Rural Injuries

The rate of unintentional death for persons living in rural areas is approximately twice that of persons living in our largest cities (75 per 100,000 population vs 37 per 100,000). For comparison purposes, "rural" is defined as those population centers with fewer than 50,000 persons. Two percent of the population of the United States live and work on farms, with "farm populations" being defined by the US Department of Agriculture as persons living in rural territory on places which reported sales of $1,000/yr of agricultural products. Although "rural" and "farm" are not interchangeable terms, many of the injuries incurred are similar, and it would appear that the disproportionate in morbidity and mortality is due to several unique features of the rural environment.

Rural areas are by nature distant from skilled medical care, and prehospital treatment may be rudimentary or nonexistent. It is not clear from existing data sources whether the excess mortality in rural areas is due to severity of injury, inadequacy of prehospital intervention, or both.

Farming is the second most dangerous occupation in America, exceeded only by underground mining, and children and adolescents make up a significant part of the workforce. In the years 1979 to 1981, there were nearly 300 fatal farm injuries in children younger than 19 years of age; 53% of the children died before reaching a medical facility, 19% died in transit, and 15% died at the medical facility. The location of death of the additional 13% was unclear.

Many types of farm machinery are especially dangerous when operated by the young or inexperienced. Safety devices are frequently removed or circumvented. Of the machine-related deaths to children on farms, tractors accounted for half the fatalities, followed by farm wagons, combines, and forklifts. Farm-related morbidity data have shown that the mechanism of injury was associated with animal-related incidents such as falls from horses, animal kicks and assaults, etc (40%); farm machinery mishaps (46%); and falls (6%).

No federal safety standards apply uniformly to vehicles such as tractors, farm wagons, and forklifts.

Rural Americans, especially owners of family farms, have endured great financial stress in the past few years. Farm parents from necessity may have had to rely on their children as part of the essential work force. On farms, the highest rate of injury is found in young people 10 to 19 years of age. Injuries occur most frequently to boys in all injury categories.

RECOMMENDATIONS

The magnitude of this problem and its implications for children in rural America require prompt action. Prevention of unintentional injury should be addressed in several ways:

1. Use those agencies familiar to farmers to improve education in hazard reduction and proper equipment usage.
2. Organize an injury prevention program that includes the teaching of farm safety as well as a first aid course as a continuing curriculum to primary through high school students in rural communities.
3. Increase public awareness of the hazards of rural living by (a) teaching first aid to laymen to decrease injury severity, and (b) improving access to existing facilities (eg, 911, public health, local physicians, and health care facilities).
4. Develop subregional and regional trauma centers to improve emergency care, medical assessment, communication, and access to facilities for children and adolescents residing in rural areas.
5. Improve education and training in pediatric trauma for physicians, emergency medical technicians, and emergency personnel.
6. Establish data collection systems for farm and rural injuries so that specific problems and concerns can be addressed.

7. Promote voluntary or legislated safety standards for farm equipment and develop inspection systems that apply to all farms regardless of size or number of employees. (The Occupational Safety and Health Administration is charged with inspecting only those farms having ten or more non-farm employees.)

8. Encourage research and development of less hazardous farm equipment, including practical modification of new equipment and alteration of present machinery and practices.6

REFERENCES
### Rural Injuries
*Pediatrics* 1988;81;902

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