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# Historical Background of the Child Labor Regulations: Strengths and Limitations of the Agricultural Hazardous Occupations Orders

Mary E. Miller, RN, MN

**ABSTRACT.** The purpose of this paper is to review the background of key legislative and regulatory milestones of the initial laws and federal child labor provisions limiting hazardous work by children in agriculture up to the more recent developments contributing to the proposed updates to the agricultural hazardous occupations orders. A summary of the key changes are described and the significant differences between agricultural and nonagricultural regulations are highlighted. Recommendations for future policy are provided.

**KEYWORDS.** Agriculture, child labor, regulations

*It has been said that progress can be measured by the extent to which children's rights are safeguarded.<sup>1</sup>*

## INTRODUCTION

Serious and fatal injuries among children working in agriculture have led to growing concern among many, including government officials, child labor and young worker advocates, and injury prevention and occupational health and safety experts, that the US agricultural child labor laws are too permissive and lack sufficient protections. Agriculture has consistently ranked as one of the most hazardous industries for adults and children alike, and yet it is the least

regulated with regard to child labor and other worker protections. The National Safety Council identified agriculture as the most dangerous industry in the United States. Its fatality rate of 25.4 per 100,000 full-time equivalents (FTEs) is more than twice the rate for mining, the industry with the second-highest fatality rate in 2009.<sup>2</sup> Agriculture also contributes to a high proportion of fatal injuries among youth. During the period 1998–2002, 41% of fatal injuries among youth under age 17 occurred in agriculture.<sup>3</sup> The agriculture industry has the second highest fatality rate among young workers (aged 15 to 24) at 21.3 per 100,000 FTEs compared to 3.6 per 100,000 across all industries.<sup>4</sup> For those under age 16, agriculture production accounted for almost 60% of deaths in this age group.<sup>5</sup>

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*Disclaimer:* The findings and conclusions in this paper are those of the author and do not represent the views of the Washington State Department of Labor and Industries.

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In addition to concerns raised in the United States about the protections for youth working in agriculture, these regulations are not consistent with the requirements of International Labor Organization (ILO) Convention 182, which calls for urgent action to abolish the worst forms of child labor, including work activities currently permitted for youth working in agriculture.<sup>6</sup> The United States ratified this Convention in 1999, and thus far, 174 of 183 ILO United Nations country members have signed this convention.<sup>7</sup>

Children working in agriculture include those living and working on their family's farm, those working on family-owned or large corporate farms in the communities where they live, and young migrant workers either working with their parents or other family members, or teens traveling for work on their own unaccompanied by an adult guardian. The full extent of the numbers of youth in any one of these groups is not easily determined due to limitations of current data collection systems.

United States Secretary of Labor, Hilda Solis, highlights the needs of both working youth and agricultural workers in the Strategic Plan for the US Department of Labor (USDOL) 2011–2016. The plan states as a key goal to ensure workplaces are safe and healthy and that there will be an emphasis on high-risk industries.<sup>8</sup> This goal intersects the missions and activities of the Occupational Safety and Health Administration (OSHA), as well as the Wage and Hour Division (WHD). The Plan calls for the WHD to “ensure basic safety and health protections for young workers and farm workers.” OSHA and WHD are charged with enforcement programs that are geared toward protecting these most vulnerable worker populations with special emphasis on working conditions for young seasonal farmworkers. In addition, the Strategic Plan states that “WHD regulatory child labor initiatives are intended to ensure that up-to-date data are used to ensure that workplace restrictions are consistent with the dangers of a 21st century workplace.”<sup>8</sup>

In his 2011 State of the Union address, President Barack Obama specifically stated that his administration would not reduce protections for the health and safety of the community, such as child labor laws:

“To reduce barriers to growth and investment, I’ve ordered a review of government regulations. When we find rules that put an unnecessary burden on businesses, we will fix them. But I will not hesitate to create or enforce common-sense safeguards to protect the American people. That’s what we’ve done in this country for more than a century. It’s why our food is safe to eat, our water is safe to drink, and our air is safe to breathe. It’s why we have speed limits and child labor laws.”<sup>9</sup>

The USDOL’s Strategic Plan and President Obama’s statement highlight the administration’s priority to focus on protections for children working in agriculture. Regulations are critical to this protection. This paper intends to foster a better understanding of the status of these protections and will review the historical background, strengths, and limitations of the current and proposed changes to the agricultural child labor regulations. Information about the nonagricultural child labor regulations is included as part of the historical context of the development of all protective regulations for children in the workplace. In addition, a comparison of the protections for different industry sectors helps to identify existing gaps in agriculture.

## HISTORICAL BACKGROUND

### *Keating-Owen Act*

The Keating-Owen bill of 1916 was the first law that created federal child labor regulations. This law banned the sale of products from any factory, shop, or cannery that employed children under the age of 14; from any mine that employed children under the age of 16; and from any facility that had children under the age of 16 working at night or for more than 8 hours during the day. However, this and another law passed in 1918 were both ruled unconstitutional by the Supreme Court on the grounds of states’ power to regulate interstate commerce.<sup>10</sup>

### ***The Fair Labor Standards Act***

The Fair Labor Standards Act (FLSA) of 1938 established a minimum age of 16 for nonagricultural employment, but with restrictions for youth to keep them from working in the most hazardous jobs. The FLSA also authorizes the Secretary of Labor to identify and regulate the types of work that 14- and 15-year-old youth may perform and limit the hours they may work. The list of restricted and prohibited work activities in nonagricultural jobs is described in 29 CFR Part 570. The hazardous orders (HOs) for 16- and 17-year-olds is in Subpart E, and the regulation with additional restrictions for 14- and 15-year-olds, Child Labor Regulation No. 3, is in Subpart C.<sup>11</sup> The premise of these regulations is to reduce the impact of work on the health and well-being of young workers. The assessment of workplace risks for youth is balanced with their need to fulfill their school requirements and has been integral in the process to update the regulations. Revisions to the regulations must also keep pace with the dynamic changes in the workplace based on new technologies, processes, machinery, and equipment. In addition to federal child labor regulations, states can and do adopt additional protections. Washington State is an example where, in a number of areas for both agriculture and nonagriculture, the state child labor laws exceed the protections of federal requirements.

### ***Differences in Protections for Agricultural Workers***

The FLSA applies to agricultural and nonagricultural employees alike. The provisions, including minimum wage and child labor, may apply to either an individual employee engaged in specific work activities or to an employer as a whole that meets a specific economic threshold. Individual employees are covered if they perform work where the product or activity involves interstate commerce. Or employees of a business, such as a farm or a restaurant, may be covered by the protections of the FLSA if the business has an annual gross volume of sales of at least \$500,000. These

thresholds for coverage of workers are the same for agricultural and nonagricultural employees alike. Because almost all farm products enter the stream of commerce, it is almost impossible for a young farmworker not to be covered by the child labor provisions under the FLSA unless they are a child of the farm owner or operator.<sup>12</sup>

However, agriculture, as an industry, is less regulated than nonagricultural industries and as such, farm workers have fewer protections and rights than workers in other occupations.

For instance, hired farm workers are generally exempt from the overtime pay provisions, and those employed on small farms below the minimum threshold described above are exempt from the minimum wage provisions as well. In addition, as will be described further throughout this article, the child labor protections have historically been weaker in agriculture than in other industries.

Under the OSHA regulations, health and safety protections exempt those farms that employ fewer than 11 employees.<sup>13</sup> However, despite the appropriations “rider” that exempts these smaller farms, at least 60% of farm workers are employed by the estimated 10% of farms that meet the threshold to fall under the OSHA requirements to protect agricultural workers (Goldstein B, President, Farmworker Justice, personal communication, August 2011, Washington, DC). Many are unaware of the extent of OSHA’s ability to enforce regulations in these agricultural enterprises.

Another area of inadequate protection for workers in agriculture is the limited access to workers’ compensation coverage. With the recent addition of New Mexico, only 14 states require employers to carry industrial insurance to provide medical and time-loss benefits to farmworkers who suffer work-related injuries, including youth.<sup>14</sup> Because many lack any other form of health insurance, youth either do not receive sufficient treatment, if any, or the public systems must carry the burden of the cost of healthcare. More details about these disparities can be found in another article in this issue (McLaurin and Liebman, “Unique Agricultural Safety and Health Issues of Migrant and Immigrant Children”).

