Farm Worker Injuries Associated With Bulls

NEW YORK STATE 1991-1996

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Work related injuries are believed to account for the largest single cause of lost work time and human suffering in agriculture and related industries (Fretz, 1989). Injury surveillance studies provide information useful in prevention evaluation and strategies. Many studies have focused on machine related injuries. However, in a recent study of occupational injuries on dairy farms, 32% of injuries reported were related to animals (Pratt, 1992). Another study found that 87% of animal related occupational injuries were associated with cows, and 3% with bulls (Layde, 1996). Bulls, which constituted 3% of cattle census, were responsible for 14% of cattle injuries in a study conducted in Kentucky (Auslander, 1994). The size of these animals (some breeds of bulls weigh up to 3,000 lbs., or twice the weight of many cows) and their unpredictability makes them very dangerous to handle.

From 1991 to 1996, the Occupational Health Nurses in Agricultural Communities (OHNAC) surveillance program* in New York State conducted investigations of farm injuries to determine their nature and characterize the associated risk factors. The objective was to develop preventive measures. Of 783 total incidents, 101 (13%) were animal related: 76 (10%) involved cattle and 19 (2.4%) involved bulls. The bull inflicted injuries differed from cow injuries in both type and circumstance. This study describes the types of injuries related to bulls, the work time lost as a result of these injuries, and methods for reducing their occurrence.

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METHODS

Data Collection

Under the OHNAC surveillance program, New York State is divided into three regions, each covered by a nurse based in an occupational health clinic. Information about farm accidents is obtained by the supervising nurses from health care providers, local cooperative extension agents, the news media, and other sources on a non-mandatory basis. Upon hearing of an incident, nurses, frequently accompanied by an agricultural engineer or a social worker, visit the farm and record relevant information. This information is entered into a common database. In addition, the nurses provide referral support regarding rehabilitation, financial aid, social services, and recommendations about preventive measures relating to farm safety.

Database Information

The database contains a range of farm incidents from minor to life threatening to fatal. Information about the farms, victims, injuries, activity performed, work experience, location, and immediate cause of the incident, along

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TABLE

Occupational Status and Number of Injured Workers

Occupational Status	Number of Full Time Farmers	Number of Part Time Farmers
Farmer	10	1
Spouse of farmer	1	0
Employee	5	0
Volunteer	0	1
Family member	0	1
Total	16	3

with the availability of safety equipment, is recorded. The health care provider, treatment, and lost work time also are recorded. Lost work time is measured in days, weeks, and months.

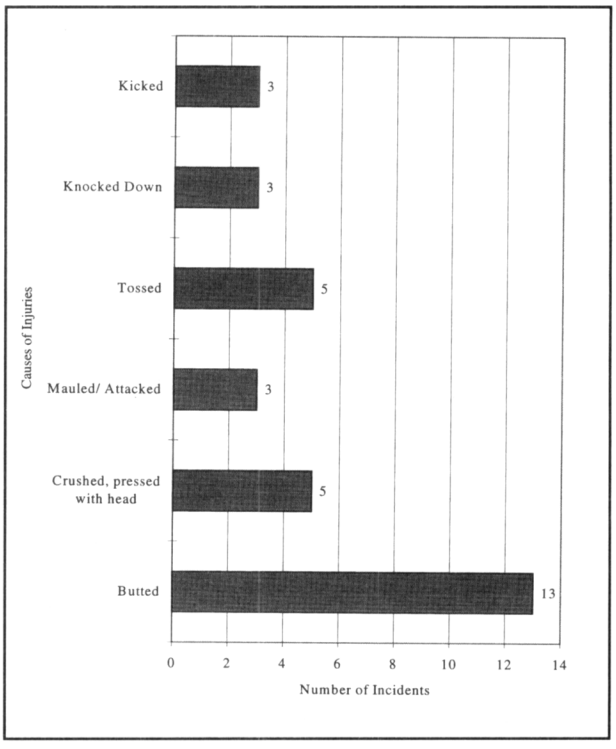

Figure 1: Causes of injures related to bulls (n=19). Many incidents had more than one cause of injury.

