

Pneumatic Nailer (“Nail Gun”) Injuries in Washington State, 1990-1998

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Executive Summary:

Tracking injuries caused by a specific piece of equipment can help us better understand the use and misuse of that equipment. With this information, outreach materials for companies, their workers and enforcement/consultation personnel can be developed. Outreach materials will help companies, workers, and enforcement/consultation personnel better understand the nature of the hazards and methods to control and eliminate those hazards. By reducing hazards in the workplace, the number of injuries will also be reduced. This report focuses on injuries due to the use of "nail guns". It outlines the types of injuries, costs incurred, where the injuries occur, and what can be done to help prevent these injuries.

Accepted workers' compensation claims for injuries involving nail guns in the Washington State Fund system were used in this report. Claims were included if the injury took place between January 1, 1990 and December 31, 1998. The claims are described by incident type, the nature and body part of the injury, and by the nature of the work being done. The nature of the work is defined by the worker's occupation and Washington Industrial Classification (WIC) code and by the company's industry. Incidence rates and the prevention index are calculated for these groups. Rates are investigated over time by WIC code.

Between 1990 and 1998, there were 3,616 accepted Washington State Fund claims associated with nail gun injuries. The average annual cost is \$692,488/year, with an average cost per claim of \$1,723. Only 20% of the claims required more than 3 days from work, but those claims had an average number of 61 days away from work.

Over the period studied, on average the claim rate rose steadily 2.3% each year. On average, there is one nail gun injury each day that results in an accepted Washington State Fund claim.

The construction industry accounts for 73% of claims associated with "nail gun" injuries and 60% of the timeloss days. Wood frame building construction, carpentry, building construction-not otherwise classified and roofing respectively accounting for 55%, 9%, 5% and 2.5% of these claims. In the manufacturing industry sector, wood products manufacturing, cabinet manufacturing, and factory built housing had the most claims with 7%, 2.8%, and 2% of the total "nail gun" claims, respectively. On average, workers in wood frame building construction, factory built housing, and fence erection respectively had a 2%, 1.5%, and 1.3% chance of filing a nail gun-related claim each year. In 1991, 2.5% of wood frame building construction workers' claims were due to nail gun injuries. In 1998, that percentage had more than doubled to 5.7% of the claims.

Nail guns have become a popular tool, frequently used in wood frame building construction and in the manufacturing of wooden-goods. These pneumatic tools greatly decrease task times as well as the repetitive stress associated with using a hammer. Their increased popularity in the 1990's appears to have triggered an increase in injuries due to their use. In order to prevent injuries to the worker using the tool as well as co-workers in the vicinity, there are numerous steps that can be taken to reduce the risk.

As with many health and safety hazards, reducing the number of injuries can be accomplished with a combination of engineering controls, administrative controls, and the use of personal protective

equipment. Because of the mobile nature of these tools a combination of these controls is necessary for their safe use.

Some key elements for safe use of nail guns are listed below:

- Use the sequential trigger until a safe record of use and experience with the tool has been developed.
- Manufacturers should work with users and health and safety professionals to better balance the speed and productivity of using the “bump” mode with the accuracy and potential for fewer acute trauma injuries using the “sequential” mode, taking into account the possibility for developing “trigger finger”.
- All users should be trained in the safe use of pneumatic nailers and demonstrate safe use.
- Never carry the tool with a finger on the trigger.
- Never assume the tool is empty.
- Never point the tool at anyone, even if it is empty or disconnected from the air supply.
- Keep your free hand out of the line of fire.
- Keep co-workers out of the line of fire.
- Always disconnect the tool before clearing jams or performing other maintenance.
- Always wear safety glasses.