## ***HAZARDOUS OCCUPATIONS ORDERS***

From 1939 through 1963, 17 nonagricultural hazardous orders (HOs) were individually adopted. The HOs provide the list of prohibited and restricted work activities for 16- and 17-year-old youth declared to be too dangerous for them to perform in a work setting, such as driving a forklift, using power-driven woodworking or metal-forming and -cutting machines, using meat slicers, and working in any roofing occupation. Enforcement of these HOs is critical to prevent serious or even fatal injuries among youth. A number of HOs include a student-learner exemption that allows 16- and 17-year-old students enrolled in a bona fide vocational education or work-based learning program to perform the task under limited circumstances. Updates to the child labor regulations require a time-consuming rulemaking process and hence are slow in keeping pace with changes in the workplace. Except for several changes to the nonagricultural HOs during the mid-1990s, the federal child labor regulations remained largely unchanged from 1970 until major revisions of the nonagricultural rules took effect in July 2010. Table 1 depicts the sequence of statutory and regulatory changes for both agricultural hazardous occupations orders (Ag H.O.) and nonagricultural hazardous occupations orders (HOs).

### ***History of the Hazardous Occupations Orders***

Although more details of the history of changes to the FLSA concerning the child labor provisions can be found in the recent Notice of Proposed Rulemaking,<sup>15</sup> an overview of key elements is presented in this and the following section.

Since enactment of the FLSA in 1938, restrictions for youth working in agriculture have been less protective than for youth employed in nonagricultural jobs, even where comparable or greater risk exists between industry sectors. Agriculture is defined as farms that involve the production, cultivation, growing, and harvesting of any agricultural or horticultural commodity, including dairy. It includes raising animals,

bees, poultry, and any forestry or lumber operations performed on a farm. This definition covers all practices related to crops or animals in preparation for and delivery to storage or market.<sup>12</sup>

The FLSA allows for a limited parental exemption for children working in a nonagricultural business owned by their parent(s) and removes the constraints of the age and hours-of-work restrictions. However, the exemption does not permit these youth to perform work activities prohibited under the HOs, or in mining and manufacturing industries. This limited exemption has existed relatively unchanged since 1938. At the same time, a more broad and far-reaching exemption for youth under age 16 employed in agriculture was included when the FLSA was enacted. Originally, youth not legally required to be in school were permitted to perform any activity in agriculture that was otherwise prohibited by the HOs. Only if work conflicted with school requirements did the HOs apply. The original authors of the FLSA did not attempt to prevent children from working, particularly in hazardous jobs, but compulsory education laws did, since working interfered with school attendance. School attendance requirements varied from state to state, and as a result, the protections of the HOs varied by state as well. Some states even amended their school attendance requirements specifically to assist agricultural employers in meeting their workforce needs. At that time, agricultural employment was an acceptable reason to excuse children from school attendance. Often, however, mandatory school attendance laws only applied to children of legal residents, which then permitted migrant farm worker children to perform any work at any age.

Congress began to address the gap in the protections for youth employed in agriculture based on school status by amending the FLSA in 1949. The change required that the restrictions of the HOs apply, but only during a district's scheduled school hours. During nonschool hours youth could perform any and all work activities. Changes at this time provided needed protection to migrant children, since the regulations now applied to youth in the community where they

TABLE 1. Timeline of United States Child Labor Regulations: 1938 Fair Labor Standards Act

Year	Action	Industry sector	Type of change	Summary of key changes
1938	FLSA* enacted	All	S	<ul style="list-style-type: none"> <li>• First federal statute with child labor provisions to withstand judicial review</li> </ul>
1939–1963	17 HOs	Non-Ag	R	<ul style="list-style-type: none"> <li>• First list of restricted hazardous work activities for minors</li> </ul>
1949	Amendments to FLSA for school attendance as it related to employment in agriculture	Ag	S	<ul style="list-style-type: none"> <li>• Restricts youth employment in agriculture to periods outside of school hours of the local public school regardless of whether the minor attended that school</li> </ul>
1966	Amendments to FLSA for HO for 14- and 15-year-olds	Ag	S	<ul style="list-style-type: none"> <li>• Clarifies parental exemption</li> <li>• Adopts minimum wage for most agricultural workers</li> </ul>
1967	Interim Orders for 16 HO for 14- and 15-year-olds	Ag	R	<ul style="list-style-type: none"> <li>• Originally prohibited use of tractors by 14- and 15-year-olds</li> </ul>
1968–1970	Interim Order for HO for 14- and 15-year-olds (modified)	Ag	R	<ul style="list-style-type: none"> <li>• Establishes parental exemption for Ag H.O.s for 14- and 15-year-old youth in agriculture<sup>†</sup></li> <li>• June 1968—Interim Order modified to allow use of tractors if USDA-sponsored training certificate received;</li> <li>• June 1969—Interim Order modified to allow Vocational Agricultural training to qualify for use of tractor training (requested by Office of Education).</li> </ul>
1970	Final Rule published	Ag	R	<ul style="list-style-type: none"> <li>• 16 Ag H.O.s modified and condensed to 11 (2011—Ag H.O.s remain unchanged)</li> </ul>
1974	Amendments FLSA	Ag	S	<ul style="list-style-type: none"> <li>• 14- and 15-year-olds may work in nonhazardous work in agriculture outside school hours</li> <li>• 12- and 13-year-olds may be employed at same farm as parent or person standing in place of a parent, or with written consent of parent or person standing in place of a parent to perform nonhazardous work outside of school hours</li> <li>• Permits children &lt;12 years old to work with written consent of parent or person standing in place of a parent to perform nonhazardous work outside of school hours, on small farms where there are no employees who are required to be paid federal minimum wage</li> </ul>
1996	Amendments to FLSA	Non-Ag	S	<ul style="list-style-type: none"> <li>• Permits 16- and 17-year-old youth to load specified paper balers [prohibited from unloading or operating any paper balers]</li> </ul>
1998	Amendments to FLSA	Non-Ag	S	<ul style="list-style-type: none"> <li>• Prohibits on-the-job driving by minors under age 17</li> <li>• Permits limited daylight driving of certain trucks and automobiles by 17-year-old youths</li> </ul>
2004	Amendments to FLSA	Non-Ag	S	<ul style="list-style-type: none"> <li>• Permits certain 14- to 17-year-old youth (e.g., Amish) to work where powered machinery is used to process wood products</li> </ul>
1997 1998	NPRM	Non-Ag	R	<ul style="list-style-type: none"> <li>• Proposal for extensive revisions to HOs</li> <li>• USDOL/WHd funds NIOSH to review all hazardous orders for agriculture and nonagriculture</li> </ul>
2004	Final Rule from 1997 NPRM	Non-Ag	R	<ul style="list-style-type: none"> <li>• Restricts the types of cooking that may be performed by 14- and 15-year-olds and limits the cleaning of certain kitchen equipment</li> </ul>

(Continued)

TABLE 1. (Continued)

Year	Action	Industry sector	Type of change	Summary of key changes
2007	ANPRM and NPRM	Non-Ag	R	<ul style="list-style-type: none"> <li>• Incorporates into the regulations the FLSA amendments impacting driving and loading, operating, and unloading paper balers and compactors</li> <li>• Prohibits all work on or about a roof while retaining ban on all work in roofing industry</li> <li>• Addresses many of NIOSH recommendations; as well as Reg. 3 for 14- and 15-year-old youth</li> </ul>
2010	Final Rule** adopted from 2007 NPRM	Non-Ag	R	<ul style="list-style-type: none"> <li>• Most comprehensive changes to federal child labor provisions in over 30 years</li> <li>• Revises the CL Reg. 3 occupations standards governing the employment of 14- and 15-year-olds. Keeps all previous prohibitions</li> <li>• Bans door-to-door sales, poultry catching/cooping, and operation of many types of power-driven equipment</li> <li>• Permits work of an intellectual nature, work as a life guard (if <math>\geq 15</math> years old and properly certified), and riding in motor vehicles as a passenger under specific conditions</li> <li>• Revises HO 4 to prohibit most employment in forest fire fighting and prevention, forestry services, timber tract management, logging, and sawmilling</li> <li>• Revises HO 7 to prevent riding on forklifts and the operating/assisting in the operation of most hoisting equipment regardless of the hoisting capacity of the equipment</li> <li>• Revises HO 10 to include poultry slaughtering and processing among the prohibitions</li> </ul>
2011	NPRM for Agriculture H.O. orders	Ag	R	<ul style="list-style-type: none"> <li>• Revises HO 11 to incorporate two long standing enforcement positions that allow 16- and 17-year-olds to operate certain portable table-top mixers and certain pizza dough rollers</li> <li>• Published September 2, 2011</li> <li>• Available at: <a href="http://www.gpo.gov/fdsys/pkg/FR-2011-09-02/pdf/2011-21924.pdf">http://www.gpo.gov/fdsys/pkg/FR-2011-09-02/pdf/2011-21924.pdf</a></li> </ul>

\*Provides statutory authority to develop and enforce regulations.

