

Chapter 1 : About - Farm Injury Resource Center

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More Like This Between and , the agriculture industry underwent many changes ranging from the increased use of technology to boost production to the slow, but constant erosion of the family farm in the United States. One aspect which has not changed over these 30 years is that agriculture remains one of the most hazardous industries in the United States U. Department of Labor, Bureau of Labor Statistics, The occupational environment for this industry continues to present a wide variety of hazards to workers, including chemical exposures, noise, organic dusts, psychological stresses, and physical and mechanical exposures that may result in traumatic injury. Again, injury-reducing design technologies are often available but are not widely used because of a lack of hazard recognition or because of economic constraints. Traumatic injury was and is arguably the leading cause of identifiable death and injury of agricultural workers. This report will attempt to provide a limited review of important background agricultural traumatic injury surveillance activities and update the status of traumatic injury and death among agricultural workers in the U. The NSC estimated work deaths through the use of an algorithm that assigned a probability that a death was occupational, given the cause of death. The NSC also obtained additional information on farm-related deaths through the collection of farm-related death certificates from various State Agricultural Safety Specialists across the United States National Safety Council, Agricultural deaths in the NTOF are determined based on the usual occupation field on the death certificate. The CFOI uses a multiple record approach to identify work-related deaths in the United States, thus improving the capture rate of occupational fatalities Toscano, ; independent source documents, or a source document and a follow-up questionnaire are used for determining work-relatedness. In addition, because multiple records are used, the specifics about each death are usually better than what is possible from death certificates, alone. This includes a better classification of the industry in which a specific fatality occurred. Given the advantages of the multiple record approach, the CFOI currently represents the best measure of agricultural occupational fatalities in the United States. Despite the differences in these three approaches in assessing occupational deaths, there is a high degree of agreement among these data systems on the major issues associated with agricultural fatalities. Based on these data, or similar death certificate-based research, the most common cause of occupational agricultural death has consistently been identified as machinery, especially farm tractors Bobick and Jenkins, ; Hard et al. Other usual causes of death include motor vehicles, animals, electrocutions, falls, and mechanical suffocations. Other aspects of agricultural fatalities have also been consistently reflected in the literature. Older farmers and farm workers, while not consistently defined among different authors, have been identified at highest risk for work-related agricultural fatalities Bobick and Jenkins, ; Hard et al. Similarly, much attention has been focused on youth under the age of 20 years who work in agriculture and have a higher risk of fatal occupational injury compared to other working youth Castillo et al. History of Non-fatal Occupational Injury Surveillance in Agriculture The surveillance of non-fatal injuries has been less structured than surveillance systems for occupational fatalities. Those systems that have been sustainable are state-based, rather than regional or national in nature. This system involved conducting three personal interviews with a farm operator over a one-year period. The survey used a standardized instrument developed by the NSC. Volunteers, usually coordinated by the State Extension Safety Specialists, conducted the surveys within participating states. However, at about the same time, it became apparent to the NSC and the Extension Safety Specialists conducting the surveys that the system was not sustainable. The success of the survey relied heavily on a statewide network of volunteers, and a system for training these volunteers to identify, recruit, and keep farm operations in the survey. In addition, the volunteers needed to collect and return survey data in a timely fashion. In , a new approach for conducting combined fatal and non-fatal injury surveillance in the agricultural industry was demonstrated by the University of Minnesota through the initiation of the Olmsted Agricultural Trauma Survey OATS Gerberich et

