

CHILDREN AND AGRICULTURE:

OPPORTUNITIES
FOR SAFETY
AND HEALTH

A National Action Plan

CHILDREN AND AGRICULTURE:
OPPORTUNITIES FOR SAFETY AND HEALTH

**A NATIONAL
ACTION PLAN**

A report from the National Committee
for Childhood Agricultural Injury Prevention.

Prepared by the National Farm
Medicine Center, Marshfield, WI

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Five-year-old girl's arm severed in farm accident

Rochester, Minn. (AP)

A 5-year-old Preston girl was in fair condition after her arm was torn off by a piece of machinery on her family's farm. The girl was taken to St. Mary's hospital by helicopter after her hand got caught in a feed auger Sunday afternoon, July 10. Hospital officials said Monday they did not have the family's consent to comment further on her condition or to say whether the arm was reattached. The father was operating the auger and the girl was playing nearby when she apparently put her hand inside the machine, said Fillmore County Sheriff. He said authorities used an acetylene torch to cut the arm out of a metal feed shoot, then transported it to the hospital packed in ice. One in five farm families experience a serious work-related injury each year, according to John Shutske, farm safety and health specialist with the state agricultural extension service.



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STAKEHOLDERS

Protecting children from injury requires the involvement of many adults. Stakeholders are individuals who have something to gain and a role to play in protecting children from agricultural injuries. Eight general categories of stakeholders are identified for implementing this national agenda. It is likely that many individuals fall into more than one category. In most instances, only the primary stakeholder groups were designated, but other groups may also have an important role to play. Specific recommended actions for each group are noted by a dot (●) in the margin adjacent to the recommendations. Stakeholder groups include:

FARM/RANCH OPERATORS AND FARM ORGANIZATIONS

Farm/ranch owners and operators, farm workers, farm worker representative organizations, and farm trade advocacy or commodity organizations

YOUTH AND COMMUNITY GROUPS

Not-for-profit organizations involved in service at local levels such as 4-H, FFA, Farm Safety 4 Just Kids, and National SAFE KIDS Campaign

RESEARCHERS AND ENGINEERS

Scientists and others with expertise in injury control, human factors, behavioral science, social science, industrial hygiene, ergonomics, and related fields

AGRICULTURAL BUSINESS

Commercial enterprises, including insurance providers, manufacturers, suppliers, and others

HEALTH CARE PROVIDERS

Physicians, nurses, public health professionals, and others providing health care services

POLICY MAKERS

Legislators and others at a local, state, and federal level who develop and implement a course of action

EDUCATORS

Persons trained in teaching, including classroom, patient, and community instruction

MEDIA

Journalists, public relations specialists, and others in both agricultural and general media who use print, audio, and visual communication systems to disseminate information

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NATIONAL COMMITTEE FOR CHILDHOOD AGRICULTURAL INJURY PREVENTION

MAJOR FUNDING

Health Resources and Services

Administration, Maternal and
Child Health Bureau

National Farm Medicine Center

National Institute for Occupational Safety
and Health

ADDITIONAL SUPPORT

The agencies, agribusinesses, organizations, universities, and farm households whose members served on this committee.

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SUPPORT FOR CHILDHOOD AGRICULTURAL INJURY PREVENTION

Many individuals and groups from both the public and private sector have offered encouragement for the development and implementation of this action plan to protect children from unnecessary harm. Their support does not represent agreement with each specific recommendation, but rather their encouragement for an overall national strategy.

We are very grateful for the support of:

- American Academy of Family Physicians
 American Academy of Pediatrics
 American College of Preventive Medicine
 American Farm Bureau Federation
 American Medical Association
 American Nurses Association
 American Public Health Association
 American School Health Association
 American Soybean Association
 Association of Farmworker Opportunity Programs (AFOP)
 Bureau of Primary Health Care Migrant Health Program
 C. Everett Koop Institute–Dartmouth
 California Center for Childhood Injury Prevention
 Cal Poly University (W.K. Kellogg Arabian Horse Center)
 Cargill
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 Children’s Safety Network:
 Adolescent Violence Prevention Resource Center
 Economics and Insurance Resource Center
 Injury Data Technical Assistance Center
 National Injury and Violence Prevention Resource Center – EDC
 National Injury and Violence Prevention Resource Center – NCEMCH
 Rural Injury Prevention Resource Center
- Colorado State University (Department of Environmental Health; High Plains and Intermountain Center for Agricultural Health and Safety)
 Consumer Product Safety Commission
 Deere & Company
 Defense for Children International-USA
 Emergency Nurses Association
 Equipment Manufacturers Institute
 Farm Labor Organizing Committee
 Farm Safety 4 Just Kids
 Harborview Injury Prevention and Research Center
 Harvest States Cooperatives
 Health Resources and Service Administration, Maternal and Child Health Bureau
 Indian Health Service
 Johns Hopkins School of Hygiene and Public Health (Center for Injury Research and Policy)
 Louisiana Farm Bureau Federation
 Marshfield Clinic
 Mayo Clinic (Department of Pediatrics)
 Migrant Clinicians Network, Inc.
 National Association of County and City Health Officials
 National Association of Wheat Growers
 National Center for Injury Prevention and Disease Control (Division for Unintentional Injuries)
 National Consumers League
 National Easter Seal Society
 National Farm Medicine Center
 National Farmers Union
 National FFA
 National FFA Alumni Association
 National Grange
 National Highway Traffic Safety Administration
 National Institute for Farm Safety
 National Institute for Occupational Safety and Health
 National Public Service Research Institute (Safety and Risk Policy Program)
 National Rural Health Association
 National SAFE KIDS Campaign
 National Safety Council
 National School Health Education Coalition
- National Young Farmers Educational Association
 New York Center for Agricultural Medicine and Health
 Office of Rural Health Policy
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 United States Department of Agriculture Cooperative State Research, Education, and Extension Service
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 University of Kentucky (Southeast Center for Agricultural Health and Injury Prevention; Department of Pediatrics)
 University of Minnesota (Agricultural Engineering Department)
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 Yakima Valley Farm Workers’ Clinic
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Four-year-old fatally injured

Barren Reporter

A four-year-old Barren County child was fatally injured Sunday afternoon when he fell from a farm tractor. The boy was pronounced dead at the scene of the accident which occurred just east of Cave City.

The Barren County Coroner said the accident occurred around 5 p.m. Swift said the child was riding on the fender of the farm tractor when he fell and was run over by the tractor.


The tractor was being driven by the child's 10-year-old uncle at the time of the accident.

Boy dies in farm accident

Eagle Bend, Minn.

A 9-year-old Eagle Bend boy was fatally injured when he was caught in a power takeoff shaft on a silage wagon, the Todd County sheriff's office said.

The accident happened about 6:30 p.m. Tuesday. The boy was pronounced dead at the Tri-County Hospital in Wadena.



**WHAT WOULD THE CHILDREN
EXPECT FROM THOSE OF US
WITH THE POWER TO
MAKE THEM SAFER?**

They would expect that...

We would cherish with them the beauty of the American countryside – the joy they feel on a long walk in the woods or in an open field. But they would expect us to note that the same open spaces that liberate can also isolate – so that sometimes their voices are not heard.

They would expect that...

We would seek to eliminate the sadness and fatigue that they feel when they are asked to work too hard, too soon. But they would also want us to rejoice with them when they experience the sense of mastery, accomplishment, and contribution that can come from working alongside an adult whom they respect.

They would expect that...

We would be their voice with policymakers when they don't have one – when their numbers are too small, their homes are too remote, their pockets are too empty, or their protection too controversial.

They would expect that...

We would honor the traditions of rural families and communities, but that we would call them into question when they are incompatible with the safety and well-being of children. Then they would expect that we would work with their families and communities to build better, stronger, safer traditions – traditions that build as the first priority, the preservation of children, not the preservation of history.

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Nancy B. Young

INTRODUCTION

This report is about children, many of whom will enjoy the benefits of visiting or living on one of the two million farms across the United States. This report is also about the estimated 100,000 children each year who suffer a preventable injury associated with production agriculture. How do we safeguard their future? Across our nation, we are witnessing a rapid industrialization process in production agriculture. The 1992 Census of Agriculture reports a significant shift in patterns of farm ownership, size, and production.¹ While some agricultural settings undergo rapid changes influenced by factors such as the global economy and new technologies, other settings will maintain traditional farm practices. Regardless of the geographic region or type of agricultural enterprise, our top priority must be to ensure that children are not the forgotten victims of preventable injuries.

Agriculture has been ranked by several sources as having one of the highest occupational death rates in the United States.²⁻⁴ It is one of the few occupational settings where children may actively participate in work typically performed by adults. Previous efforts to minimize the toll of agricultural injuries have had limited success. We must develop, implement, and evaluate strategies that incorporate education, engineering, and public policy, if we hope to make a significant impact on childhood agricultural injury prevention.⁵ These strategies should be guided by the principle that *all children, regardless of their parents' ethnicity, socioeconomic status, and relationship to farm ownership, deserve equal protection from agricultural injuries.*

CHILDREN AT RISK

In 1991, there were 923,000 children under 15 years of age and 346,000 children 15–19



All children, regardless of their parents' ethnicity, socioeconomic status, and relationship to farm ownership, deserve equal protection from agricultural injuries.

years of age residing on United States farms and ranches.⁶ Another 800,000 children lived in households of hired farm workers and may work on farms with their parents.⁷

Additionally, many children, whose parents are not farmers or farm workers, will visit and work on farms. Committee recommendations were designed to protect these nearly two million children regardless of their parents' relationship to the farm.

STATUS OF PROBLEM

Children experience fatal and nonfatal unintentional injuries associated with production agriculture in the United States. While children account for about 20 percent of all farm fatalities, studies have reported that they comprise a higher proportion of the total number of nonfatal farm injuries.⁸⁻⁹ An estimated 27,000 children under the age of 20 years who live on farms and ranches are injured each year.¹⁰ This figure does not include children who visit or work on non-family farms. The total injury toll has been estimated at greater than 100,000 annually.¹¹

The primary agents of fatal and nonfatal injuries to children on farms include tractors, farm machinery, livestock, building structures, and falls.^{8,9,12,13} Children are also exposed to many of the same environmental hazards as those experienced by adult workers, including pesticides, volatile organic compounds (fuel), noxious gases, airborne irritants, noise, vibration, zoonoses, and stress. Only about 5 percent of farms in this country are covered by safety regulations of the Occupational Safety and Health Act (OSHA). On the remaining 95 percent of farms, the owner/operator is responsible for assessing acceptable levels of risk for adults and children on that farm. Unfortunately, little scientific evidence is available to determine acceptable levels of hazardous exposure to children.



Therefore, neither OSHA standards nor farm operators are prepared to provide children the same level of protection from occupational hazards in production agriculture as they receive in other occupations.

PURPOSE

NATIONAL COMMITTEE FOR CHILDHOOD AGRICULTURAL INJURY PREVENTION is a public and private sector initiative. Committee members strived to generate specific, targeted recommendations for research, education, policy, and evaluation, with the goal of reducing unintentional agricultural injuries to children younger than 18 years. These recommendations were based upon epidemiologic evidence of the current injury problem, as well as recommendations disseminated through several reports, including: *Healthy People 2000: National Health Promotion and Disease Prevention Objectives*;¹⁴ *Injury Control in the 1990s: A National Plan for Action*;¹⁵ *Childhood Agricultural Injury Prevention: Issues and Interventions from Multiple Perspectives*;¹⁶ *Agriculture at Risk: A Report to the Nation*,¹⁷ and *Child Labor in the 90s, How Far Have We Come?*¹⁸

METHODS

The complexity of the problem of childhood agricultural injuries warranted an interdisciplinary approach as well as a multiphased process. Over a 16-month period, the 42 members of the National Committee for Childhood Agricultural Injury Prevention reviewed relevant recommendations from previous reports, developed new recommendations based on current injury data and other scientific evidence, and refined and prioritized recommendations to be clearly understood and acted upon by relevant individuals and




Children account for about 20 percent of all farm fatalities. The primary agents of fatal and nonfatal injuries to children on farms include tractors, farm machinery, livestock, building structures, and falls.

agencies. The method used to generate consensus on recommendations involved: (1) teleconference meetings; (2) individual reviews of draft documents; (3) synthesis of reviewers' comments; (4) refinement of recommendations through six categorical working groups; and (5) formal committee meetings. Thirteen prominent farm organizations were personally visited and another 14 were contacted by telephone by representatives of the committee. Farm organizations and members of other groups were encouraged to review proposed recommendations and provide feedback regarding their merits and problems. More than 150 copies of proposed recommendations were disseminated among their members. This feedback served as the basis for content and priority setting of the final report.

In order to move committee recommendations beyond the status of words without actions, committee members have joined forces with many individuals and agencies. Together, they have made a commitment to ensure this report is received and understood by parents, agricultural businesses, educators, farm and ranch operators, farm organizations, farm workers, health care providers, media, policy makers, researchers, engineers, youth groups, community groups, and others who share responsibility for actively protecting children from agricultural injuries.

This report contains the goal, 13 objectives, and 43 recommended action steps proposed by committee members. The sidebar adjacent to each objective provides information that explains issues presented by committee members and reviewers. Readers are encouraged to refer to the glossary for an explanation of terms used in this report.





Farm accident kills 9-year-old girl. Families, teachers, classmates cope with tragedy

Wausau Daily Herald

Teachers at Grant Elementary School struggled this morning to help students cope with the Wednesday evening death of a 9-year-old classmate. The girl died Wednesday night while helping her grandfather harvest corn at her family town of Hewitt farm. She was crushed to death in what the Marathon County Coroner called an unusual and tragic accident. The girl was helping her grandfather unload corn at her home. He had parked a wagon full of corn next to the family silo and was blowing corn from the wagon into the silo when the accident happened. Apparently, she was on or very close to the wagon when the load shifted inside and the box tipped off its frame and basically crushed her. She died of suffocation. Marathon County sheriff deputies said the ground on which the wagon was parked sloped away from the silo and was soft, perhaps soft enough to allow the wagon to tip over.



