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A Summary Analysis of Police Deaths in Australia: Implications for Prevention

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Abstract

This paper summarises the dimensions and immediate causes of officer deaths on-duty in Australia from the establishment of police forces in the 19th Century to 2007. Official police records were used to identify the year and the immediate circumstances of deaths. The results strongly support an emerging international knowledge base about police deaths: that up to three-quarters are “accidental” and as few as one quarter the result of an attack by an offender; that the very large majority of accidents involve motor vehicles; that in the post World War Two period officer fatalities have been declining as a proportion of police numbers as a result of improvements in procedures and technology; and that further reductions are obtainable through stricter application of a wider range of prevention strategies. The paper concludes by mapping out some key strategies, including curtailing speeding in police vehicles; keeping police off the road at vehicle stops and roadblocks; and better risk management procedures in raids, sieges, arrests and service of warrants.

Background

Police are the gatekeepers of the criminal justice system and are the most visible representation of the state's power to both protect and control citizens. Police deaths – especially those at the hands of other persons – entail a direct challenge to the rule of law and government authority. Numerous occupations have much higher death rates, such as construction, mining and logging. However, police have amongst the highest rates for occupational homicide (Prenzler, 2006). Apart from the obvious loss of life and trauma to loved ones, police fatalities represent a resource loss to police organisations and the potential for fatal injury also represents a major source of stress for officers (Savery, Soutar and Weaver, 1993).

There is surprisingly little research on this topic despite the prominence of police studies in criminology, and despite the salience of fatal and near-fatal events in News broadcasts and fictional police dramas. Much of the broader literature on officer safety is focused on non-fatal assaults, but with implications of relevance to fatalities. For example, Kaminski and Sorensen's (1995) study of assault related injuries recommended correcting officers' misleading perceptions about risk and improving training in unarmed defensive tactics.

The small number of studies of police homicides has also produced useful findings. For example, in a review article, Mayhew (2001) reported that police homicides frequently involved offenders with personality disorders; and victims (police) who underestimated the risks they faced from offenders (relying too much on negotiation) or who breached procedures (such as failing to wait for back-up) (see also Chapman, 1997; Jose, 1995; Kurby, 2004). Research also shows that the large majority of police officer deaths from attacks result from injuries from firearms and occur in the following situations: arrests, interdicting in robberies, responding to disturbance and domestic violence calls, traffic stops, and investigating reports of suspicious persons (Carderelli, 1968; Edwards, 1996; FBI, 2007).

There are also very few studies on accidental deaths of police officers. In a US study, Pinizzotto, Davis and Miller (2002) found that vehicle accidents accounted for 63.9% of

the 344 accidental police deaths that occurred from 1996 to 2000. The next largest category, at 17.5%, involved being struck by a vehicle at a traffic stop or roadblock, or while directing traffic or assisting motorists. Accidental shootings accounted for 3.4% of cases. The researchers found that “diminishing physical skills” was a major contributing factor to accidents, as lessons from academy training gave way to over-confidence and complacency (Pinizzotto, et al, 2002:10; also Boylen and Little, 1990). High speed pursuits and careless driving – such as speeding unnecessarily and not making adjustments for unfamiliar or adverse conditions – are also major causes of accidental motor vehicle deaths (Payne and Fenske, 1997).

A summary analysis of 176 cases in New South Wales, Australia, covering the period 1862 to 1982, found accidents made up 71.5% of fatalities (42.6% motor vehicle and 28.9% other accidents) while deliberate shootings and other attacks accounted for 28.4% (Morris, 1985). A more recent Australian study examined 45 cases using police and coroner reports (Prenzler, 2006). The sources were uneven but highly detailed in many instances, with maps and eye witness testimony. The results showed that 77.7% of fatalities were accidents and 22.2% involved attacks. Recommendations included minimising the use of motorcycles, eliminating the use of radar that involves stopping and questioning drivers, placing severe limits on police speeding; and applying sophisticated, intelligence-based, risk management controls and better protective equipment in police interdictions. Compared to these Australian data, police officer deaths in the US involve a higher proportion of attacks – more in the order of 43% attacks and 57% accidents. This is possibly attributable to the great prominence of firearms in police deaths in the US (FBI, 2007).

