

**AGRICULTURAL SAFETY AND HEALTH:  
A NATIONAL PROGRAM PERSPECTIVE**

**S. A. Olenchock**

**Office of the Director**

**National Institute for Occupational Safety and Health**

**Abstract**

The National Institute for Occupational Safety and Health (NIOSH) has a long-standing initiative related to the safety and health of workers in agricultural occupations. In 1990, the Congress of the United States, under Public Law 101-517, directed NIOSH to develop a national program in agricultural safety and health. Congress extended the NIOSH mandate in 1997 to include efforts directed childhood agricultural health and safety issues. NIOSH, through extramural and intramural surveillance, research, education, and intervention, pursues a national program to prevent human disease, injuries and deaths in agriculture. The focus of this paper will be the partnerships that NIOSH forged with public and private institutions throughout the nation in an effort to accomplish this activity.

**Introduction**

The Occupational Safety and Health Act of 1970 committed the United States to ensuring safe and healthful work conditions for working men and women. The National Institute for Occupational Safety and Health (NIOSH) was created under that Act to conduct research and training and to make recommendations for the prevention of work-related illnesses and injuries. The philosophy of NIOSH is articulated in the Institute's vision statement: "Delivering on the Nation's Promise: Safety and Health at Work for All People...Through Research and Prevention."

NIOSH is organized as a part of the Centers for Disease Control and Prevention, which is an agency within the United States Department of Health and Human Services. NIOSH headquarters is located in Washington, DC, and additional offices are located in Atlanta, Georgia. Major research divisions and laboratories are found in Morgantown, West Virginia; Cincinnati, Ohio; Bruceton, Pennsylvania, and Spokane, Washington.

For a relatively young Institute, NIOSH has a long history in agricultural safety and health activities. Since 1970, efforts developed over time in many avenues of agriculture-related research, surveillance and education. In large part, due to a grass roots effort of scientists, policy makers, and private citizens, the Congress of the United States established in 1990 a national initiative in agricultural safety and health (see Table 1). Congress directed NIOSH to develop a program, which, when sustained over a period

of time, would result in a significant and measurable impact on health effects among rural Americans. That program included surveillance, research, and education and also funded the Surgeon General's Conference on Agricultural Safety and Health that was held in the following year, 1991 (Olenchock, 1995). In the nine years since the inception of the NIOSH National Program in Agricultural Safety and Health, the program matured and developed into a globally recognized example of a truly national effort to improve the health and well being of agricultural workers. The purpose of this paper is to present an overview of this current national program, with emphasis on extramural partnerships and collaborations.

**Centers for Agricultural Research,  
Education, and Prevention**

Funded since 1990 through nationally competed cooperative agreements, the Agricultural Centers were established to provide research, education, and prevention programs for agricultural workers and their families through the following objectives: 1) develop and conduct research related to the prevention of occupational disease and injury; 2) develop and implement model educational, outreach, and intervention programs promoting agricultural health and safety; 3) develop and evaluate control technologies to prevent illness and injuries; and 4) develop and implement model programs for the prevention of illness and injury. Additionally, the Agricultural Centers are required to: 1) evaluate agricultural injury and disease prevention and educational materials and programs implemented by the Center; 2) provide consultation and/or training to researchers, health and safety professionals, graduate/professional students, and agricultural extension agents and others in a position to improve the health and safety of agricultural workers; and 3) develop linkages and communication with other governmental and non-governmental bodies involved in agricultural health and safety.

The Agricultural Centers Program was devised to recognize regional differences in agriculture throughout the Nation. Unique differences exist nationally in production, techniques, commodities, climate, and workforce, to name a few. To respond to such diversity in agriculture, NIOSH established nine Agricultural Centers within various universities or university-affiliated medical complexes at strategic locations across the United States. Each Center is challenged to become a true resource to their identified regions, and thus provide their regions with research expertise, education, and prevention/outreach. Current Agricultural Centers are in these locations: Seattle, Washington; Davis, California; Fort Collins, Colorado; Iowa City, Iowa; Marshfield, Wisconsin; Lexington, Kentucky; Cooperstown, New York; Tampa, Florida; and Tyler, Texas (Kullman et al., 1998).