Front-end loader accident leaves 12-year-old dead

The Grand Rapids Press

Relatives of a 12-year-old killed Saturday while riding on a farm vehicle were hesitant to talk about the incident because of the suffering of not only his family but also of the young driver whom police say made a fatal mistake. The boy was crushed shortly before 3 p.m. Saturday while riding on a front-end loader on a dairy farm near Dort. He was caught between the cab and hydraulic arms of the vehicle when a friend, who had been driving, lowered the basket on the front-end loader to pass beneath tree limbs, according to Allegan County deputies. The boy alternated home locations between Leighton Township and San Benito, Texas.

With the goal of maximizing the safety and health of all children and adolescents who may be exposed to agricultural hazards, the following objectives and recommended actions were developed.

3-year-old dies in farm accident

River Falls Journal

A River Falls Township 3-year-old boy died from head injuries sustained when he fell from the cab of a tractor driven by his father. The accident occurred shortly before 8:30 p.m. Thursday, Nov. 9.

The boy was pronounced dead at the River Falls Area Hospital. He fell from an Allis Chalmers tractor in a cornfield near a farm in River Falls. According to Pierce County Sheriff's Department, the child fell in a field about a half mile south of some farm buildings. The father was picking corn and pulling a two-row corn picker and gravity box.

It was not known whether the boy accidentally unlatched the door handle before he fell, but it is believed he was pushed along by the right rear tire of the tractor.

Sorenson said the child's father brought the boy into a farm building before the River Falls Area Ambulance Service arrived. A Life Link helicopter crew was dispatched, but did not transport the youngster.

Authorities wouldn't say if blood alcohol tests were administered to the child's father, but it is routine procedure to do those tests as part of the investigation of a death. No charges had been filed at the Pierce County District Attorney's Office, and the matter remains under investigation.

7-year-old boy killed by cow on dairy farm

Journal Sentinel

A farmer whose 7-year-old grandson was killed by a cow said Wednesday the incident happened so fast he couldn't react. The boy was helping his grandfather with chores Tuesday evening on his family's northwestern Wisconsin farm when a cow head-butted the boy and killed him.

The boy was thrown over a wall and landed on the frozen concrete floor of a feed barn about 6:45 p.m. He was taken to Flambeau Medical Center in Park Falls, where he died a short time later.



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 EDUCATORS
 POLICY MAKERS
 HEALTHCARE PROVIDERS
 AGRICULTURAL BUSINESS
 RESEARCHERS AND ENGINEERS
 YOUTH AND COMMUNITY GROUPS
 FARM/RANCH OPERATORS AND FARM ORG.

1.

Several federal agencies engage in selected activities promoting child safety or farm safety, but there is not a coordinated effort to prevent childhood agricultural injuries. Interaction among federal agency representatives led to the agreement that the National Institute for Occupational Safety and Health (NIOSH), Centers for Disease Control and Prevention should assume leadership for coordinating such efforts. NIOSH should ensure its program activities are guided by an Advisory Board composed of representatives of key federal agencies, farm operator/farm worker organizations, and agribusiness. **Note:** NIOSH is not an enforcement agency. Therefore, NIOSH may encourage (but not require) the implementation of selected recommendations.

Establish and Maintain a National System for Childhood Agricultural Injury Prevention

- A. Congress should designate the National Institute for Occupational Safety and Health (NIOSH) to provide leadership for childhood agricultural injury prevention in the United States. This will include leadership in the coordination of national, regional, and state policies and programs.
- B. NIOSH should develop, implement, monitor, and evaluate a comprehensive childhood agricultural injury prevention program involving injury data collection, education, policy, research, and other initiatives that involve linkages across federal, regional, and state levels.
- C. NIOSH should enhance current and foster new childhood agricultural safety and health promotion activities among relevant existing public agencies and private sector organizations.

2.

This public/private sector initiative builds on current trends of shifting accountability from the government to the grass-roots level. To implement this national action plan, an estimated \$6.8 million is needed annually until objectives are achieved. With a \$5 million congressional allocation to NIOSH, another \$2 million of the funding would be provided by foundations, agribusinesses, and other private sector groups. NIOSH funds would primarily be dispersed through competitive grants to researchers across the US. An Advisory Board would guide implementation of the action plan and ensure that NIOSH justify continuation through comprehensive evaluation and documentation of progress.

