Literature Review of the Relationship between First Aid Training and Injury Rates

In July 2006 a search of the literature was conducted to find articles describing research studies that sought a relationship between first aid training and a decrease in injury rates among the trained population. The search was conducted of the Medline database from 1966 to June 2006 and the Web of Science database. Keywords used to search were: first aid and injury rates, and accident prevention or injury prevention. The major providers of first aid training in Canada were contacted regarding their knowledge of unpublished studies on the topic. This search plus a review of references in articles found identified twelve articles which discussed the effect of first aid training on injury rates.

In 1973 Miller and Agnew report the results of saturation first aid training to the community of Orillia, Ontario. Over a three year period 5,514 people out of a population of 23,000 were trained. As reported by Atherley (1973) interim indications found that the accident rate in Orillia may have dropped by 20 per cent and that there was a real improvement in safety consciousness both on and off the job. Interview data found that while those who were trained felt competent to deal with emergencies and that they stated they were more careful both on and off the job and had an increased awareness of safety, these attitudes were not usually accompanied by changes in behaviour such as wearing safety equipment or using seat belts. This implies that it is easier to elicit verbal responses about safety than to change relevant behaviour. Work in industrial settings found that there was an apparently strong relationship between first aid training and reduced industrial accident rates. Other factors that exist in the work environment likely support the attitudinal changes to become behavioural changes resulting in reduced injury rates.

McKenna is critical of these findings (McKenna, 1977). He finds that the data did not allow for comparison of risk exposure, that those who took the training may have already been 'safety motivated', that the first aid training included safety training, and that the campaign included messages stating that those who were trained would be safer because of the training. Considering these shortcomings, McKenna conducted research in the U.K. to reduce these factors. He then found that attitudes to risk and danger did not change as much as those to injury suggesting that first aid training motivates people to avoid injury rather than become aware of danger. Training that includes both first aid and safety training could both motivate workers to be safer and instruct them in correct safety behaviours.

Glendon and McKenna (1978) summarize that there exists contradictory evidence on attitudes towards the effect of first aid on safety and accident reduction. First aid trained respondents are more likely to consider there to be no causal link between first aid training and safety. Yet first aid-trained respondents are significantly more likely than non-trained respondents to rate first aid knowledge as an important factor in influencing home safety.

Glendon and McKenna's paper from 1985 entitled *Using Accident Injury Data to Assess the impact of Community First Aid Training* tells that as long ago as 1938 first aid has been considered a means of injury prevention. Their study conducted within the community in Leek, Staffordshire, England reached similar findings to research conducted in factory settings, finding that first aid training did produce statistically significant reductions in injuries. The study also supports the hypothesis that first aid-trained persons can influence the likelihood that others close to them, especially those aged 15 years and under, will have reduced injury rates for a period of time after the training. This is particularly evident in the home and school settings. They conclude that a community will benefit from having a relatively large percentage of persons trained in emergency first aid, in particular if mothers and others in the 21-40 year age group receive the training.

In 1981 McKenna and Hale (Mckenna & Hale, 1981/5) studied the effect of emergency first aid training on the incidence of accidents in factories in Birmingham, U.K. Four hour courses were attended by groups of workers at two factories. The experimental group's injury accident rates improved relative to the control subjects. This improvement was shown despite the experimental subjects becoming more willing to report their minor injuries.

Lingard (2000) specifically discusses the effect of first aid training on Australian construction workers safety motivation and risk control behaviour. All participants attended a generic emergency first aid training course of 21 hours in length offered by St. John Ambulance Australia. The observations at the participants' worksites suggested that, for the most part, the first aid training had a positive effect on the occupational safety and health behaviours of participants. It also made them more aware that their own behaviour is an important factor in the avoidance of occupational injury and illness. It also appeared to reduce participants' willingness to accept prevailing levels of occupational safety and health risk and increase the perceived probability that they would suffer a work-related injury or illness. First aid training motivates participants to avoid occupational injuries and illnesses and improves their risk control behaviour. The implications are that first aid training can have a positive preventive effect in addition to traditional safety training and should be provided too all employees rather than just a few designated first aiders.

Five studies related to preventing injuries in children (Carter, Morgan, & Lancashire, 1995; Frederick, Bixby, Orzel, Stewart-Brown, & Willett, 2000; Kendrick, Marsh, Fielding, & Miller, 1999; McCallum, Conaway, Drury, Braune, & Reynolds, 2005; Ulione, 1997). The interventions in each of these studies included first aid training as only part of an overall injury prevention program. None reported any specific reduction in injury rates or other outcomes related to the first aid portion of the program. A fourth study involved general practitioners and their involvement in the injury prevention of children in their practices. One finding of interest is that practices providing first aid training for staff were also associated with an interest in injury prevention (Carter et al., 1995).

Nearly thirty years of study regarding the effect of first aid training on injury rates in specific populations shows that there is evidence that first aid training can change both attitudes and safety behaviours. Stronger evidence exists for the workplace than the

general community and first aid training combined with safety training appears more beneficial than first aid training alone.

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