



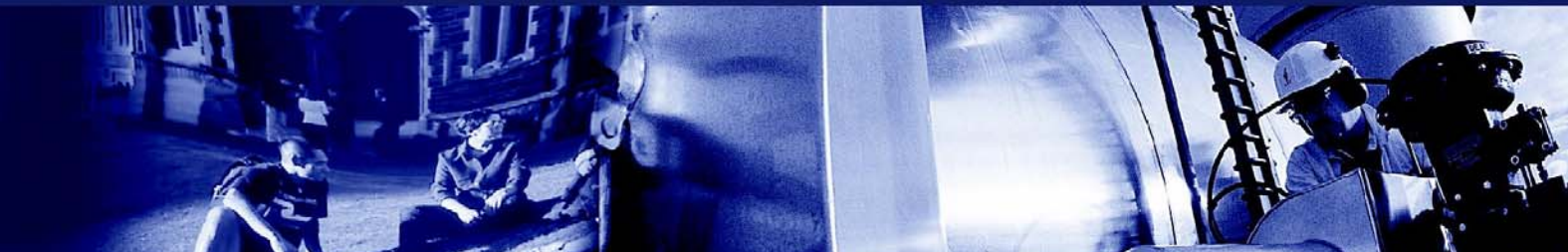
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Te Whare Wānanga o Ōtago



Otago



***What are the major occupational
health and safety problems today?:
Occupational Injury***

John Langley

Symposium on Priorities in
Occupational Health and Safety
Wellington 4th September 2002

Primary problem

- The primary problem is the absence of adequate evidence base to inform practice and policy.

Making progress in reducing injury

- Identify and prioritise problems
- Quantify and prioritise risk factors
- Identify/develop, implement, and evaluate interventions



PHOTO: GLENN CONWAY

Police officers are dwarfed yesterday by the 80-tonne quarry dump truck involved in the fatal collision at the Milburn
Limeworks on Wednesday. Behind the truck to the left is the other vehicle involved. OST 7/9/01

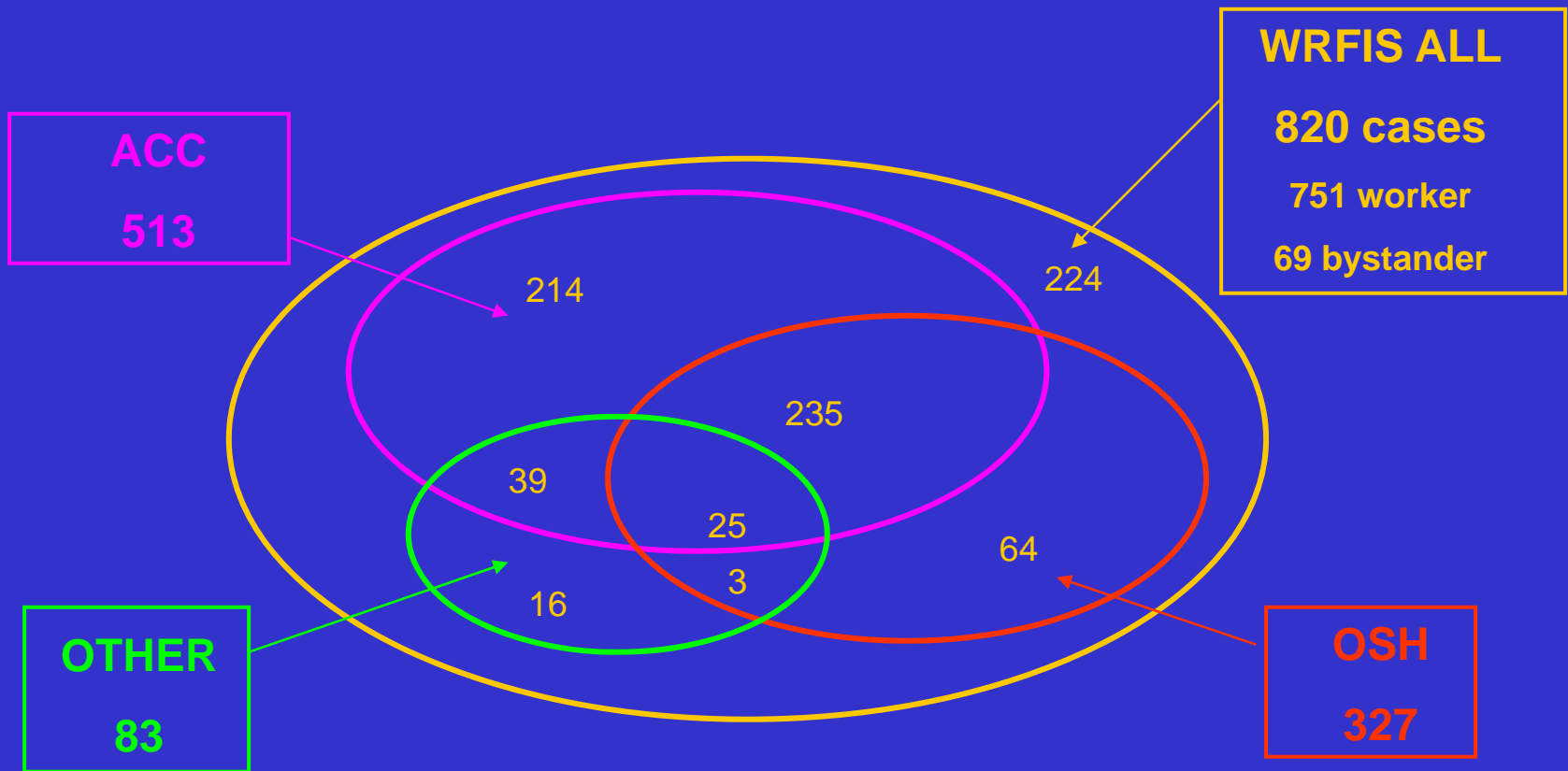
1. Identify and prioritise problems

- Magnitude of the problem
- Risk to workers
- Amenability to prevention
- Injury severity
 - Threat to life
 - Threat of disablement
- Amenability to prevention
 - Cost effectiveness
 - Likelihood of adoption

