

# Research Workshop Series

## Abstract

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**Presentation by:**

**Professor David Studdert**

(Melbourne Law School and  
Melbourne School of Population Health)

### ***Using Mortality Data to Understand the Effect of Laws and Legal Processes***

This workshop will present results of two recent studies from our group that have used data on deaths in Australia to shed light on the impact of a law (vehicle emissions limits) and a legal process (coronial death investigations).

The first study focuses on suicide. In Australia, annual suicide rates peaked in 1997 at 15 per 100,000 persons (about 2,700 deaths) and have been declining ever since. Much of that decline is due to a plunge in suicides by one particular method: asphyxiation by motor vehicle exhaust gas (MVEG). The incidence of MVEG suicide has decreased by nearly 70% in the decade to 2006. There has been speculation that this remarkable phenomenon has been driven by national laws in 1986 and 1999 that lowered permissible levels of carbon monoxide (CO) emissions in passenger vehicles, but the extent to which this theory is true is unknown. The objective of this ecological study was to test the theory by investigating whether areas of Australia with fewer noxious vehicles per capita experienced lower rates of MVEG suicide.

The second study focuses on the work of coroners. Death investigations are quite opaque processes. Inquests introduce a degree of transparency, but a minority ( $\approx 10\%$ ) of deaths reported to Australian coroners proceed to inquest and little is publicly known about the rest. This study attempted to get inside the "black box" of the coronial process in Australia by examining its impact on cause of death determinations. We hypothesized that it would be quite rare for the coronial process to introduce substantial changes to the cause of death presumed at that time of notification on the basis of police reports, initial medical opinions, and other circumstantial information. The hypothesis proved correct. The findings raise questions about whether the role of coroners' courts can be justified solely or principally by focusing on their function as establisher of causes of death, traditionally the coroner's core activity.