†Ag H.O.s do not cover 16- and 17-year-olds.

\*\*Rule = enforcement and compliance requirements adopted under the authority of the statute (FLSA). Ag = agriculture; ANPRM = Advanced Notice of Proposed Rulemaking; FLSA = Fair Labor Standards Act; HO = hazardous order; NPRM = Notice of Proposed Rulemaking; Non-Ag = nonagriculture; R = regulatory; S = statutory; USDOL/WHD = United States Department of Labor, Wage and Hour Division.

worked, whether or not the child attended school in the area. However, youth were still permitted to perform dangerous and hazardous work outside of school attendance. Further refinement regarding the parameters of school attendance continued to change over time until the final rule was promulgated in 1970, and finally included provisions that the HOs applied at all times, regardless of school status.

### ***Agricultural Hazardous Occupations Orders (Ag H.O.s)***

Until the 1966 amendments to the FLSA, there were no hazardous occupations orders specific to agriculture. Congress authorized the creation of Ag H.O.s, but these only applied to hired farm workers under age 16. These amendments created differential protections for

employed youth in agricultural versus those in nonagricultural jobs, including a minimum age of 16 for performing hazardous work in agriculture but age 18 in nonagriculture. Another change at this same time expanded the parental exemption for youth under age 16 to those working on a farm owned *or operated* by a parent or by *a person standing in place of* the parent and excluded them from the Ag H.O.s. This change permitted more children, covered by the exemption, to perform any work activity at any age. In addition, similar to the nonagricultural regulations for 16- and 17-year-old youth, a student-learner exemption was created for 14- and 15-year-olds students permitting them to perform work otherwise prohibited.

Further amendments in 1974 created exceptions that allow 12- and 13-year-old youth to be employed in agriculture as long as parental permission was given, and only during nonschool hours as was the case for other hired youth under age 16. Those younger than age 12 could even be employed on small farms where the federal minimum wage requirements did not apply. There were no additional protections for those under age 14 and the same Ag H.O.s applied to all youth under age 16 legally permitted to work. Table 2 provides a comparison of the existing work restrictions by industry and age group.

One of the original Ag H.O.s prohibited youth under 16 years of age from operating, driving, or riding farm tractors and certain other machinery. However, in 1968, at the request of the US Department of Health, Education, and Welfare's Division of Vocational and Technical Education, the interim rule was modified to allow 14- and 15-year-olds to drive tractors and operate other farm machinery if they completed a formal training program in the use of this equipment. Since then, this training has been coordinated by the US Department of Agriculture's Federal Extension Service.

Over the course of 2 years in the late 1960s the USDOL established an Agricultural Advisory Committee to evaluate the activities covered by the Ag H.O.s. The final rule adopted in 1970 included 11 Ag H.O.s. Until now, the agricultural child labor regulations have remained unchanged. On September 2, 2011, the USDOL published the Notice of Proposed

Rulemaking (NPRM)<sup>15</sup> to update the Child Labor Regulations, primarily in agriculture but with two new nonagricultural HOs in addition. The proposed changes to the regulations are described in a later section of this article.

### ***NIOSH Review of Hazardous Occupations Orders***

In 1998, the USDOL's Wage and Hour Division provided funding to the National Institute for Occupational Safety and Health (NIOSH) to undertake a comprehensive evaluation of the then-current child labor agricultural and nonagricultural hazardous occupations orders. The 2002 NIOSH report describes 35 recommendations concerning the then-existing hazardous occupations orders: 14 recommendations to update the existing agricultural hazardous occupations orders (Ag H.O.s), and recommended creation of 17 new hazardous orders in the agriculture and nonagriculture regulations.<sup>16</sup> A secondary review of these recommendations was undertaken to determine the costs and benefits of implementation versus not implementing these recommendations.<sup>17</sup> As a result, revisions to the nonagricultural HOs were made and updated regulations became effective in July 2010.<sup>18</sup> This process that began in 1998 when the Institute of Medicine convened a committee to evaluate the issues and knowledge regarding protecting young workers<sup>19</sup>. Activities to update all the child labor regulations has spanned nearly 15 years, more than sufficient time to consider available information and data that support the final agricultural recommendations described below.

### ***Proposed Updates to the Agricultural Hazardous Occupations Orders (Ag H.O.s)***

Table 3 provides a list of the original 11 Ag H.O.s and compares them with the proposed revisions.<sup>20</sup> The first six Ag H.O.s currently allow for a student-learner exemption for those 14- and 15-year-old students enrolled in an agricultural vocational education training program. Some of the proposed criteria to qualify

TABLE 2. Protection of Youth from Hazardous Work by Industry and Age Categories

Age category	Agriculture		Nonagriculture	
	Family	Hired employee (nonfamily)	Family	Hired employee (nonfamily)
<12 years	Not protected <ul style="list-style-type: none"> <li>• Any work</li> <li>• Any time</li> <li>• Unlimited hours</li> </ul>	Protected <ul style="list-style-type: none"> <li>• May do <i>nonhazardous</i> work with parental consent on small farms</li> <li>• Outside school hours</li> <li>• Unlimited hours</li> </ul>	Protected <ul style="list-style-type: none"> <li>• May do <i>nonhazardous</i> work</li> <li>• Outside school hours</li> <li>• Unlimited hours</li> </ul>	Protected <ul style="list-style-type: none"> <li>• May work in movie, radio, and theater productions and newspaper delivery only (exempt from regulations)</li> <li>• Outside school hours</li> <li>• Work hour restrictions</li> </ul>
12–13 years	Not protected <ul style="list-style-type: none"> <li>• Any work</li> <li>• Any time</li> <li>• Unlimited hours</li> </ul>	Protected <ul style="list-style-type: none"> <li>• May do <i>nonhazardous</i> work with parental consent</li> <li>• Outside school hours</li> <li>• Unlimited hours</li> </ul>	Protected <ul style="list-style-type: none"> <li>• May do <i>nonhazardous</i> work</li> <li>• Outside school hours</li> <li>• Unlimited hours</li> </ul>	Protected <ul style="list-style-type: none"> <li>• May work in movie, radio, and theater productions and newspaper delivery only (exempt from regulations)</li> <li>• Outside school hours</li> <li>• Work hour restrictions</li> </ul>
14–15 years	Not protected <ul style="list-style-type: none"> <li>• Any work</li> <li>• Any time</li> <li>• Unlimited hours</li> </ul>	Not protected <ul style="list-style-type: none"> <li>• If training course completed, may operate tractors and machinery (H.O.s 1 and 2)</li> <li>• Outside school hours</li> <li>• Unlimited hours</li> </ul>	Protected <ul style="list-style-type: none"> <li>• May do <i>nonhazardous</i> work</li> <li>• Outside school hours</li> <li>• Unlimited hours</li> </ul>	Protected <ul style="list-style-type: none"> <li>• May do only that <i>nonhazardous</i> work the Secretary of Labor has determined to be safe and appropriate. Work that is not specifically permitted is therefore prohibited.</li> <li>• Outside school hours</li> <li>• Work hour restrictions</li> </ul>
16–17 years	Not protected <ul style="list-style-type: none"> <li>• Any work</li> <li>• Any time</li> <li>• Unlimited hours</li> </ul>	Not protected <ul style="list-style-type: none"> <li>• Any work</li> <li>• Outside school hours</li> <li>• Unlimited hours</li> </ul>	Protected <ul style="list-style-type: none"> <li>• May do <i>nonhazardous</i> work</li> <li>• Outside school hours</li> <li>• Unlimited hours</li> </ul>	Protected <ul style="list-style-type: none"> <li>• May do <i>nonhazardous</i> work</li> <li>• Outside school hours</li> <li>• Unlimited hours</li> </ul>

for these exemptions are similar to those in the nonagricultural child labor regulations for 16- and 17-year-old youth. It is unknown how many youth currently qualify for the student-learner exemptions. The proposed changes will strengthen the requirements for a student-learner exemption under the Ag H.O.s and are summarized in Box 1.

It is important to note that the proposed student-learner exemption requirements not only limit the exposure of youth to hazardous work, but also details a schedule of progressive training to acquire the needed skills, including relevant safety training, to perform such work. However, Ag H.O.s 1 and 2 have allowed

for different criteria for 14- and 15-year-old youth to drive a tractor or use other powered equipment and machinery. A 14- or 15-year-old youth who has successfully completed a single certificate training course under a 4-H or Federal Extension Service or other vocational agriculture training program can be exempt from these restrictions without receiving more thorough and ongoing training. For example, once a youth completes a single training course about using tractors, a certificate of completion qualifies them for the complete exemption under Ag H.O. 1. No such mechanism exists for such a complete exemption from the nonagricultural HOs for 16- and 17-year-old youth.