## **Community Partners for Healthy Farming**

This community-based cooperative agreement program began in 1996. Two distinct components, surveillance and intervention, form the basis for the activities, while a common thread is the unique relationship between local partners with each program. The purpose of the surveillance component is to conduct on-going, action-oriented surveillance of agriculture-related disease, injury, and hazards in agricultural communities. This component builds on the strengths of the surveillance efforts begun in 1990 under the NIOSH program, "Occupational Health Nurses in Agricultural Communities," which conducted community-based surveillance for sentinel health events of illness and injury. Community Partners Surveillance develops, implements, and maintains a community-based system of reporting agricultural job-related diseases and injuries from locations which are representative of agriculture in a specific State, while selecting events that are of such potential public health importance as to merit further investigation. Nine surveillance programs are operating currently.

Community Partners Intervention contributes to the prevention of occupationally-related disease and injury in agriculture through community-based demonstration or intervention projects aimed at testing and evaluating regulatory, behavioral, educational, control, and other preventive interventions. This component is accomplished by linking groups with research expertise together with agricultural community groups or populations. The focus for agricultural workplace safety and health intervention efforts includes specific engineering control technologies, information dissemination, health communication practices, worker/management participatory safety and health programs, and/or family and community safety and health training. Seven intervention programs are active. Dissemination of findings is critical to both the surveillance and the intervention components.

### **Childhood Agricultural Injury Prevention Initiative**

In 1997, the Congress of the United States extended the NIOSH mandate in agricultural safety and health to include efforts directed specifically at childhood agricultural safety and health issues. Program guidance came from intramural NIOSH expertise, a varied and multi-disciplinary group of stakeholders, and the 1996 report, *Children and Agriculture: Opportunities for Safety and Health. A National Action Plan* (National Committee for Childhood Agricultural Injury Prevention, 1996). A meeting with partners was held in 1997 and included farm families, farmworker organizations, equipment manufacturers, safety advocates, educators, researchers, insurance representation, and key federal agencies. Three areas of activity are conducted throughout the Initiative: surveillance efforts, the National Children's Center for Rural and Agricultural

Health at the National Farm Medicine Center in Marshfield, Wisconsin, and the formation of a federal task force (Castillo et al., 1998).

The program goals for this Initiative include: 1) filling critical data needs; 2) establishing infrastructure which facilitates use of data to develop and improve prevention efforts; 3) encouraging use of effective prevention strategies by private and public sectors; and 4) increasing involvement of the private sector in prevention and research efforts. The initiative is envisioned as a five-year program, and it is the cooperative responsibility of NIOSH and the National Children's Center to explore potential opportunities and strategies for involving the private sector in research and prevention efforts. Extramural research grant priorities within this Childhood Agricultural Injury Prevention Initiative are found in the areas of injury surveillance, risk factor research, outcomes research, intervention strategies, and education evaluation. A strong intramural research program is centered on the same categories.

### **Grants**

Extramural grants to qualified investigators complete the external program in agricultural safety and health. The NIOSH Office of Extramural Coordination and Special Projects facilitates contributions of extramural scientists and public health professionals to prevent agriculture-related illnesses, injuries, and deaths among all people. The Office accomplishes this effort through extramural financial assistance and coordination with other Centers within the Centers for Disease Control and Prevention. It coordinates and evaluates the financial assistance activities of NIOSH, including research and demonstration grants, training grants, fellowships, cooperative agreements, and conference grants. In addition, the Office conducts special projects and coordinates extramural projects with intramural projects.

Finally, NIOSH, in partnership with the occupational safety and health community, addresses the new challenges to workers in agricultural occupations through the National Occupational Research Agenda (NORA). NORA consists of 21 priority areas (Table 2) that will guide United States occupational safety and health research into the next decade. Further information concerning NORA can be found on the NIOSH internet homepage.