al. The farm operators were identified using a list frame of farms maintained by the U. Adult farm operators were interviewed and asked to report injuries that had occurred on their farming operation, or to their family members, as well as to identify farming-related exposures within the last calendar year. In general, the results of the telephone survey were found to provide a realistic view of the injury occurrences on farms in Olmsted County, and provided an effective means of collecting these data Gerberich et al. Based on the success of the OATS, the University of Minnesota expanded the scope of the telephone survey approach to a 5-state random sample of farming operations in through a grant from the Centers for Disease Control and Prevention Gerberich et al. Some modifications were made to the survey procedures, including reducing the recall period for injury events and exposures to six months, but the sampling frame for identifying farms was still provided by USDA, NASS. This type of data collection was shown to be an effective way to collect farm injury information over a large geographic area Gerberich et al. More detailed methodological procedures are available in Gerberich et al. The main objective was to develop a data collection system that would provide useful information on agricultural injuries occurring in the U. The TISF was a stratified two-stage random sample of farm operations in the United States that used a mail survey instrument Myers, Each year, a sample of States was selected within four geographic regions. Then farms were selected at random within States. The survey was designed to cover a three-year time period to allow for the survey to be conducted in each of the 50 States, while still allowing for the estimation of national and regional farm injury estimates in a given year. A major drawback to the FFHHS was that the States did not employ the same survey instruments or sampling designs, and, in some instances, did not represent the entire agriculture community within the State. These differences limited the ability to combine State results into meaningful larger data sets. SPRAINS is a hospital emergency department-based surveillance system conducted in a selected number of hospitals in the State of Iowa, which are to report agricultural injuries identified at these emergency departments. Cases are to be reported to the Iowa Department of Public Health. The North Dakota agricultural injury surveillance system is broader in nature in that agricultural injuries are considered a reportable condition within the State of North Dakota. As such, hospitals, physicians, and other medical facilities are required by law to report agricultural injuries to the North Dakota Department of Health. The North Dakota Department of Health developed a simple post card reporting system to assist hospitals and physicians in reporting these cases. Both of these systems are still being conducted by their respective States, and are considered valuable resources for monitoring agricultural injuries within their State. However, they have not expanded into surrounding States and, as such, are limited in their utility. Recently, there has been an increased effort to develop agricultural injury surveillance systems for youth living, working, or visiting farms in the United States. To date, NIOSH has conducted three separate surveys to evaluate methods for collecting youth farm injury data. These include a farm operator survey conducted in cooperation with the U. Results of many of these surveys have appeared in several publications. Publications from the RRIS-I include studies that assessed the magnitude of and potential risk factors for tractor-related injuries Lee et al. Current Information on Agricultural Injuries and Fatalities Several sources of data were utilized for this effort. These data include both national and regional data sources. Data were limited to production agriculture, which is that part of the agriculture industry associated with farming. Data were analyzed for the years through The CPS is an employment survey based on a monthly sample of households across the U. Employment figures only included information on workers who defined farming as their primary industry of employment and were 15 years of age or older. Additional information on the CPS is available from the U. Department of Labor, Bureau of Labor Statistics A total of 36, farms participated in the survey over the 3 year time period, which provided injury data for the calendar years through An injury was defined as a physiologic traumatic event that resulted in: Injury data collected included type and severity of the injury together with the source, mechanism, and other potential contributing factors. There were 4, work-related deaths occurring in agricultural production from Over half of these deaths occurred in crop production Table 1. The overall agricultural production fatality rate was The crop production farms had a fatality rate nearly three times greater than livestock farms There was no discernable trend for decreasing fatalities in production agriculture during this time period Table 2. These older workers had fatality rates that were 1. Together, these three sources of injury accounted for over half of the fatalities in agricultural