### BOX 1. Proposed Changes to the Student-Learner Exemption Requirements for 14- and 15-Year-Old Youth

- Enrolled in an agricultural vocational education training program under a recognized state or local educational authority, or in a substantially similar program conducted by a private school.
- Employed under a written agreement that states that the work of the student-learner performing tasks or jobs listed under an HO is incidental to his/her training.
- Such work is intermittent, for short periods of time, and under the direct and close supervision of a qualified and experienced person.
- Safety instruction is given by the school and correlated by the employer with on-the-job training.
- A schedule of organized and progressive work processes to be performed on the job have been prepared.

#### *Tractor Hazards and Certification Programs*

Tractors are a leading cause of injuries and fatalities on farms. Nationally, tractor overturns are the leading cause of occupational fatalities in agriculture. Between 1992 and 2005, 1412 workers on farms died from tractor overturns.<sup>21</sup> Tractors are also the leading cause of death among young agricultural workers.<sup>22</sup> Between 1992 and 1997, nearly one third of the deaths of youth in agriculture could be attributed to involvement with tractors. In about half of these cases, the tractor overturned on the youth.<sup>5</sup> The same study reported that machinery and vehicles accounted for 72% of fatalities among young agricultural workers, most of which involved tractors.

Little has been done to evaluate the effectiveness of tractor training programs, and the empirical support for the training exemption is mixed. An evaluation of the Tractor and Machinery Certification program with 11- to 17-year-old youth in Wisconsin found little difference in safety behaviors 1 year after the training, and less than one third of parents felt the program improved the safety behavior of the youth participant.<sup>23</sup> Another study evaluated 14- to 19-year-old youth in the Indiana 4-H tractor program and observed participants operating tractors in a safer and more skillful manner than nonparticipant youth.<sup>24</sup> However, there were no differences in the injury experience between groups, and 4-H tractor program participants reported more tractor-related close calls and

seemed more willing to take risks while operating a tractor. A more recent study evaluated the effectiveness of a state policy requiring 12- to 15-year-old youth to complete a tractor certification course as a means of reducing tractor crashes on public roads.<sup>25</sup> There was no significant change in the number of youth tractor crashes on Wisconsin public roads following the enactment of the policy. Although there was an increase in the number of youth certified, with few exceptions the tractor certification course did not cover the major factors contributing to youth tractor crashes on public roads.

Training alone does not make a task or activity age appropriate, especially based on a one-time training certificate. It is essential to remove youth from hazardous work, rather than attempt to train them prematurely to handle dangerous machinery or work in hazardous environments. If the use of tractors is permitted for 14- and 15-year-olds, more comprehensive training and supervision requirements, such as those described in the proposal, are needed. The hazardous nature of tractors requires additional provisions beyond existing student-learner requirements.

In a commentary in this issue, Marlenga et al. present data that show that younger youth are not developmentally ready or able to use tractors or perform other work normally assigned to adults (Marlenga, Lee, and Pickett, "Guidelines for Children's Work in Agriculture: Implications for the Future"; this issue). The hazardous nature of tractors and other machinery requires additional restrictions

TABLE 3. Agricultural Child Labor Hazardous Occupations Orders

Agricultural hazardous occupations (Ag H.O.s) for youth under age 16, 1970–present	Proposed agricultural hazardous occupations (Ag H.O.s) for youth under age 16, 2011
<p>Ag H.O. 1</p> <ul style="list-style-type: none"> <li>Operating a tractor of over 20 power take-off (PTO) horsepower, or connecting or disconnecting an implement or any of its parts to or from such a tractor (student-learner exemption allowed).</li> </ul>	<p>Retain and expand Ag H.O. 1</p> <ul style="list-style-type: none"> <li>Remove the 20 PTO Horsepower threshold criteria. Small garden-tractors would be covered under this Ag HO.</li> <li>Continue to allow for a student-learner exemption and require that tractors operated by 14- and 15-year-old student-learners be equipped with approved rollover protective structures (ROPS) and seat belts, and that the use of seat belts be mandated. <ul style="list-style-type: none"> <li>Certificate training options would be eliminated.</li> </ul> </li> <li>Move the prohibition regarding youth riding on tractors as passengers from Ag H.O. 7 to this Ag H.O.</li> <li>*Include provisions similar to those proposed in HO 19 (non-Ag) prohibiting the use of electronic devices, including communication devices, while operating tractors.</li> <li>*Require that student-learners operating tractors have a valid state driver's license to operate tractors and other farm machinery on public roads.</li> </ul>
<p>Ag H.O. 2</p> <ul style="list-style-type: none"> <li>Operating or assisting to operate (including starting, stopping, adjusting, feeding, or any other activity involving physical contact associated with the operation) any of the following machines: corn picker, cotton picker, grain combine, hay mower, forage harvester, hay baler, potato digger, mobile pea viner, feed grinder, crop dryer, forage blower, auger conveyor, the unloading mechanism of a non-gravity-type self-unloading wagon or trailer, power post-hole digger, power post driver, or non-walking-type rotary tiller (student-learner exemption allowed).</li> </ul>	<p>Combine Ag H.O.s 2 and 3 [Ag H.O. 2]</p> <ul style="list-style-type: none"> <li>*Expand prohibitions from lists of specific machines to all power-driven equipment. [Use of power-driven equipment has been prohibited in nonagricultural industries.]</li> <li>*Prohibit minors from riding as passengers on all farm machines when being moved on public roads.</li> <li>Youth would be permitted to ride as passengers inside cars, trucks, and buses if certain requirements are met, including mandatory use of seat belts.</li> <li>Revise and strengthen the exemption for student-learners and limit the types of equipment that student-learners may operate.</li> </ul>
<p>Ag H.O. 3</p> <ul style="list-style-type: none"> <li>Operating or assisting to operate (including starting, stopping, adjusting, feeding, or any other activity involving physical contact associated with the operation) any of the following machines: trencher or earthmoving equipment, fork lift, potato combine, or power-driven circular, band, or chain saw (student-learner exemption allowed).</li> </ul>	<ul style="list-style-type: none"> <li>*Require that a student-learner operating equipment on a public road hold a valid driver's license for such operations (see Ag H.O. 1 above).</li> <li>*Student-learners riding as passengers must have an "approved seat" with a seat belt; seat belt use is required.</li> <li>*Include "distracted driving" provisions prohibited use of electronic communication devices while operating equipment [as in proposed Ag H.O. 1 and nonagricultural HO 19].</li> </ul>
<p>Ag H.O. 4</p> <ul style="list-style-type: none"> <li>Working on a farm in a yard, pen, or stall occupied by a bull, boar, stud horse maintained for breeding purposes, sow with suckling pigs, or cow with newborn calf (with umbilical cord present) (student-learner exemption allowed).</li> </ul>	<p>New Ag H.O. 3</p> <ul style="list-style-type: none"> <li>*Prohibit employment in occupations involving the operation of non-power-driven hoisting apparatus and conveyers. <ul style="list-style-type: none"> <li>A student-learner exemption would not be permitted.</li> </ul> </li> </ul> <p>Retain and expand Ag H.O. 4</p> <ul style="list-style-type: none"> <li>*Expand the current Ag H.O. to prohibit Certain Occupations Involving Working With or Around Animals. It would prohibit the following: <ul style="list-style-type: none"> <li>working on a farm in a yard, pen, or stall occupied by an intact (not castrated) male equine, porcine, bovine, or bison older than six months, a sow with suckling pigs, or cow with new born calf (with umbilical cord present);</li> <li>engaging or assisting in animal husbandry practices that inflict pain upon the animal and/or are likely to result in unpredictable animal behavior such as, but not limited to, branding, breeding, dehorning, vaccinating, castrating, and treating sick or injured animals;</li> </ul> </li> </ul>

(Continued)

TABLE 3. (Continued)

