

stations when the equipment failed and fatally injured them. Five fatalities were due to violence in the workplace. This case review was used as an integral part of framing the company's recently Safety Leadership Initiative.

H4.6 Traumatic Work-Related Fatal Injury Amongst Maori of New Zealand 1985-1994—McCracken SB, Feyer A-M, Langley JD, Broughton J

Maori are the indigenous people of New Zealand, and represent 15% of the country's population. Despite the implicit assurances of equal health status contained within the nation's founding document, the Treaty of Waitangi, Maori are disadvantaged in almost every measure of health. Because of flawed identification processes, both in numerator and denominator data, little progress has been made in understanding the true extent, nature and distribution of work-related fatal injury among Maori. The present study aimed to more accurately describe the problem, identifying specific circumstances associated with Maori deaths that will assist in developing preventive strategies for Maori.

Coronial files with an ICD 9-CM E-Code between E800 and E989 and a decedent aged 15-84, were reviewed as part of the study of all New Zealand work-related fatal injuries occurring between 1985 and 1994. Basic descriptive and causal information concerning each incident were abstracted and coded. Maori were identified within this dataset by either the classification recorded upon death certificates or if they were identified as Maori within the Coroners files.

In all, 91 Maori deaths were identified within the 817 work-related fatalities. Notably, agreement between the data sources used to identify ethnic status was only around two-thirds. Crude rates were significantly higher for Maori and did not show the significant linear decline across years, compared with the non-Maori rates. Rates adjusted for employment patterns based on ethnicity did not differ.

This study is one of the first attempts at investigating work-related injury for an indigenous population. New Zealand is unusual in that a treaty exists which includes obligations regarding equity in health status for its indigenous population. The present study confirms that inequities exist. Moreover, the study underscores the need for better data if these inequities are to be properly addressed.

Session: H5.0

Title: International Comparison

Category: Other Topics

Moderator(s): Gordon Smith

H5.1 A Comparison of Work-Related Fatal Injuries to Agricultural Workers in Australia, New Zealand and the United States—Horsburgh S, Marsh S, Feyer A-M, Langley J, Stout N, Williamson A, Driscoll T

Recent studies of work-related fatal injuries in Australia, New Zealand and the United States have shown agricultural workers to be at considerably higher risk than the national average. What is striking when the figures from these studies are compared is that while the rate of fatal injury has decreased substantially in recent years for these workers in the United States, there has not been any sustained decline in New Zealand or Australia.

The objective of the current study is to examine work-related fatal injuries in agricultural workers from these three countries to uncover possible explanations for the apparent differences in performance. Data has been collected from Australia and the United States for the period 1989-1992 and, to overcome low numbers, for 1985-1994 in New Zealand. Data were obtained from coronial records for Australia and New Zealand and extracted from the National Traumatic Occupational Fatalities surveillance system in the United States. Considerable effort has already been expended to harmonise the data from the three countries so that valid comparisons can be made. This includes applying a standard case definition and creating comparable groupings for occupation, industry and other incident variables. Where applicable, these have been applied to both numerator and denominator data so that rate comparisons can be performed.

At the current time the harmonisation of the datasets is nearing completion. Detailed analyses comparing incident variables, including mechanism, cause of death and agency, will be completed. It is hoped that the investigation of similarities and differences between agricultural workers in the three countries will generate hypotheses to explain the differences in their rates of fatal injury and, in doing so, provide direction for future injury control strategies.

H5.2 Comparing the Causes of Work-Related Fatal Injuries in Australia, New Zealand and the United States Using Narrative Information—Williamson A, Feyer A-M, Stout N, Driscoll T

Narrative or text-file information is often collected to supplement injury data in large-scale datasets. Often, however, this style of information is not analysed because of uncertainty about the quality of the analysis. The opportunity arose in this project to investigate systematically the effects of coding of the circumstances of fatal occupational injury using

narrative analysis compared to analysis using standard methods. This project was part of the three country collaborative study of occupational fatalities, which compared population data from New Zealand, Australia, and the USA. In these datasets, both Australia and new Zealand used the same standard code for mechanism of injury, but the USA did not, yet all countries included narrative information on the circumstances of the injury in their datasets. It was possible, therefore, to develop a narrative-based text search using the existing mechanism coding for Australia and New Zealand which was maximally accurate in reflecting the already-coded mechanism information. It was then possible to apply the narrative search to the US data as well, in order to compare the circumstances of injury in each of the three countries. The results showed that narrative-based coding produced the same patterns as the standard coding. Hit by moving objects and falls were the most common mechanisms of injury for each country. Some types of mechanisms, however, could be represented more accurately than others. The main errors in the narrative analysis were lack of sensitivity in picking up cases rather than poor specificity of coding.