production Table 4. Finally, Table 6 provides a further breakdown of the five leading sources of fatal injury in production agriculture by comparing the number of deaths that occurred to workers 55 years of age to all farm worker deaths. For each source of injury, older workers account for over 40 percent of all deaths. For tractors, agricultural mowing machines, and animals, older workers account for more than 60 percent of the deaths. For the years through , there were an estimated , injuries that occurred in production agriculture as reported in the TISF Table 7. This represented an overall occupational injury rate for production agriculture of 7. There was no apparent difference in injury rates between crop and livestock production operations Table 7. The regions of the U. There were no large differences in injury rates among the age groups above 19 years of age Table 8. With regards to the gender of the injured workers, there was a 9: The highest proportions of injuries occurred during the months of August, July, June, and November. One in five farms Non-farming related injuries that may also impact the farming operation were reported by one in six farms Overall, there were two deaths in this population, during the one-year study period, associated with other causes. The age and gender distribution of injuries revealed important differences. When the denominator of persons was used, males 8. The highest rate of farming-related injuries per persons was identified among males, years of age Of particular importance, however, is the fact that when the denominator of hours worked was used, the highest rates per , hours worked was for males in the Across all ages, the overall rates were equivalent between males and females when hours of exposure were considered 5. Multivariate analyses were conducted using logistic regression, based on a model developed a priori, and further confirmed using backward stepwise logistic regression. Portable augers and self-propelled combines had the highest rates of and per , persons, respectively. Through multivariate analyses, several variables were associated with elevated rate ratios that were important in both models: Although tractors account for the majority of fatal farm injuries, little is known about the magnitude of this problem. Rates were calculated for sociodemographic variables and various exposures; logistic regression was used to calculate the rate ratios and respective confidence intervals. The rates increased incrementally for those working between hours and per week range, to 1, per , persons. Among the 12 rollover events, there were three injuries. Another substudy, involving the case-control effort, Injury from Dairy Cattle Activities Boyle et al.

Chapter 2 : National Ag Safety Database - National Ag Safety Database

Here are some of the most common types of serious farm accidents and farm accident injuries: Tractor overturn deaths. Each year approximately U.S. farmers are killed when their tractor rolls over during use - and many more suffer serious injuries during tractor overturn incidents.

But although agricultural work is often a rewarding way to support you and your family, it can be dangerous and even deadly if landowners, operators, and farm equipment manufacturers do not take safety seriously. Here are some of the most common types of serious farm accidents and farm accident injuries: Each year approximately U. Many farmers and farm workers suffer serious injuries sustained in falls from farm equipment, grain bins, ladders, haymows, or other farm buildings. Others are struck by falling objects. Farm workers can be seriously maimed, disfigured, or killed when they become caught in farming machinery such as augers or PTO shafts. Farm workers may become trapped in a grain bin or silo where they are suffocated. Others may become trapped in enclosed spaces that do not have proper oxygen levels or that are contaminated with silo gas or manure gas. While some of these Iowa farming injuries could not have been prevented and are simply tragic accidents, many Iowa farm industry injuries could have been prevented if not for the negligence of another person or entity. Here are just a few ways examples of farm accidents that may have been caused by negligence: A farm equipment company does not put adequate warnings on their products. A piece of farming equipment is defective or dangerous. A farm employer, owner, or operator removes safety devices, such as shields, from a piece of equipment. A farm employer does not properly train workers to use the farm equipment. A farm employer does not discontinue the use of a broken or faulty piece of equipment. Each year in Iowa, one in five farms is the scene of a serious agricultural industry accident. These accidents can lead to serious bodily injury, including loss of limbs and amputation, head injuries and brain damage, back injuries and spinal injuries, disfigurement, and death. These injuries can keep you from returning to work, permanently lower your quality of life, and require ongoing medical treatment. If someone else was responsible for your farm industry accident, they could be responsible for your medical bills, lost wages, and other damages. Get help for your farm accident injury case today. If you have been seriously injured in a farm accident in Iowa, or if you have lost a loved one in a farm accident, talk to an experienced farm accident attorney today. Even if your Iowa farm accident is different from those described above, tell us about your case. At Brady Preston Gronlund, we pride ourselves in taking on challenging and unique cases, especially if it means finding justice for the victim of an Iowa farm accident.

Chapter 3 : Most Common Types of Farm Injuries | Brady Preston Gronlund PC

Injuries and Fatalities Yuan-Hsin Cheng, Ph.D., Post-doctoral Research Assistant capacity in the U.S. is found on farms that are exempt from the current OSHA.

