, Mongolia, Panama, Senegal, Sri Lanka, Tunisia, and Vietnam.[51]

EPA's Authority to Adopt More Protective Standards

EPA notes that the Fair Labor Standards Act (FLSA) permits children in agriculture to do occupations deemed "particularly hazardous" at the age of 16, while in every other industry, 16 and 17-year-olds are not allowed to work in hazardous occupations.[52] For example, children under 18 are prohibited from work in mining, forest fire fighting and fire prevention, forestry, logging and saw mill operations, meat and poultry packing, and brick and tile manufacturing.[53] Human Rights Watch has repeatedly called on the US Congress to address the double standard in US labor law to provide child farmworkers with the same protections as all other working children.[54]

However, under US law, EPA has the authority adopt a more protective standard for child farmworkers engaged in the handling of pesticides. The Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) allows EPA to regulate the use of pesticides to avoid "any unreasonable risk" to workers, broadly defined.[55] Under FIFRA, EPA has a mandate to protect children from the "unreasonable risk" posed by handling pesticides or engaging in early entry work.

Human Rights Watch acknowledges that under regulations issued by the US Department of Labor, children under the age of 16 are already prohibited from handling the most toxic classes of pesticides (those of category I or II toxicity). However, the FLSA does not

---

51 Information provided to Human Rights Watch from the International Labor Organization.

52 "Youth & Labor: Hazardous Jobs" United States Department of Labor. http://www.dol.gov/dol/topic/youthlabor/hazardousjobs.htm (accessed March 17, 2014)

53 A full list of hazardous non-agricultural jobs prohibited for children under age 18 can be found on the US Department of Labor's website: http://www.dol.gov/elaws/esa/flsa/docs/haznonag.asp (accessed March 25, 2014.

54 Human Rights Watch, Fields of Peril: Child Labor in US Agriculture, May 2010, http://www.hrw.org/reports/2010/05/05/fields-peril (accessed June 20, 2014); Human Rights Watch, Fingers to the Bone, June 2000, http://www.hrw.org/en/reports/2000/06/02/fingers-bone-0 (accessed June 20, 2014).

55 7 U.S.C. § 136(bb).

preempt more protective standards in other federal or state laws or regulations, and the law states, "the higher standard shall be applicable" in cases where more than one standard applies to a single activity.[56] As a result, EPA is in a unique position to protect all children under 18 from engaging in the tasks that carry the highest risk of pesticide exposure, including the handling and application of pesticides, and early entry work in pesticide-treated areas.

Cost-Benefit Analysis

EPA cites a considerable cost associated with establishing a minimum age of 18. However, the cost of establishing a minimum age of 18 must be analyzed in the context of the potential long-term costs of medical care and lost productivity due to pesticide exposure. Public health research has explored the long-term neurological and developmental implications of pesticide exposure among children under 18. The economic costs associated with the human health effects of pesticide poisonings and related illnesses are considerable, and were estimated in 1997 to equal $1 billion per year in the United States.[57] Because individuals exposed as children have a longer expected lifespan than adult farmworkers, their accumulated life-time health costs are likely higher than average. The benefits of prohibiting children under 18 from handling and applying pesticides and performing early entry work far outweigh any costs associated with the policy change.

Requirements for Entry during an REI (Unit XII.B, pp. 15485-15487)

We support EPA's proposal to require employers to inform early entry workers about the pesticide applied to the area in which they will be working, the specific tasks to be performed, and the amount of time the worker is allowed to remain in the treated area, in addition to pesticide hazard information from the labeling. We also support the proposed requirement that employers collect written acknowledgment from each worker indicating receipt of this notification and retain these records. As EPA notes, surveillance data demonstrate that early entry work is a leading factor contributing to incidents of pesticide poisoning, and the proposed changes will ensure early entry workers are adequately informed about the risks of the work they are asked to do.

---

[56] 29 C.F.R. § 570.50.

[57] David Pimentel, "Environmental and Economic Costs of the Application of Pesticides Primarily in the United States," Environment, Development, and Sustainability, vol. 7 (2005), pp. 230-232.