Researchers have also noted that police deaths since the 1960s have tended to remain either at a stable or declining rate despite increases in crime from the 1970s to the 1990s, and despite the availability of firearms and increased high risk activities such a drug raids. It appears that improvements in procedures, body armour and training have contributed to this counter-effect (Brown and Langdon, 2001; NIJ, 1998; Mayhew, 2001; Swanton, 1987).

Method

The current study sought to extend knowledge about police fatalities and investigate implications for prevention with a large scale summary national study. Given the findings of previous research, the study addressed four research questions (RQ):

RQ1: Has there been variations in the rate of police deaths caused by accidents and attacks between 1838 and 2007?

RQ2: Can variations in the rate of police deaths over time be explained by changes in the types of accidents and attacks?

RQ3: How does variation in the rate of police deaths caused by motor vehicle or motor cycle accidents compare with the rate of road fatalities in the general population?

RQ4: Do the specific circumstances of more recent deaths (1948 to 2007) offer any insights into how police deaths can be prevented?

The study required a dataset to be created that contained information about occupationally related police deaths that had occurred in Australia since each jurisdiction's police force was established. Australian policing is State-based, with a small federal force and no local police. Data were obtained about police fatalities in all Australian jurisdictions from the National Police Memorial's (NPM) online *Honour Roll*, which commemorates police killed while on-duty or who died as a result of their duties (NPM, 2007:1). For inclusion on the NPM *Honour Roll* the circumstances surrounding the deaths have been examined and verified as being directly related to police duties rather than being incidental. Included on the list are the names of police who died en-route to or from work, while undergoing training, from injuries sustained at work, and in execution of their duty while off-duty (e.g., attempted arrest, preventing an offence, saving a life or attempting a rescue). The names of police who died as a result of an officer's own gross negligence or misconduct or from activities undertaken by choice (e.g., sporting activities) are not included on the *Honour Roll*.

The data obtained from the NPM *Honour Roll* included the names, dates and jurisdictions where police deaths occurred for all jurisdictions; and brief free-text narrative accounts outlining the circumstances surrounding the deaths that occurred in one jurisdiction (South Australia). Information about the circumstances of police deaths that occurred in other jurisdictions were obtained from separate online *Honour Rolls* maintained in four jurisdictions (New South Wales, Queensland, Victoria and Western Australia) (NSW Police Force, 2008; QPS, 2008; Victoria Police Blue Ribbon Foundation, 2008; WA Police, 2008) and directly via email from police agencies in the remaining three jurisdictions (Australian Federal Police, Northern Territory, and Tasmania). This descriptive information was combined with the data obtained from the NPM *Honour Roll* using name and date of death to link between the datasets. The resulting dataset contained information about 726 police deaths that had been recorded in Australia since settlement (note that the sources might not have been fully up-to-date for 2007).

Exclusion of Deaths due to Focus of Study

Given the focus of the study, deaths that occurred prior to the official establishment of the police force in the relevant jurisdiction (n=21) or where the circumstances indicated that the deaths were not occupationally related (n=62) were excluded from analysis. In the 19th Century policing was provided by separate colonies; initially from militia units and then through a mixture of specialist forces such as mounted patrols, water police and metropolitan police. Integration and a more professional standing occurred by way of “consolidation” or “establishment” within each colony. The colonies became states upon federation in 1901. South Australia was the first force to be established (1838) followed by Victoria and Western Australia (1853), New South Wales (1862), Queensland (1864), Northern Territory (1870) and Tasmania (1899). The Commonwealth force, based in the Australian Capital Territory, formed in 1917 and was re-formed into the Australian Federal Police in 1979 (AIC, 2003).