According to the National Safety Council , tractor accidents are the leading cause of injury and death among farmers and farm workers. Farm tractors accounted for the deaths of 2, farm between and The most common type of tractor accident is roll overs “The U. The National Agricultural Tractor Safety Initiative reports that tractors cause about deaths annually or half of all farm worker fatalities. Irresponsible Tractor Manufacturing Tractor manufacturers do not design tractors safely. And they often fail to warn of the danger of operating them. For example, newer tractors are required to have rollover protection systems ROPS , but older models often tip over. Injuries sustained as a result of working with farm equipment are rarely caused by farm who use them. Even if you think you might be partially at fault, you may still be eligible for compensation. Common Tractor Injuries Along with roll overs, other injuries associated with defective tractor design include: Run overs“these cause about 60 fatalities annually. Entanglement in moving parts shafts, pulleys, belts, chains and gears “these cause about 10 deaths annually. Driving in hazardous weather conditions or over uneven terrain. Are ROPS in place and seat belts used? Is a PTO master shield in place? Are lights and flashers operational? Are tires properly inflated? Is the hydraulics free from leaks? Are brakes locked together? Is a 20 lb. Is a fully equipped first aid kit on the tractor? You are not at fault, and you deserve compensation! Manufacturers who design and distribute unsafe machinery should pay you for the losses you suffer due to using their products.

Chapter 4 : Farm Injury Statistics

fatalities (or 49 percent of all agricultural injury deaths) were attributed to transportation incidents, involving highway, non-highway, air, water, and rail fatalities. Many fatalities are tractor related involving overturns.

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Agricultural Auger-Related Injuries and Fatalities -- Minnesota, Agriculture remains one of the most hazardous industries in the United States: This report presents surveillance findings for auger-related injuries during , summarizes the investigations of four selected auger-related injuries that occurred in the state, and provides recommendations to prevent injuries to farmers who use these devices. In addition, the Minnesota Extension Service independently records agricultural injuries and deaths reported by extension agents and newspaper clipping services. Surveillance for Auger-Related Injuries During , augers were associated with two fatal and 25 nonfatal injuries in Minnesota. During , the Minnesota Extension Service received reports of 14 auger-related deaths, which were attributed to entanglement or crushing eight and electrocution six. Case Reports Incident 1. On April 14, , a year-old boy was cleaning inside an oxygen-limiting silo while a sweep auger was in operation. The unguarded auger swept slowly around the silo floor, pivoting about a central axis. As the boy stepped over the moving equipment, the hem of his pants caught in the auger, and his leg was traumatically amputated below the knee as it became entangled. On January 8, , a year-old farm laborer was using an auger to unload a silo. While attempting to step over the machine, he stepped on a metal shield that covered the bottom of the auger. The shield broke, and he fell into the auger, sustaining a traumatic below-the-knee amputation. On June 22, , a year-old farmer died after becoming entangled in an unshielded auger system that was being used to move feed down the length of a feed bunk in a cattle feed lot. While the system was in operation, the farmer entered the feed bunk, and his leg became entangled when he either slipped or attempted to step over the auger. The electric motor driving the system stopped after the fuse blew. Although he freed himself from the auger and climbed out of the feed bunk, he died a short distance from the feed lot as a result of massive hemorrhage. Editorial Note Editorial Note: An agricultural auger consists of a continuous corkscrew blade attached to a long metal shaft and a round metal tube into which the blade is inserted. The metal tube contains the material as it is moved from the intake at one end of the auger to the discharge at the other end and protects the operator from contact with the rotating blade. An auger can be independent and movable or it can be integrated with another piece of machinery or a grain storage system e. Auger-related injuries result from 1 contact with the exposed auger blade; 2 entanglement in a belt drive or PTO conveying power to the blade; 3 electrocution when an auger contacts overhead power lines e. Although auger-related injuries are preventable, they remain a public health concern among farmers. On a per-hour-of-use basis, augers are one of the most dangerous types of farming equipment 4 ; severe injuries have resulted from entanglement and electrocution 2. The occupational injury surveillance and investigation data from Minnesota underscore the risks augers pose for both disabling and fatal injuries among farmers. In particular, the Minnesota data emphasize the risk for traumatic amputation resulting from entanglement of extremities. NIOSH recommends the following precautions to substantially reduce the risks for hazards related to auger use: Children aged less than 18 years should not operate augers and should not enter the area near an auger. Before starting an auger, the operator should ensure that all protective shields, as supplied by the manufacturer, are in place and in good condition. The federal OSHA standard for safety of farm equipment requires placement of guards on augers consistent with their designed use 5. Before service or repair, power should be shut off and the auger power source "locked-out" and "tagged. To prevent entanglement, persons wearing loose clothing or jewelry or persons with long, untied hair should not operate augers. Workers should not step or jump on or over an auger while it is in operation. Grain augers always should be lowered to a horizontal position before being moved from one location to another. Workers always should observe the presence and location of power lines before raising an auger into position. Whenever possible, operators should ensure good footing while working around augers. Portable augers should be placed on dry, level

