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Effectiveness of Farm Safety Interventions

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A systematic review was conducted to examine the effectiveness of farm injury prevention interventions. Electronic databases, journals, proceedings, and technical papers were reviewed, and experts in the field were interviewed to identify relevant information sources. Educational and multifaceted interventions were included and engineering and regulatory interventions were excluded. All study designs were accepted, including those without comparison groups and those with absent or inadequate evaluation methods.

We selected 25 studies for the review. Following are examples of the findings. Harper (1998) found that a community program in South Carolina distributing materials to local leaders and educators had no significant effect on attitudes or knowledge. Rodriguez (1997) evaluated an informational campaign in Iowa using messages through radio, newspapers, and safety publications. Phone surveys showed moderate but statistically significant increases in awareness, concern and behavior indicators. Hawk (1995) found significant differences in behaviors after a Farm Safety Walkabout in Iowa. Reed (1994) evaluated a farm safety fair in a rural church setting, and found that over 50% of participating families incorporated safety changes on their farms. Buchan (1993) evaluated farm safety day camps in Colorado and found knowledge acquisition increases from 45 -100% and behavioral changes from 31- 84.5% among participants. Wilkinson (1993) reported that tractor certification program participants in Wisconsin had a 15% increase in exposure to non-ROPS tractors, a slight increase in carrying extra riders, and a 9% increase in tractor safety inspections. Pekkarinen (1992) evaluated an educational program for reindeer herders in Finland and found a 43% decrease in injury rate. Jansson (1988) evaluated a safety training program for farmer-loggers in Sweden consisting of 15 one-day courses and demonstrations. 71% reported a change in working methods; use of protective leg guards increased from 65% to 90%; and use of protective boots changed from 65% to 85%. Abend (1998) reported that NY Agricultural Hazard Abatement and Training program consisting of hazard corrections, training, and insurance incentives, showed a 27% decrease in workers compensation claims. Carstensen (1998) evaluated an intervention in Denmark including a farm inspection, and a one-day safety course. Injuries reduced from 33.4 to 20.1/100,000 hours. Husman (1990) evaluated a national model for farmer's occupational health services in Finland. Improvements were found in knowledge and use of personal protective equipment, but not in working conditions or work practices.

Most of the studies reported some improvements in knowledge, attitudes, and/or behaviors after intervention. Only three studies measured actual injury outcomes. For most of the studies, the validity and interpretation of the evaluation results are questionable due to limitations in design such as the lack of comparison groups and reliance on self-reported outcomes. There is some indication that multifaceted and incentive based programs are more effective than one-time event type programs or media campaigns although the evidence is not consistent. The review showed both successful and unsuccessful examples of different types of programs. This may indicate that the various aspects of program delivery are critical for successful intervention.