The deaths that were excluded because they were not occupationally related occurred while officers were not on-duty (n=6), were en-route to/from work (n=24) or overseas (n=32). These deaths were identified by creating categories from the free-text

descriptions using a procedure called “surfacing” (Miles and Huberman, 1994). Coding was undertaken firstly to identify whether officers were on-duty. The categories identified were: “en-route to/from work”, “on-duty”, “not on-duty” and “unknown”. En-route to/from work included deaths that occurred while the officer was on their way to or from work (n=24). On-duty included cases which specifically stated that the officer was on-duty (n=10), was undergoing police training (n=11), was on-duty overseas (n=32) or was undertaking a police function at the time of injury resulting in death – such as affecting an arrest or undertaking general patrol (n=381). Not on-duty included cases that specifically stated that the officer was off-duty or was at their private or police residence at the time when injuries resulting in death occurred (n=6). Unknown included cases where there was insufficient information to determine whether the officer was en-route to/from work, on-duty, or not on-duty – such as “killed in a traffic accident”, “shot”, “stabbed by offender” or “murdered” (n=241).

Coding Deaths as Accidents or Attacks

The descriptions were then examined and coded as “accident” or “attack” based on the primary division used in the literature. Police deaths were coded accidental if they contained the phrase “accident” or if the circumstances of the death were such that it was considered likely that the death was accidental (n=445). Deaths were coded as resulting from an attack if they involved at least one assailant or offender and the circumstances indicated that the death resulted from another person’s actions (n=173). Deaths that could not be coded as accidental or attack were coded as “unknown” (n=25). These included cases where no circumstances were reported or where the circumstances that were reported did not contain sufficient information to determine whether the death resulted from an accident or attack.

Coding Types of Police Deaths

Cases that were identified as either an accident or an attack, based on the free-text descriptions, were then coded to identify situational variables relevant to the deaths, focusing on how the deaths occurred and possible contributing factors. Each case was coded to determine how the death occurred, which resulted in nineteen accident and eight

attack categories being identified (Table 1). For example, types of accidents included “motor vehicle accidents”, “motorcycle accidents” and being “struck by a motor vehicle”. Attack types included “shot”, “stabbed”, “deliberately hit by motor vehicle” and “bomb explosion”. Additional attack types were “assaulted” and “murdered – method not reported”. These categories were used when the descriptive accounts did not contain any information about whether or not a weapon was used but merely stated “assaulted” or “murdered”.

Coding Specific Circumstances of Post-WWII Deaths

Given that recent deaths would be more relevant to contemporary prevention initiatives, the free-text descriptions of deaths that occurred in the six decades since World War II (1948 to 2007, n= 347) were then examined and coded to identify specific circumstances relevant to each death (note again that it is possible that sources were not up-to-date for 2007). As “motor vehicle” (n=119) and “motorcycle accidents” (n=77) accounted for a large proportion of deaths, these two accident categories were explored based on the type of accident (single or multi-vehicle) and who died (driver/rider or passenger). Because some of the free-text descriptions relating to these two accident categories contained more than one specific circumstance, each case was coded as Yes or No across all available circumstances. The average number of specific circumstances that were identified per death was 0.55 (SD=.63) for motor vehicle accidents and 0.74 (SD=.68) for motorcycle accidents. About half of motor vehicle (52.9%) and one-third (37.7%) of motorcycle accidents did not have a specific circumstance coded due to lack of information. Other deaths resulting from motor vehicle and motorcycle accidents had specific circumstances identified and coded as follows: one circumstance (39.5% and 51.9% respectively) two (7.6% and 9.1%) and three (1.3% of motorcycle accidents).

All other accident and attack types (n=151) that could be coded to identify specific circumstances had a maximum of one specific circumstance identified. Unfortunately, it was not possible to identify and code specific circumstances for some of the accident types (e.g., “aeroplane crash”, “injured self” and “bushfire”) and one of the attack types

(e.g., “murdered – method not reported”) because the narrative descriptions did not contain sufficiently detailed information.

Addressing the Research Questions

The first research question sought to determine whether there had been variation in the rate of police deaths caused by accidents and attacks between 1838 and 2007. The rate of occupationally related police deaths per 10,000 officers was calculated for all deaths and separately for deaths that were accidental or resulted from an attack. This involved adding the number of police deaths that had occurred in Australia since 1838 during each decade or part thereof and dividing the result by the total number of police in Australia during the relevant decade (or part). The proportion of total deaths accounted for by accidents and attacks was calculated by dividing the number of accidents and then attacks by the total that had been identified as either being an accident or attack (excluding unknown) and determining the proportion of the total rate that each accounted for.

To calculate the rate of police deaths, information about the number of sworn officers in Australia was obtained from police Annual Reports (2005-2007) and from Year Book Australia (1901-2004). The number of officers from the year when forces were established in each jurisdiction to 1900 was estimated based on available information. Information from police websites indicated that there were 803 officers in NSW (1872), 875 in Victoria (1853), 143 in Queensland (1864), and 225 (1892), 146 (1870), and 75 (1861) in Western Australia. The number of officers in each jurisdiction was estimated on a yearly basis before being aggregated, assuming that there was the same annual growth in police numbers between two known dates. Where two dates were not available from which to make estimates (South Australia), the average growth rate over the last five years was calculated and applied retrospectively on an annual basis.

The second research question explored whether variations in the rate of police deaths over time (1838 to 2008) could be explained by changes in the types of accidents or attacks. This involved calculating the number of the accident and attack types that had occurred each decade (or part) and the proportion of deaths that each type accounted for.

The third research question sought to determine how variation in the rate of police deaths caused by motor vehicle or motorcycle accidents compared with the rate of road fatalities in the general population. To address this research question, publicly available data about the rate of road fatalities per 100,000 population in Australia (Federal Office of Road Safety, 1998) was compared with the rate of police fatalities caused by motor vehicle and motor cycle accidents (combined) for each year between 1925 and 1997.

The fourth research question focused on more recent deaths (1948 to 2007) and involved an exploration of the specific circumstances of deaths to determine whether police deaths could be prevented. This involved analyses of the specific circumstances that were coded (as described above) and analysis of the free text data for the 1948-2007 population from the point of view of the preventability of fatalities. Clues were considered about how different police rules, procedures or equipment might have saved a life. This was necessarily a speculative exercise and the quality of data was highly uneven. In most cases there was no information other than a cryptic statement such as “motor vehicle accident whilst on patrol”. However, a number of cases included large paragraphs identifying a number of situational factors and behaviors that could be analyzed from the point of view of preventive interventions.

As noted, this is a summary national study. A preliminary review of the data showed it was limited but sufficiently differentiated to provide useful findings that would advance understanding of the subject and yield lessons for prevention. The scope of the study across eight jurisdictions did not allow for an examination of the direct impact of preventive initiatives, whether general public safety measures – such as compulsory seat belts and motorcycle helmets – or police-specific initiatives – such as body armor or crisis management. The intention is to follow this basic study with a more detailed situational analysis using primary sources, including police and coroner reports, which are much more expensive and painstaking to access in all capital cities in Australia.

Results

Table 1 presents the main causes of deaths for: (1) the whole population, including unknown causes, (2) the whole population of known causes, and (3) the past six decades (1948-2007). The results show a rough division of 70-80% accidents and 20-30% attacks.

Table 1 about here

The first research question focused on whether there had been variations in the rate of police deaths caused by accidents and attacks between 1838 and 2007. Figure 1 presents the rate of deaths per 10,000 sworn officers for all deaths, and the proportion accounted for by accidents and attacks. Historically, the rate of deaths was clearly highest between 1841 and 1870 and the rate of deaths has been consistently declining since 1951. Attacks accounted for between one third and half of police deaths that occurred between 1861 and 1930 and for about one fifth of all occupationally related police deaths since 1941. There was an inverted 'U' between 1941 and 1961 with the increase in occupationally related police deaths due to an increase in the rate of accidents.

Figure 1 about here

The second research question sought to determine whether variations in the rate of police deaths could be explained by changes in the types of accidents or attacks. Table 2 presents the number of deaths based on type of accident or attack per decade (excluding those that occurred while officers were not on-duty, were en-route to/from work, and overseas). Of particular note is the way motor vehicle and motorcycle crashes overtook horse riding accidents as the main cause of death around the 1920s. Fatal shootings have had a more stable prominence over the decades.