ground or a gravel pad. Spilled grain should be removed between loads, after the equipment has been turned off. Operators should never use their hands or feet to redirect the flow of grain or other materials into the auger. All farm workers and auger operators should be educated about safe operating procedures and hazards associated with augers. Augers should be clearly labeled as posing a hazard for entanglement and subsequent serious injury. References National Safety Council. National Safety Council, Preventing grain auger electrocutions. Auger and elevator accident victim rescue. Aherin RA, Schultz L. Safe storage and handling of grain. Minnesota Extension Service Bulletin, ; publication no. Office of the Federal Register. Code of federal regulations: Fourteen states have been awarded SENSOR cooperative agreements to develop systems for surveillance of 12 occupational conditions. OHNAC is a national surveillance system that has placed public health nurses in 10 states. Surveillance data compiled by these programs ultimately are used to reduce work-related injury and illness. A "sweep" auger, referred to in incident 1, is typically an exposed auger used to move material such as grain to a central discharge point inside a large storage structure. A sweep auger usually extends from the center of a round structure to its outside wall, is powered by a drive system that contacts the bin or silo wall, and slowly rotates i. The auger rests directly in the grain or similar material , and the excess grain alongside the auger acts to confine the grain that is in contact with the auger. However, family members working on family farms are exempt from these provisions. This conversion may have resulted in character translation or format errors in the HTML version. An original paper copy of this issue can be obtained from the Superintendent of Documents, U. Contact GPO for current prices.

Chapter 5 : Tractor Accidents - Farm Injury Resource Center

In , farmers and farm workers died from a work-related injury, resulting in a fatality rate of deaths per , workers. Transportation incidents, which include tractor overturns were the leading cause of death for these farmers and farm workers.