Ensure That Childhood Agricultural Injury Prevention Programs are Supported With Sufficient Funding and Cooperation From the Public and Private Sectors

- A. Congress should allocate \$5 million to NIOSH for implementing a national plan for childhood agricultural injury prevention initiatives including research, public education, professional training, community and family services, and policy enforcement.
- B. Foundations, corporations, and other private sector groups and individuals should allocate funds for innovative childhood agricultural injury prevention initiatives.
- C. Public agencies and private sector foundations, corporations, associations, and other groups should be partners in efforts to plan, implement, and evaluate childhood agricultural injury prevention initiatives.

Funding of farm safety programs by private sector groups may reap benefits such as customer satisfaction, reduced risk of litigation, marketing, leveraging of services, and corporate goodwill.



3.

Many committee members and farm organization representatives stated that the establishment of work guidelines is the foundation upon which to build all other strategies. These guidelines should include work time restrictions and emphasize that children's work should not interfere with their ability to attend school and concentrate on studies. The consensus-building process for developmentally- and age-appropriate guidelines for children's agricultural tasks will involve efforts of farm parents, along with specialists in agricultural safety, child development, pediatrics, human factors, ergonomics, industrial hygiene, injury control, migrant issues, and agricultural journalism.

Establish Guidelines for Children's and Adolescents' Work in the Industry of Agriculture

- A. Develop, test, and modify developmentally-appropriate (see glossary) guidelines for children's participation in agricultural work, based on research results as well as psychological and physical development theory and principles. This effort should be conducted through a consensus-building process involving federal agencies and private sector representatives.
- B. Develop and evaluate age-appropriate (see glossary) guidelines for work practice standards of adolescents employed in agricultural work. This effort should be conducted through a consensus-building process and should serve to guide relevant public policy.

4.

The annual National Farm Safety and Health Week is held the third week of September under the leadership of the National Safety Council's Agricultural Division. This one week event should incorporate multiple strategies to reach parents and employers in all agricultural settings. Committee members stressed that there should be a public awareness strategy that spans beyond the one week event. Interdisciplinary and multi-agency efforts should build on successes of other public health and safety campaigns. Where possible, media advocacy (see glossary) should be used to influence and demonstrate methods to protect children from harm.

Ensure That the Public is Aware of General Childhood Agricultural Safety and Health Issues

- A. Use collaborative efforts of multiple agencies and organizations to develop, implement, and evaluate a national public education strategy directed at influencing knowledge, attitudes, and practices of individuals and groups to protect children and adolescents from agricultural injury.
- B. Use culturally-sensitive strategies to maximize the impact of National Farm Safety and Health week on the knowledge, attitudes, and practices of parents whose children and adolescents may be exposed to agricultural hazards.





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5.

Accurate injury statistics are necessary to detect trends in types, frequency, and severity of injuries. Presently, there are no national reports of childhood agricultural injuries. NIOSH should coordinate efforts of agencies and researchers to develop consistent, valid, and reliable data. This coordination may involve convening a conference or using other methods to achieve consensus. Ultimately, a national database will provide insight into measures that have been successful in protecting children from harm.

Establish and Maintain a Comprehensive National Database of Fatal and Nonfatal Childhood Agricultural Injuries

- A. Achieve consensus on terms, models, and methods, including a minimum data set (see glossary) for securing data on childhood agricultural injuries.
- B. Address deficiencies in E codes (see glossary) that depict childhood agricultural injuries and implement systems for continued refinement.
- C. Continually improve and evaluate data collection and analysis of fatal and nonfatal childhood agricultural injuries, including underlying conditions and preventable risk factors.

6.

Numerous areas for further research were considered, but only selected topics are stated. Further information on the societal and economic costs of childhood agricultural injuries is needed, to make accurate comparisons with other types of childhood injuries and diseases. Research on children's role in farm work should not be limited to negative effects. It is important to know the positive effects of children's work in low-risk farming activities in order for parents and employers to make well-guided work assignments. Research studies should consider the impact of adolescent's work in different geographic regions (e.g., blueberry picking in Maine, tomato harvesting in California, hay baling in Wisconsin). Although education has been used extensively to promote safety for children, research is needed to identify the extent to which other approaches (e.g., engineering, incentives, policy) may provide additional protection from harm. Studies should be funded by foundations, industries, and government. Research results should be used to guide proportional funding of interventions.