### **Intramural Activities**

The strength of the NIOSH extramural program in agricultural safety and health is enhanced and complemented by a significant intramural effort. NIOSH impaneled an Agricultural Steering Committee to offer direction to the intramural agricultural program of surveillance, research, and education. Evaluation of strengths, weaknesses, opportunities, and challenges

complements analysis of gaps and emerging areas in the ever-changing occupational arena within agriculture. Representation from all activities within NIOSH comprise the Committee: Office of the Director; Division of Biomedical and Behavioral Science; Division of Physical Sciences and Engineering; Division of Respiratory Disease Studies; Division of Safety Research; Division of Surveillance, Hazard Evaluations, and Field Studies; Education and Information Division; Health Effects Laboratory Division; Pittsburgh Research Laboratory; Spokane Research Laboratory; and Office of Extramural Coordination and Special Programs. NIOSH scientists, along with our extramural partners, work to ensure safety and health in agriculture for all people through research and prevention. They direct a myriad of intramural projects designed to improve the health and well being of all workers in agriculture.

### References

Castillo, D., D. Hard, J. Myers, T. Pizatella, and N. Stout. 1998. A national childhood agricultural injury prevention initiative. *J. Ag. Safety and Health Special Issue (1):183-191.*

Kullman, G. J., T. Palermo, and J. Cox - Ganser. 1998. The NIOSH agricultural centers and research on agricultural respiratory diseases. *Proceedings Beltwide Cotton Conferences. National Cotton Council of America, Memphis. pp. 203-207.*

National Committee for Childhood Agricultural Injury Prevention. 1996. *Children and Agriculture: Opportunities for Safety and Health. A National Action Plan.* National Farm Medicine Center, Marshfield Clinic, Marshfield, Wisconsin.

Olenchok, S. A. 1995. The NIOSH national program in agricultural safety and health. In: Wakelyn, P. J., R. R. Jacobs, and R. Rylander (eds.), *Proceedings of the Nineteenth Cotton and Other Organic Dusts Research Conference.* National Cotton Council of America, Memphis. pp. 250-252.

Table 1. Chronology of the NIOSH National Program in Agricultural Safety and Health.

---

1988:	<p>“Agricultural Occupational and Environmental Health: Policy Strategies for the Future”</p> <p>A conference of approximately 170 scholars and policy makers was held in Iowa City and Des Moines, Iowa</p>
1989:	<p><i>Agricultural at Risk: A Report to the Nation</i></p> <p>This publication by the National Coalition for Agricultural Safety and Health summarizes the scientific presentations from the conference and lists policy recommendations in agricultural and environmental safety and health.</p>
1990:	<p>Public Law 101-517</p> <p>The Congress of the United States directed NIOSH to develop a comprehensive national program of surveillance, research, and education in agricultural safety and health which, when sustained over a period of time, will have a significant impact on health effects among rural Americans.</p>
1991:	<p>“Surgeon General’s Conference on Agricultural Safety and Health”</p> <p>Held in Des Moines, Iowa, the Conference established a vision for improving the health and safety of agricultural workers and their families throughout America by raising consciousness, building coalitions, disseminating information and encouraging action.</p>
1992:	<p>“Childhood Agricultural Injury Prevention Symposium”</p> <p>A Symposium was held in Marshfield, Wisconsin to develop consensus on relevant research, education, policy, and other interventions aimed toward reducing agricultural injury of children.</p>
1996:	<p><i>Children and Agriculture: Opportunities for Safety and Health. A National Action Plan</i></p> <p>This report from the National Committee for Childhood Agricultural Injury Prevention contains 13 objectives and 43 recommended action steps aimed at maximizing the safety and health of all children and adolescents who may be exposed to agricultural hazards.</p>
1997:	<p>National Childhood Agricultural Injury Prevention Initiative</p> <p>Congress extended the NIOSH mandate to include efforts directed specifically at childhood agricultural safety and health issues.</p>

---

Table 2. National Occupational Research Priority Areas.

---

Allergic and Irritant Dermatitis	Intervention Effectiveness Research
Asthma and Chronic Obstructive Pulmonary Disease	Low Back Disorders
Cancer Research Methods	Mixed Exposures
Control Technology and Personal Protective Equipment	Musculoskeletal Disorders of the Upper Extremities
Emerging Technologies	Organization of work
Exposure Assessment Methods	Risk Assessment Methods
Fertility and Pregnancy Abnormalities	Social and Economic Consequences of Workplace Illness and Injury
Health Services Research	Special Populations at Risk
Hearing Loss	Surveillance Research Methods
Indoor Environment	Traumatic Injuries
Infectious Diseases	

---