Agricultural hazardous occupations (Ag H.O.s) for youth under age 16, 1970–present	Proposed agricultural hazardous occupations (Ag H.O.s) for youth under age 16, 2011
<p>Ag H.O. 5</p> <ul style="list-style-type: none"> <li>Felling, bucking, skidding, loading, or unloading timber with butt diameter of more than six inches (student-learner exemption allowed).</li> </ul>	<ul style="list-style-type: none"> <li>– handling animals with known dangerous behaviors;</li> <li>– poultry catching or cooping in preparation for slaughter or market; and</li> <li>– herding animals in confined spaces such as feed lots or corrals, or on horseback, or using motorized vehicles such as trucks or all-terrain vehicles.</li> </ul> <p>Retain and revise Ag H.O. 5</p> <ul style="list-style-type: none"> <li>Update: remove the 6-inch diameter threshold and specifically prohibit the removal of stumps by other than manual means.</li> </ul> <p>* New Ag H.O. 6</p> <ul style="list-style-type: none"> <li>Prevent employment in construction, communications, wrecking, demolition, and excavation.</li> <li>This new Ag H.O. brings many of the protections and prohibitions already applicable to the employment of 14- and 15-year-olds in nonagriculture to the employment of hired farmworkers of the same age.</li> <li>These proposals address the need to bring parity between the agricultural and nonagricultural child labor provisions.</li> </ul>
<p>Ag H.O. 6</p> <ul style="list-style-type: none"> <li>Working from a ladder or scaffold (painting, repairing, or building structures, pruning trees, picking fruit, etc.) at a height of over 20 feet (student-learner exemption allowed).</li> </ul>	<p>Revise and renumber as Ag H.O. 7</p> <ul style="list-style-type: none"> <li>Occupations involving work on roofs, scaffolds, and at elevations greater than 6 feet.</li> <li>Expand to include work on elevated farm structures including silos, grain bins, windmills, and towers; and vehicles, machines, and implements.</li> <li>Reduces the maximum height at which youth under age 16 may work at elevation from 20 feet to 6 feet, including work on ladders.</li> </ul>
<p>Ag H.O. 7</p> <ul style="list-style-type: none"> <li>Driving a bus, truck, or automobile when transporting passengers, or riding on a tractor as a passenger or helper.</li> </ul>	<p>Expand and renumber Ag H.O. 7 [incorporate into Ag H.O.s 1 and 2]</p> <ul style="list-style-type: none"> <li>Prohibit driving of all motor vehicles and off-road vehicles.</li> <li>Expand this Ag H.O. to prohibit work as an outside helper on motor vehicles.</li> <li>Retain provision prohibiting riding on a tractor as a passenger or helper, but move it to Ag H.O. 1.</li> </ul>
<p>Ag H.O. 8</p> <ul style="list-style-type: none"> <li>Working inside a fruit, forage, or grain storage designed to retain an oxygen deficient or toxic atmosphere; an upright silo within two weeks after silage has been added or when a top unloading device is in operating position; a manure pit; or a horizontal silo while operating a tractor for packing purposes.</li> </ul>	<p>Expand and split as Ag H.O.s 8 and 9</p> <ul style="list-style-type: none"> <li>Prohibit all work inside a fruit, forage, or grain storage (such as a silo or bin).</li> </ul>
<p>Ag H.O. 9</p> <ul style="list-style-type: none"> <li>Handling or applying (including cleaning or decontaminating equipment, disposal or return of empty containers, or serving as a flagman for aircraft applying) agricultural chemicals classified under the Federal Insecticide, Fungicide, and Rodenticide Act (7 U.S.C. 135 et seq.) as Category I of toxicity, identified by the word “poison” and the “skull and crossbones” on the label; or Category II of toxicity, identified by the word “warning” on the label.</li> </ul>	<p>Ag H.O. 9</p> <ul style="list-style-type: none"> <li>Prohibit work inside a manure pit.</li> </ul> <p>Revise and renumber Ag H.O. 9 as Ag H.O. 10</p> <ul style="list-style-type: none"> <li>Revise to be consistent with the EPA Worker Protection Standard for pesticides and redesignate it as Ag H.O. 10.</li> <li>Ban all work that falls within the EPA classification of pesticide handler. NIOSH recommends WHD draft the regulation so that it will not have to be “updated” whenever EPA revises the standard.</li> <li>Use definition of pesticides contained in FIFRA.</li> </ul>

(Continued)

TABLE 3. (Continued)

Agricultural hazardous occupations (Ag H.O.s) for youth under age 16, 1970–present	Proposed agricultural hazardous occupations (Ag H.O.s) for youth under age 16, 2011
Ag H.O. 10 • Handling or using a blasting agent, including but not limited to, dynamite, black powder, sensitized ammonium nitrate, blasting caps, and primer cord	Retain Ag H.O. 10 and renumber as Ag H.O. 11
Ag H.O. 11 • Transporting, transferring, or applying anhydrous ammonia	Retain Ag H.O. 11 and renumber as Ag H.O. 12
Nonagricultural hazardous orders additions	New Ag H.O. 13 • Prohibit the employment of young hired farmworkers in occupations involving the production and curing of tobacco in order to prevent them suffering from green tobacco sickness (GTS). • Includes, but not limited to, planting, cultivating, topping, harvesting, baling, burning, and curing of tobacco.
New non-Ag HO 18	• Occupations in farm-product raw materials wholesale trade industries – Includes, but not limited to: most occupations performed at country grain elevators, grain elevators, grain bins, silos, feed lots, feed yards, stockyards, livestock exchanges, and livestock auctions.
New non-Ag HO 19	• The use of electronic devices, including communication devices, while operating power-driven equipment, including motor vehicles.

\*Denotes proposed revisions not based on a NIOSH recommendation.

Current Child Labor Requirements under the Fair Labor Standards Act (FLSA):

- Agricultural: <http://www.dol.gov/whd/regs/compliance/childlabor102.htm>
- Nonagricultural: <http://www.dol.gov/whd/regs/compliance/childlabor101.htm>

and provisions beyond any existing student-learner requirement.

### ***Parental Exemption in Agriculture***

The “family farm” exemption was built on an agrarian tradition to allow children living on farms to work with their parents and learn skills that often maintain a way of life for generations. The ideal of this tradition has been a costly one with tragic loss of life.<sup>26</sup> During the time period 1998–2002, 60% of fatalities in agriculture occurred to youth under age 17 working on the family farm.<sup>3</sup> Hard and Myers<sup>5</sup> found that family farm youth constituted nearly 54% of work-related fatalities to youth under age 16. Over the years, what is more accurately described as a parental exemption gradually expanded to include farms either owned *or*

*operated* by their parents or *by someone standing in for* a parent. Farms that are operated by parents or parent stand-ins are not typically where the child resides, and the child may not be under the care or direct and close supervision of their parents while performing potentially hazardous work. In addition, in many farming families, one or both parents are employed off the farm for economic reasons or career choices. This situation reduces supervision and assistance for the child that would ensure his/her safety. In many other circumstances, injury prevention strategies and other public health measures provide direction to keep children out of harm’s way in the home and the community. Farm settings should be no exception.

The parental exemption in agriculture, permitting children of any age to perform any and all work activities, has remained unchanged

since the 1966 amendments to the FLSA. The changes at that time expanded and broadened the scope of the exemption in agriculture beyond what is permitted in the nonagricultural employment for youth. It permits children employed on a farm owned *or operated* by their parents, or owned or operated by persons *standing in place of a parent* to be exempt from all parts of the FLSA, including the Ag H.O.s. No such total parental exemption exists in nonagricultural employment. Children employed in their parent's nonagricultural business are still protected by the nonagricultural HOs and prohibited from performing such work. Nor is a child exempt from the regulations where a parent stand-in owns a business or where a parent or parent stand-in *operates* the business but does not own it. To alter this exemption in agriculture, an act of Congress is required to change the FLSA.

Removal of the parental exemption could have a significant impact on reducing work-related injuries among youth. This injury prevention potential was explored by Marlenga and colleagues through a review of a retrospective case series of youth farm injuries.<sup>27</sup> By systematically applying the prohibitions of the Ag H.O.s to the work activities performed by injured children exempt from the regulations, they found that greater than 60% of the fatal injuries and 45% of the hospitalized injuries for these youth younger than age 16 could be prevented. In addition, this study found that raising the age-limit required for youth to perform hazardous agricultural work from 16 to 18 years could potentially prevent more than 50% of both fatal and hospitalized injuries among these older teens. These potential reductions would meet or exceed the national goals of Healthy People 2020 for reducing traumatic injury in

the agricultural sector (see [www.healthypeople.gov/2020/topicsobjectives2020/objectiveslist.aspx?topicId=30](http://www.healthypeople.gov/2020/topicsobjectives2020/objectiveslist.aspx?topicId=30)). Table 4 presents previously unpublished data from the Bureau of Labor Statistics<sup>26</sup> on the fatalities to youth under age 18, comparing deaths among youth in all industries, in agriculture, and in a family business in agriculture.