RESULTS

Demography of Victims

The victims included a total of four women and 15 men between 17 and 73 years old. Four victims were under 30 years old, 10 were between 30 and 50 years old, and 5 were over 50 years old.

Ten victims were full time farmers and 5 were full time employees, and the 17 year old was a farmer's family member (Table). The remaining victims comprised 1 spouse, 1 part time farmer, and 1 volunteer worker.

Of the 13 farms for which information was available, three farms ranged in size between 1 and 125 acres, 9 between 200 and 500 acres, and 1 was 1,000 acres. All victims for whom information was available claimed to have 4 or more years of farming experience, and, except for1 beef farmer, all were engaged in dairy farming.

Bull Incidents

Prior aggressive behavior was recorded in 5 of 19 incidents. One bull, which injured 2 people (one of which was a fatality), had been personally raised by the victims as a pet. This was 1 of 6 incidents in which the animals were being transported for sale or other purposes. In 7 of the incidents, the victim's attention was directed at other cattle (i.e., moving, milking, or injecting a cow, heifer, or calf). Four of these incidents took place in a pen or freestall area. Three incidents occurred during feeding in a fenced outside area. In 2 of these, 1 victim had broken his custom of using a tractor for this purpose, and the other was not carrying his customary pitchfork.

Incidents were described as head butting (13 cases), "mauling or attacking" (3 cases) (Figure 1), tossing (5 cases), crushing or pressing with the head (5 cases), or being knocked down and kicked (3 cases each). A single goring incident occurred while the unsuspecting victim, an owner of 12 bulls, was attacked from the rear while walking in the barnyard.

In seven of the incidents, the bull had access to the freestall barn or was roaming free in a pasture. In three other incidents, the bull's freedom was attributed to a broken fence.

Injuries

The bulls inflicted multiple injuries; the most serious are listed in Figure 2. Most frequently injured body parts included the legs and chest, with fractures and contusion being the most common types of injury.

One chest injury, caused by repeated ramming against a parked tractor, resulted in immediate fatality for the 22 year old victim. One 52 year old man, who received surgical treatment for multiple fractures after being forced to the ground by a 2 year old bull, suffered acute, ill defined, cerebrovascular disease 3 days later. A 37 year old farm worker suffered multiple fractures of the femur as a result of being butted by a bull that "went crazy." Another 26 year old male awaited recovery from surgery on his remaining testicle in order to assess his fertility. Injuries sustained by the other victims were less severe.

Lost Work Time

All of the victims lost work time. This was part of the selection criteria. Six (33%) of the victims returned to work within 1 week (Figure 3), and 8 (44%) returned within 2 weeks. After 2 months, 14 victims (78%) had