Fatalities

- We have no system in place which would allow us to reliably determine the number of work-related fatalities each year.

Agency coverage of the WRFIS dataset



Fatalities

- Estimates of work related traffic crashes are particularly elusive.
- Information on the circumstances of of deaths is variable in completeness and quality.

Fatalities: ATV's

It is often not clear from examination of coronial files whether:

- A 'motorcycle' had 2, 3, or 4 wheels
- It was towing a trailer
- Was on a slope
- It had adequate tyre tread
- It was 4 wheel drive

Non-fatal work related injuries

- Ironically, relative to fatalities, we have more readily accessible data in the form of ACC compensated claims.
- Coverage is an issue
 - Data from companies in “Partnership Plan” not included
 - 165 companies, 250,000 employees

Non-fatal work-related injuries: severity: threat to life, disablement

“The injury coding used by ACC is very wide in its categories and of limited use in differentiating the severity of the injury. For example, the injury code of "Soft Tissue Injury" covers injuries ranging from strained muscles to dislocated discs to paraplegia and tetraplegia.”

(source ACC's website -August 2002)

Non fatal injuries: inpatient hospitalisations

- In theory we should be able to identify but completion of activity coding very poor.
- Recording of inpatients' occupation discontinued several years ago.

Priority occupations (based on risk or no.)

- Light plane and helicopter pilots
- Farmers
- Fishers
- Forestry
- Labourers
- Builders
- Drivers of mobile plant



LOGS MAY SWING
INTO YOUR LANE
DO NOT PASS



2. Quantify and prioritise risk factors

Work-related farm injury - a typical example of the state of the art.

Risk Factors for Farm Injury

- Guided by descriptive studies, often from incomplete databases.
- In some cases sufficient evidence to move directly to prevention (e.g, tractor roll-overs).
- In most cases more sophisticated understanding of aetiological factors is required.

Farm: risk factors: all injury

- Long hours
- Presence of non-residents
- Owner-operator
- Depression
- Taking of stomach or cardiovascular medication

Farm: risk factors: machinery injury

- Operating working with auger
- Most time spent on crops
- Male gender
- Being or having ever been married

Farm: risk factors: limitations of studies to date

- Very few studies
- Lack of statistical power
- Exclusion of non-residents
- Absence of farm safety inspections
- Limited range of potential risk factors studied

Farm: risk factors: applicability to NZ

While some factors may operate across cultures and commodity groups it is highly likely that most will vary according to:

- Agriculture practices
- Commodities produced
- Climate
- Growing season
- Culture



Ambulance staff tend to the injured man after yesterday's fatal accident at Carisbrook. In the background, firefighters inspect the roofing panel which collapsed, sending two men plummeting to the ground.

ODT 14.01.98

3. Identify/develop, implement and evaluate interventions

“The safety literature and anecdotal evidence suggest that many interventions in occupational safety are implemented with the sincere hope that they work, but with a lack of solid evidence of their effectiveness, especially in the area of safety training and education”

(Source: Shannon et al, Safety Science 31 (1999) 161-179)

A systematic review of farm safety interventions 2000

- 118 studies potentially meet study criteria.
- Most of the studies reviewed did not meet the usual methodologic criteria of systematic review.
- Consequently to best characterise the state of farm safety research all designs were accepted, including those without comparison groups, and inadequate description of methods.

Farm Safety Interventions

- 25 studies met the very loose inclusion criteria
- 11 studies involved farm safety education
- 5 multi-faceted: environ mods, farm visit
- 9 described intervention-but no results!

Safety education

- Targeted at farm families
- Typically dissemination of farm safety info through: lectures, posters, demos
- Typically pre and post intervention measures-only one study measured injury
- Many reported positive change in attitudes, knowledge, intentions
- Difficult to interpret: no comparison groups, reliance of self-reported outcomes.

Multifaceted interventions

- Targeted at farm operators
- Farm audits by specialists, who provided recommendations
- Some participated in farm safety education
- Two studies assessed changed in injury incidence
- Only randomised design
- All reported some positive changes



PHOTO STEPHEN JAGUIERY

Investigating the scene of an industrial accident in Dunedin, yesterday are (from left) Fire Service Senior Fire-fighter Greg Casey, Fire Safety Officer Roy Hoogenraad, Central Senior Station Officer David Marsh and Fire Safety Officer Barry Gibson.

OST 30/01/98

Man in serious condition after industrial accident in Dunedin street

Badly burnt worker screamed for water

Conclusion

- We need to improve our “administrative “ databases to facilitate better and rapid problem identification
- More sophisticated methods need to be used for identifying risk and protective factors and their contribution
- There is need for more rigorous evaluation of interventions



Injury Prevention Research Unit is supported by:

