

the Democratic People's Republic of Korea. Two train cars loaded with ammonium nitrate exploded during a shunting operation. The blast obliterated the station and caused immediate damage within a radius of 4 km, killing 161 people and injuring approximately 1,300. The blast also destroyed approximately 1,850 homes, and >27,000 people experienced a lack of water supply as a result of the explosion.

**Methods:** The accident report and related content were investigated through a website search. Also, in the case of South Korean assistance, preparation material was reviewed, including reports and press releases. Although it is difficult to obtain accurate information during a disaster situation, efforts were made to evaluate the overall disaster situation and medical assistance.

**Results:** The Korean International Foundation for Health and Development developed an emergency medical assistance team, the Yongcheon Emergency Medical Assistance Team (YEMAT), composed of 10 health-related organizations. YEMAT prepared medical personnel resources, drugs, equipments, and others. These materials (worth >3 million dollars) were sent to North Korea via airplane; however, the medical team could not enter North Korea. More than 15 governments and non-governmental organizations from about 15 countries supported North Korea during the acute phase of the event.

**Conclusions:** In the case of a large technological event in a confined area, the impact is strong and public health is of utmost importance. Early international cooperation and coordination are required for health assistance and the optimal method of evaluating the situation should be developed despite a lack of complete information.

**Keywords:** disaster; explosion; information; medical assistance; North Korea; response; train

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### Injuries on the Farm: Fertile Ground for Injury Prevention

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Agriculture remains among the most dangerous occupations in North America. Despite modest gains in survival during recent years, at 21 deaths per 100,000 workers, agricultural injuries are second only to mining injuries as an occupational cause of death. The causes of both fatal and non-fatal farm-related injuries are multi-factorial, but can be grouped arbitrarily into three general areas: (1) environmental; (2) equipment-related; and/or (3) human factors. In addition, there are significant differences in injury patterns and injury risk related to age, gender, farm type, and location. Environmental issues include animals, toxic chemicals, silos, polymicrobial wound contamination, and delays in provision of definitive care. Equipment dangers exist on virtually all farms and include tractors, the leading cause of death, as well as power take-offs (PTOs), augers, balers, cutters, and moving chains, belts, and other devices. Safety equipment designed to protect the user is effective, but may break and not be replaced. Human factors include

long hours, fatigue, risk exposure at the extremes of age, alcohol use, falls, and failure to wear protective garments, and eyewear.

Farm workers and those who live on farms, including children, are exposed to a highly hazardous environment, and most farms, because they employ <10 workers, do not fall under the [US] Occupational Safety and Health Act (OSHA) regulations. Therefore, farm safety is not mandated, but must be promulgated through safer equipment design, incentive programs, and education. Examples of safer equipment design include protective shields and cages for PTOs and augers, roll-over protection devices for tractors, and improved ergonomics. Incentive programs link reductions in insurance premiums or workman's compensation costs with participation in safety and training programs directed at farm-specific activities and/or equipment use. Education is most effective when defined within the context of the Health Belief Model (HBM), originally described by Rosenstock (1974). The HBM defines costs and benefits, emphasizing the consequences of failing to change behavior. Because the costs are so high in terms of loss of life, injury severity and the impact on farm productivity, several studies have demonstrated that the use of the HBM is a valid approach to improving farm safety. Safety checklists, farm "walkabouts" to identify potential hazards, and farm safety health fairs all raise awareness of the risks unique to farm life. In this report, specific reference is made to the type of hazard, the risk to the farmer/farmworker, and the injury sustained therefrom. Emphasis is placed on hazard reduction and how best to implement an appropriate injury prevention program.

In summary, the lethality of farm injuries and the impact of disabling injuries on the farm, farmer, and farm family warrant continued emphasis on farm-specific injury prevention.

**Keywords:** deaths; education; equipment; farm; hazard reduction; Health Belief Model (HBM); incentives; injuries; insurance; prevention; safety

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### Theme 17: Landmines

*Chairs: Berndt Schneider; Ron Stewart*

#### What More Is to Be Done after the Nairobi Review Conference in December 2004: Inventing the Wheel Twice?

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**Introduction:** During the anniversary Congress of the World Association for Disaster and Emergency Medicine (WADEM) in the late 1990s; WADEM's Declaration on Landmines was approved by its General Assembly in Mainz.