Research on farm accidents centers around causes and severity of injuries and illnesses, health and safety of youth, farm safety education, and improved survey techniques. Examples of research from each of these areas are discussed below. The status of injuries and illnesses on farms is one of the first items of information that should be determined. Status of injury or illness includes information about the victim, the agent that caused the injury or illness, the task being performed when the illness or injury occurred, and other information that will describe the event. Injuries in farming range from cuts and scrapes to total disabilities and fatalities. Most traumatic injuries occur during interactions with machinery, especially tractors. Injuries also result from poor building design, electric power, livestock handling, and weather conditions. The activities that victims were most often performing when injured are machinery maintenance, fieldwork, and caring for animals. Hoskin and others, b and c; Pollock, ; and Yoder and others. Tractor accidents have been identified as the leading cause of deaths and disabling injuries on farms. National Coalition for Agricultural Safety and Health, Tractors are the most frequent cause one-third to one-half of injury for fatal farm accidents but account for a much smaller percentage 5 to 10 percent of nonfatal farm accidents, according to Murphy. Murphy also reports that the types of fatal tractor accidents have not changed over the last 10-plus years, with overturn accounting for about one-half and runover accounting for about one-fourth of such accidents. Most deaths caused by overturns and runovers could be prevented if tractors were equipped with rollover protective structures (ROPS) and seat belts and if passengers were not allowed on tractors. However, only about one-third of the tractors on U.S. farms have ROPS. Other types of fatal injuries involving tractors are caused by power takeoff (PTO) entanglements, contact with overhead electrical wires, and road collisions. Not all injuries involving tractors are fatal. Hoskin and others, in their report on tractor-related injuries, showed that "struck by or against" an object and fall from a different level were the most frequent types of injuries. These generally resulted in bruises or fractures struck by or against and fractures or sprains to the foot. Hoskin and others, b. Most of the struck by or against accidents occurred during fieldwork, but most of the accidents by falls occurred while the tractor was parked or stationary. Hoskin and others, b. This study drew two conclusions. Machinery Other Than Tractors. Hoskin and others in their study of machinery-related injuries showed that most accidents occurred when the victim was struck by or struck against the machine while performing maintenance on combines with grain heads when the machine was not running. Hoskin and others, a. Other types of injuries that happen when working with machinery include entanglements in belts, chains, gears, power takeoffs at the tractor and along the PTO drive, and crop gathering and moving mechanisms. Madsen, Most machinery is manufactured with protective devices, and warning signs are placed on the machines at spots where workers can become easily entangled. These injuries generally result in a bruise or fracture to the head and most often happen while performing chores involving animals or treating animals. Hoskin and others, c. A Pennsylvania study supports these findings, showing that the largest percentage of farm injuries occurred in barns 30 percent, fields 16 percent, barnyards 14 percent, and farm buildings 12 percent. Huizinga and Murphy, ILLNESSES. Farmers and farmworkers have higher rates than other workers of respiratory disease, certain cancers, acute and chronic chemical toxicity, dermatitis, musculoskeletal syndromes, noise-induced hearing loss, and stress-related mental disorders. National Coalition for Agricultural Safety and Health, Respiratory diseases are not new to farmers and farmworkers. In , Bernardino Ramazzini wrote that "measurers and sifters of grain were at risk for respiratory problems," and in , Charles Thackrah "described a relationship between asthma and inhalation of corn dust." Von Essen, In , a study by a small group of veterinary practitioners showed that respiratory problems appeared in workers exposed to swine confinement areas. Donham, According to Von Essen, at least six disorders are associated with exposure to airborne dusts in farming: HP is caused by exposure to antigens found in silage and in

spoiled hay and grain. HP is commonly seen on dairy farms but has also been found on farms where grain is stored in drying bins and is found in poultry houses and mushroom houses Von Essen, Workers affected by ODTs include those uncapping silos on dairy farms, cleaning grain bins, moving moldy grain, and working in swine confinement facilities Von Essen, The precise cause of CB, other than airborne dust, has not been isolated; nor have the individuals who are at high risk been identified. However, workers in swine confinement areas, poultry farmers, and handlers of grain appear to have risks of suffering from CB Von Essen, The occurrence of APS has been studied in grain farmers and swine confinement workers, and both groups have exhibited symptoms Von Essen, Asthma can be triggered by many farm antigens. Also, many farm antigens cause MMI. In addition to airborne dusts, some gases can cause acute toxicity. The primary locations of these gases are silos, manure pits, and modern semienclosed animal production buildings Hurst, ; Pependorf, ; and Zwemer and others, Soon after corn is ensiled, nitrogen oxide levels begin increasing and continue to increase for about 7 days. Anyone entering silos during the first 2 weeks after filling may experience difficult or labored breathing dyspnea or, in the extreme case, death Pependorf, ; and Zwemer and others, Hydrogen sulphide, methane, ammonia, carbon dioxide, and carbon monoxide are some of the toxic gases emanating from manure pits, especially when the manure is being agitated Hurst, Even when the levels of these gases are not high enough to be fatal, unconsciousness may cause drowning or near drowning in manure liquids Hurst, High levels of ammonia have been documented in poultry and swine confinement facilities, especially in winter Pependorf, Concentrations of ammonia in these facilities would ordinarily be only a strong irritant to the eyes, nose, and throat but when combined with organic dusts could cause pulmonary damage Pependorf, The marked frequency of these cancers in farmers have not been conclusively identified Blair and Zahm, ; McDuffie and others, ; McDuffie and others, ; and Novello, Department of Health and Human Services, a. Some evidence indicates women on farms have higher incident rates of multiple myeloma than do farm men Zahm and others, a. Exposure to pesticides can produce acute and chronic toxic reactions. Acute reactions develop immediately after moderate or high exposures to pesticides. Symptoms of acute reactions include dizziness, vomiting, headache, fatigue, drowsiness, and skin rashes. More research on the chronic effects of pesticide exposures is required. Occupational dermatitis is very common among workers on U. Among the agents causing dermatitis and related skin conditions are ammonia fertilizers, animal feed additives, pesticides, plants, sunlight, cattle, swine, sheep, moist and hot environments, and chiggers, bees, and wasps Blair, ; Susitaival and others, ; Zwemer and others, Degenerative musculoskeletal syndromes are widespread among farmers and farmworkers National Coalition for Agricultural Safety and Health, ; and Novello, Low back pain, hip arthrosis, and degenerative arthritis of the knee and upper extremities are the syndromes most often reported National Coalition for Agricultural Safety and Health, ; and Novello, Chronic vibration from tractors and farm machinery and repetitive trauma associated with farm work can lead to musculoskeletal syndromes Barbieri and others, ; Holness and Nethercott, ; National Coalition for Agricultural Safety and Health, ; and Novello, Another occupational hazard for farmers and farmworkers is hearing loss caused by exposure to farm machinery, especially tractors. Hearing losses affect about a quarter of younger farmers and one-half of older farmers May and Dennis, ; National Coalition for Agricultural Safety and Health, ; Novello, ; and Reesal and others, Farmers, farmworkers, and farm family members have high rates of stress-related mental disorders, especially depression Heffernan, The Fair Labor Standards Act limits the employment of minors according to age and occupational activity Runyan, Children of farm operators may work for their parents on their own farms at any age. In addition, many children are at risk by living on farms. A study of Iowa farm families highlights some of the safety issues related to youth: An earlier study of injuries to farm youth less than 20 years of age in , , and used national statistics Reesal and others, According to this study, about youth die each year from farm injuries and 23, suffer nonfatal injuries; rates of fatal and nonfatal injuries increase with the age of the victim; fatal and nonfatal injury rates are much higher for males than for females; more than one-half of the victims of fatal farm injuries die before reaching a physician, nearly one-fifth die in transit to a hospital, and about one-tenth live long enough to receive in-patient care; nearly 90 percent of the nonfatal injuries were treated in an emergency room and released; and accidents involving farm machinery accounted for most of the fatal and nonfatal injuries, with tractors being involved in more accidents