Conduct Research on Costs, Risk Factors, and Consequences Associated With Children and Adolescents Who Participate in Agricultural Work

- A. Conduct studies to estimate the societal and economic costs and consequences associated with childhood agricultural injury.
- B. Conduct studies of factors affecting protection of children and adolescents from agricultural injury. These should include identification of barriers (see glossary), innovative methods for removing barriers, and effective methods to influence positive safety behaviors of farm and ranch owners/operators, farm workers, parents, caregivers, and manufacturers, as well as children and adolescents.
- C. Conduct assessments of short- and long-term physical and psychological outcomes related to children's and adolescents' participation in different types of agricultural work.
- D. Conduct physical assessments of children and adolescents who have been exposed to agricultural hazards such as agricultural chemicals, organic dusts, toxic gases, nitrates, volatile organic compounds, oils, and solvents.
- E. Conduct studies of the impact of noise, vibration, cumulative trauma (see glossary), and other work-induced health hazards on children and adolescents participating in agricultural work.
- F. Conduct studies to determine the relative effectiveness of education, engineering, voluntary incentives, and mandatory standards on childhood agricultural injury reduction.



7.

History has shown that safety education does not always result in injury reduction. In fact, there is evidence that some well-intended safety programs result in increased injuries. Education programs should be assessed using consistent and stringent methods to determine whether they truly achieve the desired result of injury prevention. Standards for evaluation of common programs (e.g., tractor safety certification) should be established and utilized. Evaluation results should guide decisions that would restrict funding to only those programs that have demonstrated success in reducing risk of injury.

Use Systematic Evaluation to Ensure That Educational Materials and Methods Targeted Toward Childhood Agricultural Safety and Health Have Demonstrated Positive Results

- A. Establish guidelines and criteria to evaluate childhood agricultural safety and health training materials and methods.
- B. Conduct rigorous evaluations to determine the effectiveness of education and training intended to influence agricultural safety and health behaviors among children and adolescents.

8.

Although most family farm and ranch owners/operators and farm workers recognize potential dangers to children, other adults whose children visit or work on farms lack experience to judge relative risks of injury. Information regarding protection from harm, federal and state child labor laws, and work safety standards should be readily available for public use.

Ensure That Farm and Ranch Owners/Operators, Farm Workers, Parents, and Caregivers Understand Relevant Agricultural Safety and Health Issues That Pertain to Children and Adolescents

- A. Encourage state agencies and delivery systems to use region-specific and culturally-sensitive agricultural safety and health curricula in kindergarten through high school. Empower youth organizations to enhance and expand learning opportunities related to agricultural safety and health.
- B. Provide public education for parents and employers as well as vocational training to adolescents regarding developmentally- and age-appropriate agricultural work tasks as well as human safety and health risks associated with agricultural hazards.
- C. Facilitate the provision of “first on the scene” (see glossary) training for owners/operators, farm workers, family members, and caregivers. Include training that is specific to childhood agricultural trauma.
- D. Encourage qualified rural health care providers, educators, and safety professionals to provide training for youth-serving agencies. Training should include childhood agricultural injury prevention and health promotion within the scope of their program activities.





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9.

In order for rural safety and health professionals to gain the trust of the agricultural community, they should strive to understand the driving forces and agricultural practices that influence behaviors and conditions associated with injuries on farms and ranches.

Ensure that Rural Safety and Health Professionals Understand the Issues Relevant to Children and Adolescents Exposed to Agricultural Hazards

- A. Enhance professional activities addressing childhood agricultural injury prevention issues through networking among injury control and health promotion professionals.
- B. Encourage the inclusion of childhood agricultural safety issues and agricultural operating procedures within agricultural safety and health courses offered in colleges and universities.
- C. Promote and support childhood agricultural safety and health inservice training for educators, injury control professionals, and health care providers dealing with agricultural populations.

10.

People may be influenced to adopt safe and healthy lifestyles when there is a financial or social incentive. For example, some insurance companies provide reduced health insurance premiums for non-smokers. If a financial incentive existed, parents and farm operators may avoid having children present in dangerous farm settings. Such incentives may be provided by insurers or through tax credits (e.g. tax deduction for cost of child care). Research is needed to identify the types and levels of incentives that are most likely to influence protection of children.

Protection of children from agricultural hazards should emphasize avoidance, elimination, or modification of the hazard. When these options are not possible, children's presence in hazardous work should involve the use of personal protective equipment.

Influence Adult Behaviors Which Affect Protection of Children and Adolescents Through the Use of Incentives and Adoption of Voluntary Safety Guidelines

- A. Encourage insurers, manufacturers, cooperatives, and others to develop and evaluate innovative programs for farm and ranch owners/operators, farm workers, parents, and caregivers that enhance protection of children and adolescents through the use of incentives (see glossary).
- B. Establish safety and environmental guidelines to protect bystander children from agricultural hazards.
- C. Encourage parents, supervisors, and employers to avoid involvement of children in tasks that are not developmentally- or age-appropriate.
- D. Encourage manufacturers and suppliers to provide appropriate personal protective equipment (see glossary) for children and adolescents involved in developmentally- or age-appropriate work as permitted by law.
- E. Encourage parents, supervisors, and employers to require children and adolescents who are involved in developmentally- and age-appropriate work to adhere to safety guidelines, including use of personal protective equipment.