### ***Role of Law in Public Health and Parental Perceptions***

One role of government in general, and public health in particular, is to initiate and provide protective measures to ensure healthy people and communities. This is particularly necessary where vulnerable populations such as children and youth are concerned. Some believe that creating protective regulations for worker health and safety, child labor, and other elements that impact the health of individuals and communities are unnecessary and stifle job growth and the economy. However, these measures prevent long-term consequences such as disability or increased illnesses and premature deaths, not to mention the pain and suffering experienced by injured workers, their families, and communities.

Voluntary behavior changes based on individual knowledge and judgment have been less successful than prevention strategies required by law.<sup>28</sup> Laws requiring the use of seatbelts, child safety seats, and helmets for bicycles and motorcycles are examples that have made impacts in reducing morbidity and mortality. Acceptance of public health laws can vary depending upon the perception that they may interfere with individual autonomy or create a barrier to profit-making practices of a business

TABLE 4. Fatalities Among Youth Working in Agriculture—Family Business compared to Private Industry Bureau of Labor Statistics Data, 2003–2009

Age	All industries	All agriculture	Percent of deaths in agriculture	Deaths in agriculture in a family's business	Percent of deaths in agriculture in a family's business
Under 16 years	184	148	80.4%	66	44.5%
16–17 years	183	67	36.6%	21	31.3%
Total <18 years	367	215	58.5%	87	40.4%

or corporation. Effective injury prevention laws and other strategies must primarily serve their intended purpose. But when the planned outcome is absent or not evident, this creates an additional obstacle to their acceptance and implementation.

Some pediatric farm safety advocates describe “redefining the unacceptable” as a process toward changing attitudes and behavior.<sup>29</sup> When a community realizes the severity of outcomes that result from certain activities, behaviors, or lack of action, members of the community may experience a concurrent increase in their sense of vulnerability. Families that suffer the tragic death of a child or a severe injury to a child, such as a leg amputation due to a farm-related incident, may begin the process of redefining the unacceptable in their community. Such tragedies often lead to calls for stronger protections and consequences in the form of laws, lawsuits, public education campaigns, and the like.

Few studies have evaluated parent knowledge, attitudes, and beliefs about workplace safety issues for their teen children. In one study, 84% of parents reported that their teens conveyed workplace safety concerns to them,<sup>30</sup> and yet parents often do not know about the laws and regulations that restrict teen work activities.<sup>31</sup> Another study of parents found that although they were favorable toward laws that regulate teen work activities, they also believe that parents, not laws, should determine what work teens do.<sup>32</sup> At the same time, parents indicated that it is important that laws limit the kinds of work performed and equipment permitted for use by youth, and they believe that the hours of work for teens should be limited, particularly during the school year. Regarding younger children working long hours in agriculture, a survey by the National Consumers League (NCL) of 1011 adults found that 96% would not allow their own children under age 14 to work more than 40 hours per week doing farm work, and 83% agreed that it is “not okay” for children (their own or other’s) under age 14 to work long hours.<sup>33</sup>

The role of parents to guide their children to learn new things, develop responsibility, and earn their own spending money, and yet to

ensure the children’s safety, may at times be a conflicted issue when it comes to the role of work in their child’s life. The social context of work throughout the age of a child, adolescent, or young adult is beyond the scope of this paper, but can be found in the writings of others.<sup>19,34–36</sup> Work must be age appropriate, with direction and limitations provided based on developmental stage, just as any other guidance is given for activities considered safe for a child according to their age level. The National Children’s Center for Rural and Agricultural Health and Safety developed and evaluated the North American Guidelines for Children’s Agricultural Tasks (NAGCAT) for this purpose.<sup>37,38</sup> NAGCAT can serve as a guide for age-appropriate limits on specific work activities for youth when the protections of the child labor regulations do not legally apply.

Castillo<sup>39</sup> reported a study that indicated that although parents may not be overly concerned about work-related injuries, they are more likely to teach their children about safety issues if they feel confident about their own knowledge and skills in this area. This underscores the need to increase parental involvement and provide more education to parents, not only about the laws intended to protect their children, but also guidance about placing limits on work activities based on their child’s age and individual capabilities, such as the NAGCAT mentioned earlier.

### ***NEW PROVISIONS OF THE UPDATED CHILD LABOR REGULATIONS***

The USDOL’s proposal would adopt all 14 of the NIOSH recommendations for agriculture described in the 2002 NIOSH report, *National Institute of Occupational Safety and Health (NIOSH) Recommendations to the US Department of Labor for Changes to Hazardous Orders*.<sup>16</sup> The proposed revisions to the Agricultural Child Labor Rules increase the protections for youth by expanding, updating, and clarifying most of the existing Ag H.O.s and by adding three new Ag H.O.s. The proposal also removes the existing student-learner exemptions from four of the first six Ag H.O.s,

and the criteria for the remaining ones under Ag H.O.s 1 and 2 are strengthened. Several of the updated elements are more similar to the student-learner exemption requirements for older youth employed in nonagricultural jobs. Table 3 compares the existing list of Ag H.O.s with the proposed changes.<sup>20</sup> The proposal also includes two new non-Ag HOs that will increase protections for all youth under age 18.

The first of the new Ag H.O.s, designated as Ag H.O. 3, would prohibit youth under age 16 from employment in occupations involving the operation of non-power-driven hoisting apparatus and conveyers. A student-learner exemption would not be permitted. The new Ag H.O. 6 would prohibit employment in construction, communications, public utilities, roofing and work on or about a roof, wrecking, demolition, and excavation. This new Ag H.O. makes many of the protections and prohibitions already applicable to the employment of all minors under age 18 in nonagriculture comparable for hired farm workers under age 16. These changes increase parity between the two sets of child labor provisions by increasing the protections for youth under age 16 working in agriculture.

Another new Ag H.O., designated as Ag H.O. 13, will prohibit the employment of young farm workers in occupations involving the production and curing of tobacco in order to prevent them suffering from green tobacco sickness (GTS). This includes all work in the planting, cultivating, harvesting, and curing of tobacco. GTS is an occupational illness of acute nicotine poisoning from skin exposure to the green and typically wet leaves.<sup>40</sup> Symptoms include weakness, dizziness, headache, nausea, vomiting, cramps, respiratory difficulty, insomnia, and anorexia. A number of studies have reviewed cases of GTS poisoning affecting children and adolescents.<sup>41</sup> Children are known to have a higher sensitivity to toxic exposures leading to more severe symptoms at a lower dose than adult exposures (Karr, "Children's Environmental Health in Agricultural Settings"; this issue).

The proposal would strengthen Ag H.O.s 1 and 2 by placing limits on the student-learner exemption for 14- and 15-year-old youth enrolled in agricultural vocational education

programs, and include additional criteria for these youth to qualify to use tractors, vehicles, and other machinery otherwise prohibited. This student-learner exemption becomes more consistent with, and even stronger than, the one available for 16- and 17-year-olds employed in nonagricultural work. This exemption requires a baseline of at least 90 hours of school training followed by ongoing and specific training in order for the minor to be permitted to perform otherwise prohibited work and eliminate the one-time certificate option currently allowed. The type of work that student-learners would be permitted to perform has also been limited in scope.

### ***Grain Handling Facilities: Addition of New Nonagricultural Hazardous Order***

Under the current child labor laws, no one under age 16 is permitted to work in a silo or grain elevator on a farm within 2 weeks after silage has been added. The proposed changes to Ag H.O. 8 will prohibit *all* work inside any fruit, forage, or grain storage bin or silo located on a farm for any youth under age 16. Under the nonagricultural HOs, youth under age 16 are already prohibited from working in or around commercial grain handling facilities. However, this is an example of where the current hazardous occupation orders are not sufficiently protective for all minors, including 16- and 17-year-old youth. The rules limiting hazardous work in agriculture do not cover 16- and 17-year-old youth, and the current nonagricultural regulations do not address work in commercial grain handling facilities, such as grain elevators. As a result, these youth are exposed to extremely dangerous work that has been shown to be hazardous to all workers. The proposed new non-Ag HO 18, *Occupations in Farm-Product Wholesale Trade Industries*, would prohibit 16- and 17-year-old minors from working in any occupation associated with them. The following summary of information compiled by Purdue University, and the case examples presented in Box 2, support and demonstrate the need to strengthen both child labor and health and safety laws and their enforcement.

