



Editorial

Youth Injury on Farms: A Complex Problem

Agriculture has consistently been identified as one of the most dangerous industries. In recent years, it has had the highest work-related fatality rate and ranks in the top three industries for the greatest number of work-related fatalities [1–4]. Production agriculture is the industry subsector that is most closely affiliated with the occupation of farming. Because of the role of farms as both a home and a workplace, along with the nature of work done on farms, youth are exposed to many unique hazards. This is often further impacted by the rural location, which can delay prompt medical response and emergency assistance.

The problem of children being injured while living on, visiting, or working on farms has been recognized for several decades [5,6]. Data suggest that about 115 youths under age 20 years die on farms each year, and an estimated 15,876 farm-related injuries (where injury is defined as any condition occurring on the farm operation resulting in at least 4 hours of restricted activity) occur to the same age group. Machinery is the primary source of fatalities; tractors are the single largest identifiable source of fatalities within this category. Fatality rates for young workers in agriculture production were found to be over 3.5 times higher than rates for young workers in all other industries [7,8].

Youth who live on, visit, or work on farms are at increased risk of injury or death owing to hazards that are present in the work environment. In 2012, the National Consumers League listed working in agriculture as one of the five most dangerous summer jobs for teens in the United States; this has been true for at least the past 5 years [9]. These facts are in stark contrast to what many people perceive to be life on the farm for kids: an idyllic life on the farm with children helping their parents, learning the trade of farming, being free to roam the farm, developing a work ethic, and becoming solid citizens. Although many of these things can and do occur, the fact remains that the farm is a workplace where children are exposed to hazards.

In fiscal year 1997, Congress appropriated funding to the National Institute for Occupational Safety and Health (NIOSH) to implement a national Childhood Agricultural Injury Prevention Initiative (CAIPI). The CAIPI consists of three major components: (1) surveillance, (2) research, and (3) information dissemination/

research translation. The National Institute for Occupational Safety and Health uses the United States Department of Agriculture, National Agricultural Statistics Service infrastructure to collect youth farm injury data for surveillance of youth agricultural injuries and targeting research and intervention efforts. The research effort is accomplished through the NIOSH extramural grants program and targeted extramural Request for Assistance announcements under the Childhood Agricultural Safety and Health Research Initiative. Information transfer/research translation activities disseminate surveillance findings and research results to stakeholders and end users through an extramurally funded National Children's Center for Rural and Agricultural Health and Safety (<http://www.marshfieldclinic.org/nccrahs>), a dedicated topic page on the NIOSH Web site for childhood agricultural injury prevention (<http://www.cdc.gov/niosh/topics/childag>), and NIOSH publications and manuscripts in technical journals.

From 1997 to 2011, the NIOSH CAIPI research component funded 35 research grants, which resulted in 117 publications and 32 published abstracts. For calendar year 1998, a United States Department of Agriculture/NIOSH survey estimated that 37,774 youths under age 20 years who lived on, worked on, or visited farms were injured [10]. In 2009, the number of injuries had declined to 15,876, a 58% reduction. Injury rates declined 57%, from a rate of 16.6/1,000 farms to 7.2/1,000 farms. For household youths living on farms, the rate of injuries declined by 60% (from 18.8 injuries/1,000 household youths to 7.5/1,000 household youths) [11]. In the current issue of the *Journal of Adolescent Health*, Jinnah and Stoneman's [12] original research supports the important role that fathers may have as teachers and role models for youth working safely on family farms. In addition, the study provides evidence that farm fathers may change their own safety behaviors to protect their children.

A national program such as the NIOSH CAIPI can be helpful in supporting, developing, and identifying prevention programs to address hazardous work for children on farms. The article by Jinnah and Stoneman [12] is one example of an educational program that holds promise and could be replicated to determine whether the results are transferable and generalizable to a larger audience. The NIOSH CAIPI is finalizing a 15-year summary

See Related Article p. 255

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of research grants funded by NIOSH, which is expected to be available on the NIOSH Web site in the first half of 2014. This document provides additional examples of educational and youth injury prevention projects that could be useful to implement and replicate.

Progress has been made in reducing both the number and rate of childhood agricultural injuries, but they remain too high. There is still work to be done on this important and complex problem.

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