11.

All children deserve equal access to agricultural safety information. 4-H, FFA, and other organizations should reach out to include children of migrant and seasonal farm workers into their groups.

Rural community-based child care options are needed, especially during periods of peak agricultural production when children are most likely to be injured.

Provide a Protective and Supportive Environment for Children Exposed as Bystanders to Agricultural Hazards

- A. Design, implement, and evaluate community-based programs to enhance the safety and well-being of children who may be exposed as bystanders to agricultural hazards.
- B. Plan, implement, and evaluate structural and machinery design options to provide a protective environment for children at the farm work site.
- C. Facilitate systems and resources for migrant and seasonal farm workers to resolve safety and health practice barriers involving children.

12.

Research has shown the use of rollover protective structures (ROPS) and seat belts can significantly reduce agricultural fatalities. At a minimum, ROPS and seat belts should be mandated for operators until they reach adulthood. There is no evidence to suggest that children younger than 16 years of age have the decision-making skills needed to operate a tractor. Since there is no other industry that allows children younger than 16 years to operate motor vehicles, the standard used for automobile licensure and operating privileges should be applied to tractor operation.

Many family farmers expressed concern that, if implemented, these recommendations would cause an economic burden and might disrupt current work practices on family farms. They indicated that retrofitting old tractors to meet safety standards may be unaffordable and sometimes impossible. Some farmers believe that children raised on farms can safely operate tractors on low-traffic public roads prior to age 16 years.

Establish Uniform Standards That Address Protection of Children and Adolescents From Agricultural Occupational Hazards

- A. Establish and monitor age-appropriate child labor standards to reflect current agricultural technology, production practices, and safety and health information.
- B. Mandate the restriction of individuals under 18 years of age from operating tractors without seat belts and rollover protective structures (ROPS). A one-year grace period should be established (from the effective date of this standard) during which time tractor operators should be informed of this new standard and be encouraged to retrofit tractors.
- C. Mandate the restriction of individuals under 18 years of age from operating farm vehicles on public roads unless such minor is at least 16 years of age, has a valid motor vehicle license, and is a certified graduate of a state-approved tractor and farm vehicle safety training program.
- D. Restrict children and adolescents from riding on or in non-approved passenger areas of motorized vehicles and machinery/implements.





Fold out back page of this report to reveal the stakeholders key.

MEDIA
EDUCATORS
POLICY MAKERS
HEALTHCARE PROVIDERS
AGRICULTURAL BUSINESS
RESEARCHERS AND ENGINEERS
YOUTH AND COMMUNITY GROUPS
FARM/RANCH OPERATORS AND FARM ORG.

13.

A last resort for protecting children from agricultural hazards is the enforcement of laws and use of penalties. Ideally, adults would keep the safety of children as a top priority, and these measures would never be warranted.

However, the legacy of our country includes inappropriate child labor and preventable trauma. Therefore, active and funded enforcement of safety policies is intended to serve as a preventive legal technique that will motivate adults to accept the importance of their role in preventing childhood agricultural injuries. Of all the issues reviewed by committee members, these enforcement and enactment recommendations generated the most discussion, controversy, and concern. In the end, the committee members (as well as many other reviewers of proposed recommendations) accepted the fact that children, regardless of their relationship to a farm or an employer, deserve protection from unnecessary risk.

Increase Adherence to Child Labor Laws Through Active and Funded Enforcement Including the Use of Penalties

- A.** Increase the funding level and number of personnel for enforcement of child labor laws for agriculture and the collection of penalties for illegally employing children and adolescents in production agriculture. Monies collected from fines should be used to enforce laws and improve voluntary compliance through public education, outreach, and other safety interventions.
- B.** Promote the application and enforcement of all federal and state child labor laws and related farm safety and health standards, without group or industry-wide waivers or exceptions. Such waivers or exceptions should be considered only on an individualized, case-by-case basis.
- C.** Promote the welfare of children involved in farm labor within each state's workers compensation system. Within these systems, ensure that those children injured during their performance of legal farm labor are compensated by a wage replacement award that adequately considers potential future earnings. For cases where covered children are injured while working in violation of federal or state law, the wage replacement benefit should be increased to twice the statutory level, the additional cost to be paid by the employer/insured.

Conclusion

This report represents a summation of strategies for reducing the frequency and severity of childhood agricultural injuries. The proposed national agenda provides an opportunity for us to systematically ensure health and safety for children across our country. So let us imagine that the precious voices of children are calling to us – to exercise wisdom, moral principles, and determination to protect each of them from harm. The children would expect that much of us.