**BOX 2. Fatal and Disabling Injuries Involving Grain Handling Facilities****Case 1**

In July 2010, two teenagers (aged 14 and 19) were killed in a tragic incident involving a grain elevator in Illinois. Both young workers suffocated after being engulfed in a grain bin they had entered to help clear. A third young worker (age 20) was pulled out of the storage bin alive, and was hospitalized after being trapped for 12 hours. Another minor, aged 14, was in the bin but escaped to get help; and a 15-year-old youth was working in the control room outside but had been in another bin the day before. OSHA issued 24 citations for violations, most of which were determined to be willful or serious. The employer was fined \$555,000, but in a settlement with OSHA agreed to pay \$200,000. The Wage and Hour Division (WHD) found the employer in violation of the agricultural and nonagricultural hazardous occupations orders and assessed fines of \$68,125 in civil money penalties. The violations included employing two minors to climb on top of a 48-foot-high grain bin and to enter the bin; employing and requiring two 14-year-olds and one 15-year-old to work in occupations involving warehousing or transportation; and requiring one minor to operate a power-driven hoisting device. All of the minors worked over the allowed number of work hours. The elevator ceased operations during this time. The news release about this incident can be found on OSHA's Web page at [www.osha.gov/pls/oshaweb/owadisp.show\\_document?p\\_table=NEWS\\_RELEASES&p\\_id=19143](http://www.osha.gov/pls/oshaweb/owadisp.show_document?p_table=NEWS_RELEASES&p_id=19143).

**Case 2**

On November 23, 2009, OSHA fined Tempel Grain Elevators LLP more than \$1.5 million following the death of a 17-year-old worker on May 29, 2009 at the company's grain storage operation in Haswell, Colorado. The youth suffocated after being engulfed by grain in one of the facility's bins. The company also exposed three other youth, a 17-year-old and two 18-year-olds, to these same hazards. In total, the WHD found 77 child labor violation involving 15 minor employees, ages 14 to 17 years for violations under the nonagricultural child labor regulations for performing prohibited

work or operating prohibited hazardous equipment. The fines assessed totaled \$64,487. The company settled a lawsuit, which includes a decision not to hire anyone under the age of 18. The news release for this about this incident can be found on OSHA's Web page at [www.osha.gov/pls/oshaweb/owadisp.show\\_document?p\\_table=NEWS\\_RELEASES&p\\_id=16761](http://www.osha.gov/pls/oshaweb/owadisp.show_document?p_table=NEWS_RELEASES&p_id=16761).

**Case 3**

In 2011, two teenage boys, both age 17, were seriously injured at Zaloudek Grain Company, a grain elevator in Kremlin, Oklahoma, each losing a leg in addition to sustaining other severe injuries. Both are recovering and will have a great deal of rehabilitation ahead of them. Their lives have been changed forever. At their local high schools, both were successful athletes. Working at this facility was a summer job turned life-threatening and life-altering in an instant. While working at the grain elevator, one teen became caught in the auger. In an effort to save him, the other slipped and was trapped as well. OSHA cited the company with four serious violations and proposed penalties of \$21,000. More information can be found at [www.osha.gov/pls/oshaweb/owadisp.show\\_document?p\\_table=NEWS\\_RELEASES&p\\_id=21768](http://www.osha.gov/pls/oshaweb/owadisp.show_document?p_table=NEWS_RELEASES&p_id=21768) The WHD also investigated this incident but the outcome is not available at the time of this publication. Unfortunately, the boys are not eligible for worker's compensation benefits because the employer failed to carry the state-required workers' compensation coverage. In Oklahoma, although the employer violated state law to carry this insurance coverage, the injured workers are not eligible to receive benefits even if the employer violated the law. In this instance, the employer was only fined \$75 by the Oklahoma Department of Labor for failure to comply with its obligations at the time of the incident. As a result of the employer's negligence, the families of both boys must bear *all* medical costs associated with the injuries, including recovery and rehabilitation. To cover these enormous costs, the community has provided support through numerous fundraisers.

Grain silos and grain storage bins are one of the more persistent and tragic hazards on farms and other agricultural services such as commercial grain elevators. Since 1978, Purdue University's Agricultural Safety and Health Program has documented grain entrapment cases in the United States.<sup>42</sup> Unlike some other farm-related injuries that have decreased over time, injuries and fatalities due to grain entrapment has been on the rise.<sup>42</sup> Historically, 70% of documented entrapments occurred on farms exempt from the OSHA Grain Handling Facilities standard (29 CFR 1910.272).<sup>43</sup> During 2010, there were 51 documented grain entrapments, the highest number ever recorded in a single year. Six incidents (12%) involved youth under age 16; all but one resulted in death. Until 2005, 74% of all documented entrapments resulted in death, and in 2010 the percentage of incidents resulting in death decreased to 51%. These numbers do not reflect the full scope of the problem, since there is no comprehensive reporting system. In addition, it should be noted that fatalities in these settings can multiply when others attempt to rescue victims.

After a series of fatal incidents, OSHA contacted approximately 10,000 operators of grain elevators and other storage facilities in 2011 to remind them of their safety responsibilities and alert them to recent incidents involving fatalities among youth and adult workers (see <http://www.osha.gov/asst-sec/Grain-Letter-2-1-2011.html>). Several of these cases are described in Box 2 and demonstrate the need to restrict youth from working in or around these facilities.

### ***LIMITATIONS OF THE AGRICULTURAL CHILD LABOR REGULATIONS***

The proposed changes described in the NPRM include major and important changes needed to protect children working in agriculture. However, not all children are equally protected. The following describes the key exclusions of the current rules under the FLSA.

#### ***Age Groups Not Covered***

- The children of farm owners or operators are excluded.
- Sixteen- and 17-year-olds are excluded based on the amendment in 1966.
- Youth under age 14 may perform the same work as 14- and 15-year-olds and do not have additional protections. For example:
  - Twelve- and 13-year-old children are permitted to perform the same tasks as 14- and 15-year-old youth, except where a student-learner exemption is allowed youth must be at least age 14 to perform those tasks.
  - Children under age 12 are also permitted to work on small farms where the federal minimum wage does not apply and perform the same work activities under the same conditions as those listed for 12- and 13-year-old youth.

#### ***Work Intensity Not Addressed***

The nonagricultural regulations restrict the hours-of-work for 14- and 15-year-old youth during school and nonschool weeks, including times they may start and stop work in the morning and evening and the number of work hours they are permitted per day and per week. Some states also restrict the hours-of-work for 16- and 17-year-olds as well. The agricultural child labor regulations do not restrict work hours for any youth, except that youth may not work during scheduled school hours. The amount of time spent working per day and per week (i.e., work intensity) and how early and late one works can have serious consequences, particularly for youth. There is a great deal of information about the impact of too much work on school performance and educational attainment, sleep, minor delinquent behaviors, and less time spent with family, friends, or engaged in other age-appropriate activities.<sup>19</sup> The United Nations Children's Fund (UNICEF) has defined child labor in terms of excessive hours of work based on age and type of work, which could serve as a possible guide in the United States.<sup>44</sup>

### ***Other Hazardous Working Conditions—Heat Stress***

A significant hazardous working condition in agriculture not addressed by these rules is that of temperature extremes, particularly heat, that can lead to a range of heat-related illnesses and even death. Each year, OSHA estimates that thousands of workers who work outdoors become ill from heat exposure on the job, and many even die.<sup>45,46</sup> Public Citizen submitted detailed comments to USDOL regarding the increased vulnerability of youth to temperature extremes.<sup>47</sup>

In 2008, a 17-year-old farm worker who was also pregnant suffered from heat exposure while pruning grapes and died 2 days later. Two states (California and Washington) have promulgated heat-stress health and safety regulations that protect workers of all ages. These regulations establish work rules based on temperature thresholds that allow for rest breaks and access to shade and water. There is no comparable requirement under federal OSHA regulations. Consequently, a new Ag H.O. addressing heat stress should be considered under the agricultural child labor regulations to protect young workers under age 16. This would also contribute to reducing the total number of hours these youth would be permitted to work in a single day, and reduce other impacts of working long hours.

### ***Changes Needed in the FLSA***

In order to provide some of the protections to minors who are currently excluded, such as older and younger minors, and children of farm owners or operators, legislation passed by Congress is needed to change the FLSA. For instance, the Children's Act for Responsible Employment (CARE Act), HR 2234, was reintroduced in 2011 by Representative Lucille Roybal-Allard (D-CA). Although many feel it does not go far enough, a key provision of the CARE Act, if passed, would increase the age for the Ag H.O.s and extend protections to 16- and 17-year-old youth. However the CARE Act does not include a provision to remove the exemption for children working on farms

owned or operated by their parents.<sup>48</sup> By comparison, the nonagricultural child labor rules the parental exemption does not permit *any* youth under age 18 to perform work prohibited by the HOs.