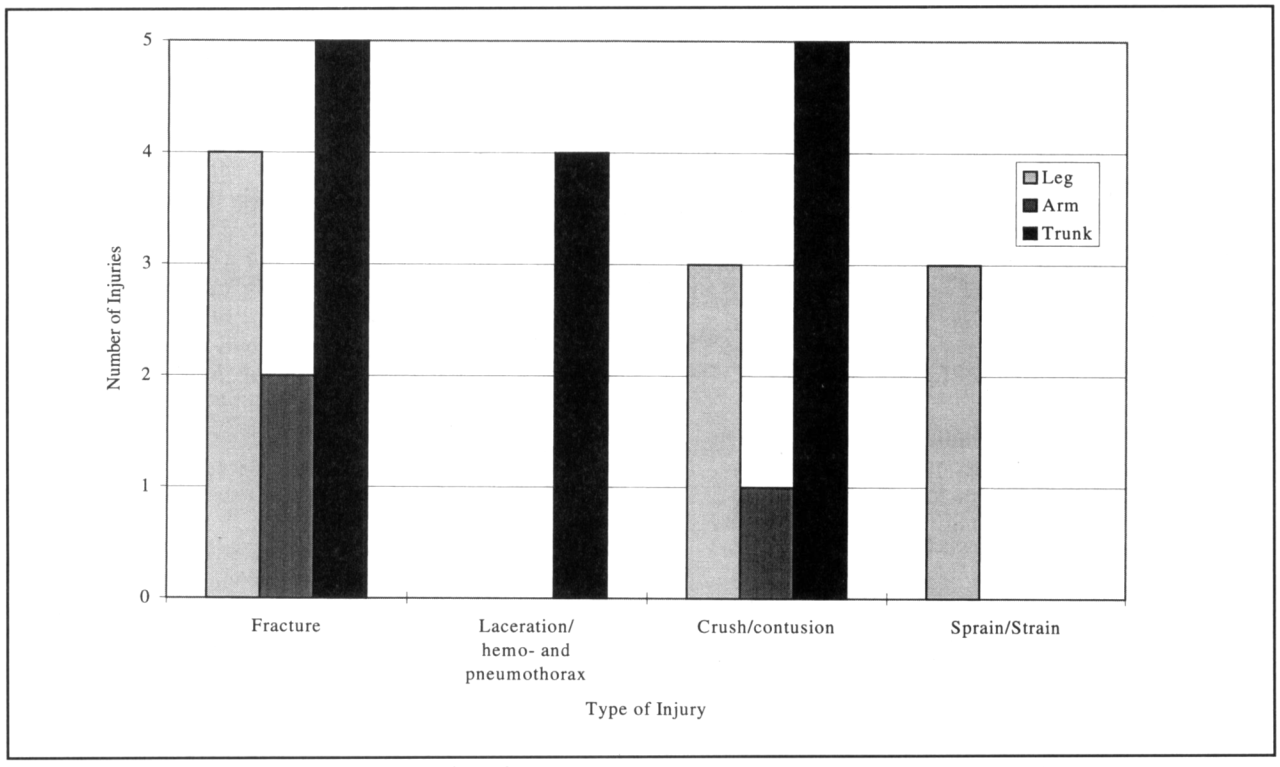

Figure 2: Types of injuries caused by bulls (n=19).

