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**An Analysis of the Trauma Management System in a
Predominantly Rural New Zealand Setting:
A Preventable Death Study**

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the degree of
Master of Business Studies
in Health Systems Management
at Massey University

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ABSTRACT

A one-year prospective study of all trauma deaths in the greater Manawatu region is reported on in this thesis. The aims of the study were to first, establish a database of the trauma deaths and second, to analyse trauma management systems within the region. A total of 56 cases satisfied the inclusion criteria for the 12-month study period. Deaths by category of trauma for the population were 31 (55.3%) road crash victims; 16 (28.5%) deaths due to suicide; five (8.9%) homicidal deaths; and, four deaths due to other causes, namely a fall, an electrocution, burns and one drowning following a head injury. Of these 36 (64%) were found by ambulance services to be 'in cardiac arrest' and five (8.9%) were 'not in cardiac arrest' but died later at the scene. One case died in transit and 14 cases (25%) died in hospital. Data on pre-incident factors such as alcohol, speed and safety practices showed that eight (24%) of the 31 motor vehicle related deaths had positive blood alcohol levels. Inappropriately high speed was an additional factor in three of these deaths as was the absence of safety equipment. Co-morbidity, where this existed, was also found to be a significant factor. Post-incident factors which influenced the fatal outcome of the incident included geographical location and ensuing access to the individual, the actual injuries sustained, and the provision of timely and appropriate treatment of injuries. An expert panel was convened to classify the deaths and evaluate the care provided by personnel in the trauma management system. The panel identified a number of pre-hospital and in-hospital deficiencies but determined that these deficiencies had no effect in terms of deaths. Of the twenty cases evaluated, eighteen deaths were classified as 'not preventable', one death was unable to be classified by the panel, and one death was classified 'possibly preventable'. If the trauma system in the greater Manawatu region had been flawless one life may have been saved – (5%) of the trauma death population. It is recommended that an efficacy study (encompassing both live and dead trauma victims) is conducted in the region to provide a more accurate perspective and evaluation of the trauma management system. The opportunity exists for further research to be conducted in an area with a similar geography and population distribution, also serviced by one second-level hospital, that does not currently have a regional trauma system in place.

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Confidentiality

Some cases included in the trauma death population may be identified through the inclusion of information provided in this thesis. This is not the intention of the author. It is requested that should identification of any victim occur, that confidentiality is respected.

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