Table 2 about here

Particular types of accidents that contributed to the high rate of deaths between 1841 and 1870 included drownings, horse riding accidents and accidental shootings. Attack types

primarily included shootings and spearings. The recent reduction in the rate of police deaths since 1951 appears primarily due to a declining rate of motor vehicle and motorcycle accidents resulting in death, which reduced from 1.27 per 10,000 officers in 1961-1970 to 0.18 in 2001-2007. Similarly, the rate of death caused by motorcycle accidents has continually declined from 1.92 per 10,000 officers in 1951-1960 to 0.09 in 2001-2007.

The third research question required investigation of how the rate of police deaths caused by motor vehicle or motorcycle accidents compared with the rate of road fatalities in the general population. The rate of road fatalities per 100,000 police and population between 1925 and 1997 is presented in Figure 2. It is apparent that the rate of police deaths caused by motor vehicle and motorcycle accidents has always been equal to or exceeded the rate of road fatalities in the general population. Moreover, from 1970 there has been a downward trend in the rate or deaths caused by road fatalities for both police and the general population.

Figure 2 about here

The fourth research question required examination of the specific circumstances of more recent deaths with the view to providing insights into how police deaths could be prevented. The specific circumstances relevant to deaths caused by accidents during the past six decades (1948-2007) are displayed in Table 3. Over half of motor vehicle (57.1%) and three quarters (76.6%) of motorcycle accidents that could be coded were multi-vehicle rather than single vehicle accidents. Two thirds of motor vehicle accidents (66.7%) and nearly all motorcycle accidents (96.6%) that could be coded involved the death of the driver or rider rather than passengers.

Table 3 about here

Motor vehicle accidents accounted for 42.7% of all police deaths that had occurred in the past sixty years and were accidental; while motorcycle accidents accounted for 27.6%.

Examination of the specific circumstances of both types indicated that deaths tended to occur while officers were on patrol, in pursuit, or at intersections. Additionally, motor vehicle deaths tended to occur while officers were on emergency/urgent duty and motorcycle deaths occurred because the motorcycle collided with a vehicle.

Accidental deaths of police (1948-2007) also involved officers being struck by a motor vehicle (7.5%) and resulted from officers collapsing/having a heart attack (5.7%). Officers who were accidentally killed by being struck by a motor vehicle were typically at a vehicle stop, directing traffic or on speed detection/radar duty. Fatalities from collapsing/having a heart attack occurred while, or shortly after, officers were attempting to affect an arrest or after a scuffle – specified as occurring while on-duty or after performing duty, or occurred during training.

The specific circumstances of police deaths that were the result of an attack and occurred between 1948 and 2007 are displayed in Table 4. Most deaths that resulted from an attack involved the officer being shot (58.8%). Other deaths that also resulted from an attack involved officers being assaulted (10.3%) and stabbed (7.4%). Examination of the specific circumstances of attack types indicated that officers appeared to be at greatest risk when they were trying to affect arrest, detain, or execute a warrant. Shootings resulting in death also occurred when officers were attending a domestic disturbance.

Table 4 about here

The final analysis concerned the preventability of fatalities. The 1948-2007 cases were analysed to determine whether there were opportunities for preventive interventions. Disappointingly, 84.1% of cases (n=292) contained insufficient information to make even a provisional assessment. However, of the remaining 55 cases, only 27.2% (n=15) appeared difficult to prevent from a police procedural perspective. Most of these involved a vehicle swerving across the centre line of a road and colliding head on with a police vehicle. Others included events such as a police motorcycle hitting an oil slick and

crashing, or a police officer being ambushed and killed by an offender. The following is an example:

At about 3.20 pm on Tuesday, 8th January, 1974 Senior Constable Curson was standing on the steps at the main entrance to Flinders Street Railway Station [Melbourne] talking to a newspaper seller. Whilst they spoke a young woman came up and spoke to the Constable, who turned towards her. At that moment, James Henry Belsey, walked up behind him, produced a knife, and cut the policeman's throat. As Curson slumped to the footpath, Belsey calmly walked away, crossed Flinders Street and entered Young & Jackson's Hotel. He was arrested a short time later. Meanwhile, Curson had been removed to Prince Henry's Hospital with a massive wound to his throat and died two hours later. It was later learned that Belsey had a lengthy history of mental disorder, and had frequently threatened to kill a policeman. He was charged with Curson's murder but acquitted on the grounds of insanity, and was then sentenced to be detained at the Governor's pleasure.