### ***Enforcement Issues***

The recent regulatory update is a significant step in directing employers toward long overdue improvements for protecting young farm workers. Improved regulations must be accompanied by increased resources and commitment to enforce them. In recent years, the USDOL has made strides to increase its enforcement efforts; however, more improvement is needed. The report released by Human Rights Watch in May 2010, *Fields of Peril: Child Labor in US Agriculture*, identified that the Wage and Hour Division's enforcement efforts have been weak.<sup>49</sup> In a separate evaluation, Human Rights Watch also found that although USDOL increased its number of inspectors from 894 in 2009 to 1035 in 2011, an increase of nearly 16%, agricultural inspections dropped by 9% from 1379 in 2009 to 1259 in 2010. This corresponds to a decrease in child labor violations and monetary penalties assessed.<sup>50</sup>

In addition to strengthened enforcement activities, resources for outreach and education efforts must be allocated to reach employers, youth, parents, teachers, and farm organizations, among others. The combination of enforcement, outreach, and education is critical to protect children working in agriculture and is discussed in detail elsewhere in this issue (Lee et al., "The 2012 Blueprint for Protecting Children in Agriculture—Executive Summary").

States can and do provide additional protections to working youth by promulgating their own rules that may augment or exceed the requirements of the USDOL. Washington State, for example, includes protections for all youth under age 18 under the list of prohibited and hazardous duties, including a number not listed under the federal regulations, and also restricts the hours of work for all youth under age 18.<sup>51</sup>

## RECOMMENDATIONS

Since 1996 the National Farm Medicine Center has focused attention on protecting children in agriculture through an advisory and consensus-building process to develop National Action Plans. The recommendations included specific strategies that are relevant to updating the child labor regulations on a periodic basis, including the most recent proposal. For instance, the initial 1996 National Action Plan, *Children and Agriculture: Opportunities for Safety and Health*, recommended that no child under age 18 be permitted to operate a tractor without rollover protection structures (ROPS) and seatbelts; and that youth must be at least 16 years of age and hold a valid driver's license to be permitted to operate farm vehicles on a public roadway.<sup>52</sup> Although it is a positive step that the current NPRM includes a requirement for ROPS, seatbelts and valid driver's license, it will, if adopted, only address youth under age 16, not anyone under 18 as recommended by the 1996 National Action Plan.

The National Action Plan also recommended adequate funding be provided for the necessary enforcement of the child labor laws and collection of penalties when violations occur. The report also recommended against group- or industry-wide waivers or exceptions, which then ensures a more uniform application of the regulations and the protections they provide. Another identified priority is the need to provide adequate workers' compensation coverage to children and their families for workplace injuries and illnesses including for medical care, and current and future wage loss.

The 2001 Summit on Childhood Agricultural Injury Prevention, an outgrowth of the 1996 Action Plan, further recommended that NIOSH, the Environmental Protection Agency (EPA), and other agencies work together to establish age-appropriate exposure limits for agrochemicals, solvents, noise, and work activities contributing to cumulative trauma injuries, to name a few.<sup>53</sup> The EPA, responsible for the Worker Protection Standard (WPS) on the use of pesticides, should limit those who can mix, load, and apply pesticides with a minimum age of 18. Currently, the WPS

does not restrict these work activities by age either for those who handle pesticides or for reentry intervals for those performing field work activities.

The 1996 and 2001 recommendations still require attention and five additional recommendations are proposed for action, including the following:

1. *Increase and facilitate collaboration to promote outreach and education efforts.*

Develop partnerships and utilize collaborative efforts to reach relevant stakeholder groups and concerned entities, including NIOSH, US Departments of Agriculture, Education, Labor, Health and Human Services, and EPA. Increase outreach and education about the agricultural child labor regulations to teens, parents, teachers, employers, child and youth advocacy groups, and farm worker organizations, particularly immigrant populations and Anabaptist communities.

2. *Increase enforcement efforts.*

Regulations alone are not sufficient to provide the intended protection without a commitment to enforcement and dedicated resources necessary for these activities. Consistent and comprehensive enforcement of regulations is essential. Adequate appropriation of funds for enforcement resources, including sufficient staff and the infrastructure necessary for processing violations and the collection of penalties, must be made available. Oftentimes, however, enforcement leads to "prevention," but only after the fact of a tragic incident. Enforcement measures following a serious or even fatal injury sends a message both to the employer where the incident occurred as well as others who learn from the example it sets. The tragedy at the Tempel Grain Elevators described earlier has led to the employer's decision not to hire anyone under age 18 in the future.

3. *Create parity with the nonagricultural hazardous orders.*

The need to create parity between the nonagriculture HOs and the Ag H.O.s based on risk is not a new idea. There is

no scientific or developmental basis that these industries be regulated differently, particularly when agriculture remains one of the most hazardous industry sectors for adults and youth alike. The FLSA must be amended to provide equal protections to 16- and 17-year-old youth regardless of where they are working. The minimum age for work in all industry sectors should be consistent, such as age 14 as it is for nonagricultural employment.

4. *Remove the parental exemption.*

The ideal of the tradition of children working on their family's farm without the limitations that apply to other working youth has been a costly one with tragic loss of life. The exemption has gradually expanded to include other farms other than where children live, and therefore may lack direct and close supervision of their parents while performing potentially hazardous work. Injury prevention and other public health measures provide direction to keep children out of harm's way in many circumstances in the home and the community; farm settings should be no exception. At a minimum the exemption for children should only extend to work on farms *owned* by a parent. And in those circumstances, the Ag HOs should still apply.

5. *Hold parents accountable.*

Parents are responsible for ensuring the safety of their children at home and in community settings. Likewise, parents or guardians should be held legally accountable for the safety of their children exposed to known hazards on farms owned or operated by them. Throughout their child's developmental milestones until age 18, parents are provided explicit guidance in most circumstances to ensure their child's safety. For instance, use of car seats and seat belts and use of helmets for biking and skiing are either required or encouraged.

State or local child protective services programs hold parents accountable by removing children from parents' custody when egregious circumstances prevail or

when there is a pattern of putting a child in harm's way. An example of an instance when legal sanctions have been used is when a child is left in a car unattended, particularly on a hot day when a fatality occurs. Similarly, there may be instances where consideration should be given to hold parents accountable regarding lapses in safeguarding their child and where serious injury or death occurs in a farm setting, such as when a 7-year-old is killed due to a rollover of the tractor s/he was operating.

The family farm setting blends a combination of health and safety hazards found in the home and work environment, and therefore should be held to the same standards of protection for children exposed to these same hazards elsewhere. Although there are efforts to provide education and guidance to parents regarding age-appropriate activities, providing safe play areas, and promoting child care options, the injury and fatality data on family farms indicate that these measures alone are not protective enough. Children who are not afforded the protections imposed by the restrictions of the regulations are more vulnerable to these hazards, which must be controlled by adults responsible for them.

Parents naturally want to protect their children from harm and this recommendation may initially evoke a negative reaction. Parents are busy juggling many priorities and may not always be aware of the consequences of some of the activities that are a routine part of the home-work environment. This recommendation is intended to promote a dialogue about what has been viewed as a part of certain cultural traditions, and to begin to redefine the unacceptable as when children are permitted to operate dangerous machinery or perform other hazardous work not appropriate for their age and, as a result, are seriously injured or killed in the process.

In the meantime, although not intended for children of all ages, the agricultural child labor regulations can provide guidance for the

minimum level of protection needed for children of specific ages whether or not a regulatory imperative exists. However, they serve as a point of reference or benchmark for adults to make decisions about assignment of safe, appropriate work. The regulations in conjunction with the NAGCAT guidelines that cover younger children and more tasks can create a comprehensive tool for parents. However, it clear that more education and outreach is needed to provide more specific guidance to parents so they may more fully understand the limits that are needed for children who live, work or play in these settings.

### SUMMARY

This article provides historical background information about the child labor regulations in the United States, with an emphasis on agriculture. A comparison with the protections under the nonagricultural child labor regulations and an overview of the proposed changes and improvements was also included. Adequate enforcement efforts and a range of outreach and educational strategies are also necessary to ensure they are successfully implemented.

Information presented here and in other articles in this special issue clearly indicates that protection for young farm workers remains insufficient. In particular, large groups of children are left at risk due to continued gaps in the FLSA that have persisted and allowed to continue since the era of protecting working children began in 1938. Key changes toward this goal require that Congress take action to change the FLSA and eliminate the long-standing disparities that leave large numbers of children unprotected.

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