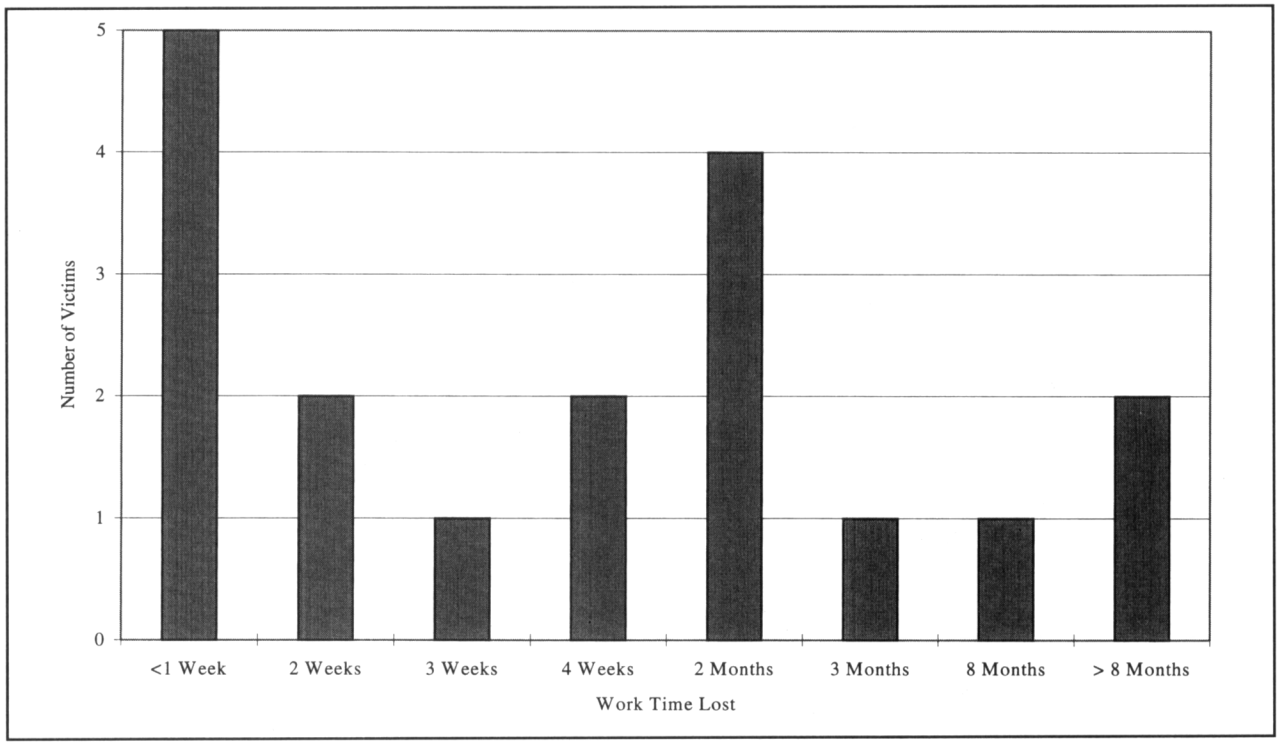

Figure 3: Lost work time lost by victims of bull injuries.

returned to work. Of the remaining 4 victims, 1 planned to return to work within 3 months, 1 anticipated being away from work for 1 year, and at the end of 8 months, it was not clear whether the other 2 would return to farm work. Hospital stays included 2 for 1 month, 1 for 8 months (involving the cerebrovascular incident mentioned above), 4 for 1 night, 1 for 4 nights, 1 for 10 nights, and 1 for 12 nights.

IN SUMMARY

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1. Although cows greatly outnumber bulls on dairy farms, bulls account for 25% of animal related injuries in a surveillance study of agricultural injury. In addition, bull injuries are more severe.
2. Because of their size and unpredictable behavior, bulls, especially those over 18 months of age, must be handled with extreme caution.
3. Important risk factors for the observed incidents were working alone and not having an escape route.
4. Bulls should be dehorned and confined in specially designed facilities to avoid human contact during feeding, watering, exercising, or breeding.

DISCUSSION

The incidents gathered in this study provide an opportunity to examine in detail the circumstances and the nature of animal related farm injuries and to assess the consequences in developing preventive measures. Although only a small number of bull incidents were recorded, the spectrum obtained served as a basis for evaluating prevention strategies.

The bull inflicted injuries were more severe than those with cows (Casey, in press). Bulls mainly inflicted injuries to the legs and trunk, whereas cows mainly injured victims' heads and arms. Of a total of 19 incidents involving bulls, 1 fatality was recorded, 1 injury was anticipated to require 1 full year before recovery, and 2 injuries were a high risk for permanent disability. This reflects an unacceptable incidence of severe injury.

Working alone and not having an escape option were important risk factors for the reported incidents. The practice of keeping bulls on the farm is not recommended because a bull can never be trusted. However, convenience and economic considerations encourage the practice of keeping a "clean up" bull to service cows when the alternative—artificial insemination—has failed. Basic standards for keeping a bull recommend dehorning the bull and confining it in specially designed facilities to avoid direct contact during feeding, watering, exercising, or breeding (Demmin, 1995; National Safety Council, 1989).

Although the occurrence of only one goring may indicate that dehorning is generally carried out, none of the bulls in the present study were kept in separate facilities. Precautionary measures are essential for prevention of life threatening and costly incidents. A herding dog may offer a diversion in case of attack. Other recommendations to help control a bull include:

- Never approach a bull in the open alone.
- Never get herded in the "blind" zone of a bull's vision.
- Doubly restrain the animal with a headlock stall.
- If the stall must be entered, use a rope through the bull's nose ring (Busch, 1986).

The handler should hold a heavy stick and make plans for a quick exit. Additionally, a victim thrown to the ground should never attempt to stand, but try to escape by crawling. From the experience of the victims described here, a victim should seek something substantial under which to crawl. If this is not possible, the alternative is to try to "play dead" until help arrives.

CONCLUSION

Proper facilities and worker education should be as important in farming as in other industries. Although bulls are notoriously dangerous, measures can be taken to reduce injuries resulting from their instinctive reactions to human handling. These measures should be publicized and implemented.

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