Exception to the General Prohibition against Sending Workers into a Treated Area under an REI (Unit XII.D, pp. 15487-15489)

Human Rights Watch opposes the proposed changes to exceptions for early reentry into pesticide-treated areas when restricted entry intervals remain in effect. Early reentry for fieldwork should be reserved only for true agricultural emergencies, and the proposal to ease early reentry restrictions for irrigation (allowing for early entry beyond unforeseen circumstances), and codify exceptions for "limited contact," are steps in the wrong direction. While studies show that personal protective equipment (PPE) is effective at reducing pesticide exposure,[58] in many areas the climate and circumstances of agricultural work make proper use of PPE impractical or even dangerous. Proper PPE may be cumbersome and increase the risk of heat illness. For example, if farmworkers wearing proper PPE reenter a pesticide-treated field in North Carolina in the height of summer, they may be at high risk of heat illness, a leading cause of farmworker mortality.[59] Improper use or removal of PPE during early entry work greatly increases the risk of pesticide exposure among workers.

While we recognize that EPA proposed to prohibit early entry under the limited contact and irrigation exceptions into areas treated with a pesticide requiring double notification, we urge EPA to limit exceptions to early entry work for all pesticide-treated areas, even those with chemicals of lesser toxicity. Human Rights Watch urges EPA not to codify the exception for "limited contact," and not to relax restrictions for irrigators. Given the high risks of pesticide exposure, early entry work should be reserved exclusively for true agricultural emergencies.

Display of Basic Pesticide Safety Information (Unit XIII.A-B, pp. 15490-15492)

Human Rights Watch supports EPA's proposals to require posting of pesticide safety information at decontamination sites, and to expand the content of the basic pesticide information display to include emergency medical information, and contact information for state or tribal regulatory agencies. These are common sense measures that will help to ensure that workers have easy access to important information at strategic locations in their workplaces.

---

58 Matthew C. Keifer, "Effectiveness of Interventions in Reducing Pesticide Overexposure and Poisonings," American Journal of Preventive Medicine, vol. 18, no. 4 (2000), pp. 80-89.

59 CDC, "Heat-Related Deaths among Crop Workers---United States, 1992-2006," Morbidity and Mortality Weekly Report, vol. 57, no. 24, pp 649-653.

Decontamination (Unit XIV, pp. 15492-15494 & Unit XII.C, p. 15487)

Human Rights Watch strongly supports EPA's proposed decontamination requirements for workers and handlers, including the proposal to quantify the specific amount of water required for decontamination (1 gallon of water per worker for routine decontamination, 3 gallons of water per handler for routine washing and emergency decontamination, and 3 gallons of water per worker for early entry worker decontamination). Clarifying the quantities of water required for contamination is important to ensure that workers and handlers can engage in thorough washing to protect their health and safety.

Emergency Assistance (Unit XV, pp. 15494-15496)

Human Rights Watch commends EPA for proposing to change the WPS to require employers to transport workers to a medical facility after pesticide exposure. The proposed changes will shift responsibility from workers (who may be reluctant to request transportation to a medical facility due to fear of retaliation) to employers. However, the proposal to require employers to transport workers within 30 minutes of learning of exposure is insufficient. In a medical emergency, 30 minutes is too long to wait for medical attention. Employers should be required to transport workers to a medical facility *immediately* upon learning of exposure, as California regulations require.[60]

In addition, Human Rights Watch supports the proposal to require employers to provide workers, handlers, and medical professionals with pesticide Safety Data Sheets and pesticide labels to assist with prompt and effective medical treatment. Requiring employers to provide essential pesticide safety information is particularly important, because workers may not think to request this information in emergency situations, or may not know they have the right to such information. For example, Eli B., 15, told Human Rights Watch that his mother was hospitalized after being exposed to pesticides while working on a tobacco farm in North Carolina:

Last year, my mom, she got really sick one time in tobacco because they sprayed that pesticide. She got really dizzy and had to go to the hospital. … I wasn't there that day. I was in school. She got home around like 6:30 in the evening. And I noticed she didn't feel good. She was real pale. I was like, "Are you ok?" She started to throw up.[61]

---

[60] California Code of Regulations, ch. 3, sec. 6726.

[61] Human Rights Watch interview with Eli B., 15, Greene County, North Carolina, May 18, 2013.

Eli was the only person available to stay with his mother at the hospital, and he did not have any information about what she had been exposed to while working.

The proposed changes to the WPS will help ensure that employers promptly and proactively secure necessary medical treatment for workers suffering pesticide-related health emergencies.

Personal Protective Equipment (Unit XVI, pp. 15496-15500)

Human Rights Watch supports EPA's proposal to render contaminated PPE unusable, rather than requiring only cleaning and proper disposal as the current WPS requires. The proposed change could help to ensure that workers do not reuse contaminated PPE that could expose them or their families to pesticides.

Human Rights Watch strongly supports EPA's proposal to require employers to comply with OSHA standards for respirators, including fit testing, training, and medical evaluation. However, EPA should take the additional steps. First, EPA should adopt OSHA's standard of requiring each employer to adopt a worksite-specific respiratory protection program to specify how respirators are selected, cleaned, stored, repaired, and replaced. Second, EPA should require OSHA standards for fit testing, training, and medical evaluation to dust and mist filtering masks. Employers should be required to comply with the same OSHA standards for dust and mist filtering respirators as they do for all other respirators, to ensure workers receive maximum protection.

Monitoring Handler Exposure to Cholinesterase-Inhibiting Pesticides (Unit XVII, pp. 15500-15502)

Human Rights Watch urges EPA to require medical monitoring of pesticide handlers working with Category I or II organophosphates or N-methyl carbamates. As EPA notes, medical monitoring programs for pesticide handlers have been successfully implemented in California and Washington, and these programs have helped health professionals understand the effects of these classes of pesticides and prevent poisoning by identifying overexposure among handlers.

EPA states that the monitoring program would be, "reactive, catching incidents after they occur rather than working to stop them from happening." Human Rights Watch disagrees with this argument, as medical monitoring and the preventive measures in the proposed changes to the WPS are not mutually exclusive. Careful and comprehensive health monitoring of pesticide handlers can both prevent poisoning by identifying overexposures and inform preventative measures handlers can take in the future to protect themselves and their families. The data gathered through medical monitoring could help EPA better understand the effects organophosphates and N-methyl carbamates have on human health *under genuine working conditions.* This information could inform evidence-based public health policy to better protect workers in the future.

Exemptions and Exceptions (Unit XVIII)

Family Exemption (Unit XVIII.A pp. 15502- 15503)

Human Rights Watch urges EPA to revise the family exemption so that children under the age of 18 employed on a farm owned by an immediate family member are protected by the WPS. The family farm exemption in the current WPS leaves child agricultural workers employed on their own family's farms without the fundamental protections afforded to other workers. While parents and immediate family members strive to protect children from danger, national agricultural injury data indicate many children suffer injuries on household farms. The National Institute for Occupational Safety and Health estimated that there were 6,615 injuries to both working and non-working "household youth" on US farms in 2012.[62] Children working on family farms should be prohibited from doing tasks that could expose them to pesticides.

Training Grace Period (Unit XVIII.C pp. 15504-15507)

Human Rights Watch strongly urges EPA to eliminate the training grace period. Workers should never enter pesticide-treated areas without having received full pesticide safety training, especially child workers. In our research on child labor in US agriculture, Human Rights Watch has found that children are often employed in agriculture by farm labor contractors or subcontractors, and may only work on any given farm for a day, or a few days, at a time. Even with the proposed shortened two-day grace period, child farmworkers could enter pesticide-treated fields and be exposed to pesticides without having received

[62] Email from Kitty Hendricks, Research Health Scientist, Division of Safety Research, NIOSH, to Human Rights Watch (citing 2012 data), December 31, 2013.

full training on the hazards of pesticide exposure, how to recognize pesticide poisoning, and how to protect themselves while working.

In addition, eliminating the training grace period for farmworkers entering pesticide-treated areas would be consistent with OSHA standards that protect workers in other sectors. OSHA standards require employers to provide information to workers on toxic substances or hazards they may encounter *before* they are permitted to enter the area to begin working. Farmworkers deserve the same protections afforded to workers in other industries, and EPA should eliminate the grace period to ensure that workers are not permitted to enter pesticide-treated areas without full and complete training.