A further 36.3% of cases (n=20) were considered "possibly preventable" in light of the information available. These included cases where police drivers failed to adjust their driving for conditions, such as wet weather, but exact responsibility was unclear. The same percentage – 36.3 (n=20 cases) – were considered "probably preventable". These included police losing control of their vehicles where their appeared to be no external factors affecting conditions, or crashing when overtaking vehicles in unsafe locations. Many of these cases also involved a "chase" or "pursuit". Several involved an officer directly approaching an armed offender. Three examples are provided below that were coded as "probably preventable".

Constable Bill Condon was a 29-year-old police officer stationed at Maranboy when he was informed of a gunman in a local café. With a local taxi driver who had accosted the gunman Condon drove down Katherine Terrace and saw the armed man, Terrence Charles Stapleton, walking near the café. Condon got out of the vehicle and approached him. When Stapleton saw the policeman, he brought the rifle around and pointed it, and without any hesitation, fired it.

Constable Condon was only about three meters away from Stapleton when he was shot.

Shortly after 1 a.m. on Wednesday, 16th March 1983, Constable Bourke, who was performing watch-house duties at the Sunshine Police Station, was accidentally shot dead by Senior Constable Duffy, 20265, of the Police Dog Squad. Duffy had completed his duties for the evening and was returning his revolver at the time of the incident. He had unloaded the weapon but, in an attempt at a practical joke, had placed what he believed to be a "blank" round into the firearm. The revolver was then discharged and Bourke was fatally wounded.

At about 8.30 p.m. on Thursday, 3rd February 1994, Sergeant McPhie was driving east in Lower Dandenong Road, Dingley, in pursuit of a motor cyclist, when he attempted to overtake another vehicle. He lost control of the police car on a gravel surface where road works had recently taken place. The police vehicle then rolled over, mounted the centre median strip and came to rest on the opposite side of the roadway. McPhie was killed instantly.

In the first case it could be argued that a far more cautious approach should have been taken in dealing with the "gunman", including calling in a SWAT team. In the second case, better procedures, supervision and training, including in-service maintenance training, might have ensured stricter security for firearms. In the third case, a stricter pursuit policy would have ensured a more cautious approach by the driver (see below).

Discussion

The main findings of this study reinforce the general findings of the literature: that most police deaths on-duty are not the result of attacks by offenders but are "accidents", and most accidental deaths involve motor vehicles and motorcycles. The data also support the picture from the literature of a trend towards reduced deaths as a proportion of police numbers. In more recent times a peak occurred in the early-1950s, followed by a fairly

steady decline. A good deal of this latter reduction was accounted for by reductions in vehicle crashes. Although the scope of the current study did not allow for analysis of the impact of changed procedures, the literature suggests that general improvements in road safety appear to have directly affected police safety. Measures include the compulsory wearing of seatbelts introduced in 1970, compulsory wearing of motorcycle helmets, and greater restrictions on speeding and drunk driving (Federal Office of Road Safety, 1998).

Despite the limitations of the data, the current study has produced implications for prevention in both of the main categories of “accident” and “attack”. These reinforce the literature in the following areas. In the area of accidents, the high rate of fatalities involving motorcycles – 27.6% of accidents – demonstrates the vulnerability of this mode of transport. Motorcycles have advantages, such as the ability to move through blocked traffic to an accident scene, but it is possible that the large number of deaths of motorcycle riders means their use should be kept to an absolute minimum – probably only for special duties. There was also a large number of vehicle-related deaths where there appeared to be a degree of lack of care on the part of the police driver. This supports the need for police to conform to general road safety principles and for strict controls on pursuits. Police work may call for high speeds at times, but research shows clearly that most of the initial violations that trigger pursuits – such as traffic violations – are not serious enough to justify the resulting carnage. Contemporary best practice standards now place severe limits on officer discretion in pursuits. These include a high threshold of grounds for pursuit, a low threshold of grounds for terminating a pursuit, absolute speed limits of 30-40% above the posted limit, radio supervision of drivers by a senior officer, and regular refresher training that includes research findings that contradict myths about the value of pursuits (Hoffman, 2003; Rix, Walker and Brown, 1997).