H5.4 Older Workers: A Comparison of Work-related Fatal Injuries in Australia, New Zealand, and the US—
Marsh SM, Horsburgh S, Usher H

A recent study comparing work-related fatality data from Australia, New Zealand and the US indicated that workers over 55 years of age in all three countries had higher fatality rates than workers 16-54. The objective of the current study is to compare data from these three countries in more detail for workers 55 and older to identify the specific agents leading to the high fatality rates. For this study, data from the US (the National Traumatic Occupational Fatalities surveillance system) and Australia (Coroners' records) were included for 1989-1992. Because of the small number of cases, data for a longer time frame (1985-1994) was included for New Zealand (Coroners' records). Cases were included if they involved a decedent who was fatally injured while at work, where death resulted from an unintentional cause or homicide. Work-related injuries on the road involving traffic or work-related injuries to bystanders were excluded. To permit for more comparable groupings, occupation and industry classifications were substantially customized. To allow for rate comparisons, equivalent modifications were applied to both numerator and denominator data. While specific results for this comparison have not been organized, the initial comparison indicated that as age increased, the rate per 100,000 workers increased for all three countries. In general, when comparing rates by age for workers 55 and older, rates per 100,000 workers were highest in Australia and lowest in the US. More detailed comparisons for workers 55 and older will be provided by industry, occupation, cause of death, and specific mechanism of death. Similarities and differences from these comparisons will be highlighted. Examining similarities in the circumstances of fatal injuries may help identify hazards

common to all three countries, while differences in the circumstances of fatal injuries may allow for the identification of possible directions for prevention.

H5.5 Occupational Injury Mortality Rates: Comparison of New Zealand, Australia and the United States—
Feyer AM, Williamson A, Stout N, Driscoll T

A major impediment to international comparisons of the nature, distribution and causes of work-related fatal injuries has been the lack of comparability between data sets, both in terms of inclusions in aggregated statistics, and also in terms of classifications used to group the data on critically important dimensions such as occupation of the injured workers. The present study aimed to compare work-related injury deaths in New Zealand, Australia and the US, using national collections based on vital records covering the decade 1985 - 1994. Fatal injuries of persons aged 16 to 84 years, where death resulted due to unintentional causes or due to homicide were included, while work-related motor vehicle traffic crashes and work-related injuries to bystanders were excluded. Classifications of occupation and industry were harmonised to produce comparable groupings in both numerator and denominator data.

The rate of fatal injury declined in each country over the study period, but was consistently highest for New Zealand and lowest for the US. The distribution of age specific rates was remarkably consistent, with a very marked increase in rate after 60 years of age in each country. The distributions by occupation and industry were also remarkably consistent, with the highest rates evident among Agricultural workers (including farming, forestry and fishing) and in the category covering trade workers, machine operators and labourers.

The relative ranking of the three countries in this comparison differs to that based on data published through routinely collected data such as that published by the ILO, highlighting the importance of comparability of data sets. The similarity of the distributions of deaths by age, occupation and industry suggest that some of the risk factors for work-related injury deaths will be common to all three countries, at least as far as indicated by analysis of broad groupings for industry and occupation.

Session: H6.0

Title: State Experience

Category: Other Topics

Moderator(s): James C. Helmkamp

H6.1 The Epidemiology of Serious Occupational Burn Injuries in Alabama—Taylor AJ, McGwin G, Smith DR, Birmingham BR, Rue LW

Introduction: Patterns of occupational burn injury vary by geographic region; however, there are no studies in the



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ABSTRACTS

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