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GLOSSARY

Accident: [Note: The term *accident* is NOT used by injury specialists.] An unexpected and undesirable event that occurs by chance. Injuries are NOT accidents. “If injuries were indeed random, unpredictable acts of God, it would make little sense to talk about preventing them (other than through prayer). But injuries can be scientifically understood and societally controlled by modifying physical agents, environments, and behaviors. Rational counter-measures can be developed... injuries are preventable.” (Foege WH. Introduction: Injuries Are Not Accidents. *Law, Medicine & Health Care* 1989 Spring [17]:5.)

Adolescents: For purposes of this document, individuals from the age of 13 through 17 years.

Age-appropriate Work: Work activities that are suitable based upon physical and cognitive capabilities deemed to be typical by age demarcations. Age-appropriate work standards are required for purposes of labor law enforcement.

Agriculture: The industry that involves the production of crops and livestock (farming) plus agricultural services, forestry (excluding logging), and fishing.

Agricultural Hazard: An existing or potential condition on or off the agricultural work site, directly related to agricultural operations, that is associated with a high risk of physical or psychological harm. Examples of common agricultural hazards are rotating machinery parts, manure storage ponds, airborne contaminants in livestock confinement buildings, and pesticides.

Agricultural Injury: Injury occurring on the agricultural work site directly related to agricultural operations, including injury to bystanders; or an injury occurring off agricultural property that involves agricultural work, such as a tractor collision on a public road. For purposes of this document, this definition also encompasses harm caused by exposures to hazards such as pesticides, volatile organic compounds, dusts, noise, and repetitive motion.

Barrier: A real or perceived physical, psychological, or environmental factor that hinders or restricts a person’s actions. Examples include economic hardship, tradition, cultural beliefs, weather.

Bystander: A person who is present at or near an agricultural work site without participating in the work.

Childhood: The period of life from infancy to adulthood. For purposes of this document a broad definition is used to encompass ages 0 through 17.

Children: Individuals in the age range of 0 through 12 years.

Cumulative Trauma: Bodily injury from mechanical stress which develops gradually over weeks, months, or years from repeated stress on a particular body part.

Developmentally-appropriate Tasks: Tasks that are suitable based on demarcations noting achievement of physical and psychological maturity. Developmentally-appropriate task guidelines are applicable outside of enforceable work standards.

E codes: Codes for external cause of injury that provide a systematic way to classify information put into the medical records by hospital staff.

Exposure: An event in which a person may come in contact with an object, substance, or environment that may result in injury or disease.

Farm: Any place from which \$1,000 or more of agricultural products were produced and sold, or normally would have been sold during the census year (standard United States Department of Agriculture definition).

Farm Vehicle: Any motorized vehicle used for agricultural operations either on or off the agricultural work site. This definition includes, but is not limited to, tractors, trucks, automobiles, and all-terrain vehicles.

Farm Worker: A person who is employed by a farm owner to conduct agricultural work. This term includes migrant and seasonal laborers.

First on the Scene: Training for farm families and workers that incorporates appropriate and safe decision-making when discovering a farm injury victim, reporting an emer-

gency, attempting emergency first aid, and taking other actions while waiting for emergency services to arrive.

Hazard: Any existing or potential condition which, by itself or by interacting with other variables, can result in injury, illness, death, or other losses.

Health: A state of positive physical, mental, and social well-being to include the ability to lead a socially and economically productive life and not merely the absence of disease or infirmity.

Incentive: A reward or punishment that induces action.

Injury: Physical harm or damage to some part of the body resulting from an exchange of mechanical, chemical, thermal, electrical, or other environmental energy that exceeds the body’s tolerance.

Injury Control: Incorporates multiple activities to reduce severity of injury, including prevention, treatment, and rehabilitation.

Injury Prevention: Attempts to reduce the incidence of injury, usually by educational, engineering, environmental, and enforcement interventions.

Media Advocacy: A strategic use of multiple media outlets intended to influence a social change or public policy initiative.

Minimum Data Set: Pre-determined, basic types of information collected consistently on all injury cases.

Personal Protective Equipment (PPE): Clothing, devices, or solutions worn by or applied to an individual to serve as a barrier between the human body and potential hazards in the environment. Commonly used PPE in agriculture include steel-toed shoes, gloves, safety goggles, sunscreen, ear plugs, and masks.

Production Agriculture: A term used to replace “farming” since it has broader application to the wide range of complex machinery, sophisticated crop and livestock management practices, and relationships with associated agricultural businesses.

Risk: The possibility of suffering harm or loss.

Safety: Freedom from those conditions that can cause danger, risk, or injury.