than other machinery. Other farm machinery involved in such accidents were wagons and combines. However, these findings may be somewhat misleading because the data include deaths due to drowning and firearms and do not distinguish between recreation and farm-related activities as agents of death Rivara, A study of fatal farm-related injuries to children 9 years of age and under in Wisconsin and Illinois from to that used death certificate data showed the average annual death rates in the study population were 3. The study found that the death rate was substantially higher for boys than for girls, that most fatalities occurred in July, and that machinery was the source of more than one-half of the injuries in Wisconsin and Illinois during the period of the study Salmi and others, All of these groups have a stake in farm safety. A brief review of some literature on farm safety education follows. Both studies showed farm families to be aware that farming is a hazardous occupation and that safety is important even when this factor is ranked alongside such matters as prices and the environment. Findings also indicated that farm families were receptive to receiving constant reminders and literature about safe working practices, especially when these practices could be put to use by all ages. Farm magazines, the Cooperative Extension Service, and local equipment dealers in the Iowa study were found to be the most frequently used sources of safety information. Farm families participating in the New York study had reservations that safety meetings might not be the best way to communicate safety information Pollock, Farm operators and family members are aware of farming hazards, but in times of stress, such people may make decisions that under more ideal conditions would have been considered dangerous and unwise. For example, a farmer may throw aside a bent power takeoff shield so that grain unloading can go forward, rather than wait until the shield can be repaired. In this example, the operator is unconsciously making the economic decision that the value of the time required to repair the shield is greater than the potential loss that might result from an injury. However, these authors argue that "it is equally important to recognize that we should not stop trying to do a better job with education methods" Aherin and others, , p. The authors suggest that behavioral psychology may help in providing solutions for this continuing problem Aherin, ; and Aherin and others, Variables of Effective Safety Communication. Aherin and others identify several variables of effective safety communication: They argue that the most effective message will be conveyed by one who is an expert in agricultural issues, is trusted and liked by farmers, and is as similar as possible to farmers source characteristics. Also, "any program that requires the direct participation of the farmers could potentially increase persuasion and safety behavior" personal involvement Aherin and others, , p. Elements for Safety Communications. Aherin and his colleagues also note the importance of the characteristics of the message. They identify four elements that should be included in any safety communication: These authors use warning signs and labels, a major form of safety communication by machinery manufacturers, to demonstrate these four elements. In brief, the warning text that accompanies the label must be explicit and must answer the question, "Why should I obey? An Example of a Safety Education Effort One example of an effort to educate people about farm safety is a farm safety audit called "Farm Safety Walkabout," which could be used either as an individual or as a community activity, and which was developed at the University of Iowa Hawk and others, The audit has six one-page sections: The handbook provides all the materials necessary to carry out a community activity as well as the safety audit, a farm family health and safety community survey, a pretest to gather information on safety practices, a post-test to evaluate the effect of the program, a resource list, an accident emergency information sheet, and a basic list of supplies for a well-equipped emergency first-aid kit for a rural home. Two survey methods are used most frequently to collect farm accident data: Farm Household Surveys The following discussion includes a survey that was methodologically sound but had implementation problems and a survey that is being tested. Standard Farm Accident Survey Program. Although the Standard Farm Accident Survey Program was methodologically sound, consistent implementation from State to State was difficult because the survey relied heavily on volunteers to collect the data and because selecting and maintaining a stratified sample proved to be difficult Baker and others, Also, some States did not participate in the study, which limited its usefulness as a national data source.

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OCCUPATIONAL AND NONOCCUPATIONAL FATALITIES ON U.S. FARMS. By Conrad F. Fritsch, National Economic Analysis Division, Economic Research Service, U.S. Department of.

Chapter 7 : Child injuries on U.S. farms cost \$ billion a year | Reuters

US farm fatalities: An unpublicized epidemic By Naomi Spencer 18 August Hundreds of agricultural workers, including many child laborers, die in farming accidents across the US each year.

Chapter 8 : CDC - Agricultural Safety - NIOSH Workplace Safety and Health Topic

The main concerns identified in the NCASH report continue today-Tractors are the leading cause of farm-related death, due mostly to tractor overturns, older farmers continue to be at the highest risk for these farm fatalities, and traumatic injuries continue to be a main concern for youth living or working on U.S. farms.

Chapter 9 : Agricultural Auger-Related Injuries and Fatalities -- Minnesota,

And according to the U.S. Bureau of Labor Statistics, fatalities and injuries among agricultural are on the rise. The unfortunate truth is that if you're a farm worker, you're also working in one of the most hazardous industries in the nation.