Closer inspection of deaths at vehicle stops and static radar is likely to show the need to stop a number of high risk practices in these situations (Prenzler, 2006). Police should not approach a vehicle from the driver’s side when the vehicle is stopped on a road or verge; nor should police on foot attempt to halt vehicles from a carriageway. Any kind of

engagement by officers on foot with motor vehicles requires strict and systematic use of barriers and cones, reflective vests and emergency lights, and more developed training.

There are also a number of wider public safety initiatives available that are likely to benefit police. These include the early identification and management of mental illness in the community; greater restrictions on firearms; and enlarged road safety measures such as separating opposing carriageways, widening corners and better vehicle safety features (such as roll cages and automatic stabilisers). Police safety could also be improved within the criminal justice system by better intelligence sharing about offenders, and stricter controls on repeat violent offenders.

Other preventive measures available to police that have indicative support from the current study but are likely to receive stronger support from more detailed data include the following (Boylen and Little, 1990; NIJ, 1998; Pinizzotto, et al, 2002; Prenzler, 2006):

- Regular medical checks should be used to identify officers with heart conditions or other risky medical conditions. These officers should be kept off frontline duties where conflict could trigger a heart attack or collapse.
- More extensive use should be made of protective gear, including helmets and armour that covers a wider area of the body, in high risk situations such as sieges and raids.
- The recent introduction of capsicum spray and stun guns is potentially beneficial in stopping close quarter fatal assaults on police, including with knives.
- An extremely cautious, risk management, approach needs to be taken to any situation where there are indicators of the presence of weapons, including: rapid radio access to computerised intelligence about suspects, clear lines of command and communications, a focus on separating suspects from weapons, officers halting well back from the scene and negotiating with the offender by loudspeaker or telephone, and delaying action and calling in SWAT.
- Routine use of protective vests, especially for all attendances at domestic disputes and service of summons and arrest, should also be mandatory.

The relevance of the latter two points can be seen from initial evidence in one of the most recent police deaths in Australia. In July 2007, 33 year old Queensland Constable Brett Irwin approached a suburban home to arrest a man for a breach of bail (Koch, 2007). The offender shot the officer point blank with a pistol. A coroner's inquest will be held to examine the details of the fatality and make recommendations for future prevention. However, enquiries by journalists immediately revealed several significant facts (Meade, 2007:7; Murray and Doneman, 2007:11). The offender had a long history of property and violence offences, and frequent breaches of bail. He had a violent temper and was probably mentally ill. Court documents showed he collected, and was obsessed with, weapons; and had repeatedly threatened to die in a shoot out with police. He was on Supreme Court bail for several offences, including assault and weapons offences. Despite this, Constable Irwin was sent to the offender's home without any apparent cautions in place. Without a protective vest he walked up to the entrance of the offender's home and knocked on the door. When there was no answer he went around the back of the house where he was confronted by the offender and shot in the chest. The offender fatally shot himself soon after. The whole approach to executing the warrant was wrong from the start. Once the breach of bail had been identified, a proper computer-based risk assessment, using an offender profile, should have led to a full scale SWAT raid to arrest the man.

Conclusion

Police deaths on-duty appear to have been declining relative to total police numbers in many countries such as Australia. Nonetheless, occupational fatalities remain a feature of the police working environment. Analyses of the types and circumstances of these fatalities indicate that many of these deaths are highly preventable. Police departments need to adopt the full range of protective strategies likely to save lives, as well as conduct their own in-depth research on the topic. More broadly, governments need to apply a range of measures in areas such as mental health management, gun control and road safety, that are also likely to make for a much safer working environment for police.

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Table 1: Main Causes of Death, 1838-2007 and 1948-2007

		Number	Percent
Whole population, 1838-2007	Accident	445	
	Attack	173	
	Unknown	25	
	Total	643	
Known Causes, 1838-2007	Accident	445	72.0
	Attack	173	27.9
	Total	618	100.0
Past Six Decades, 1948-2007	Accident	279	80.4
	Attack	68	19.6
	Total	347	100.0

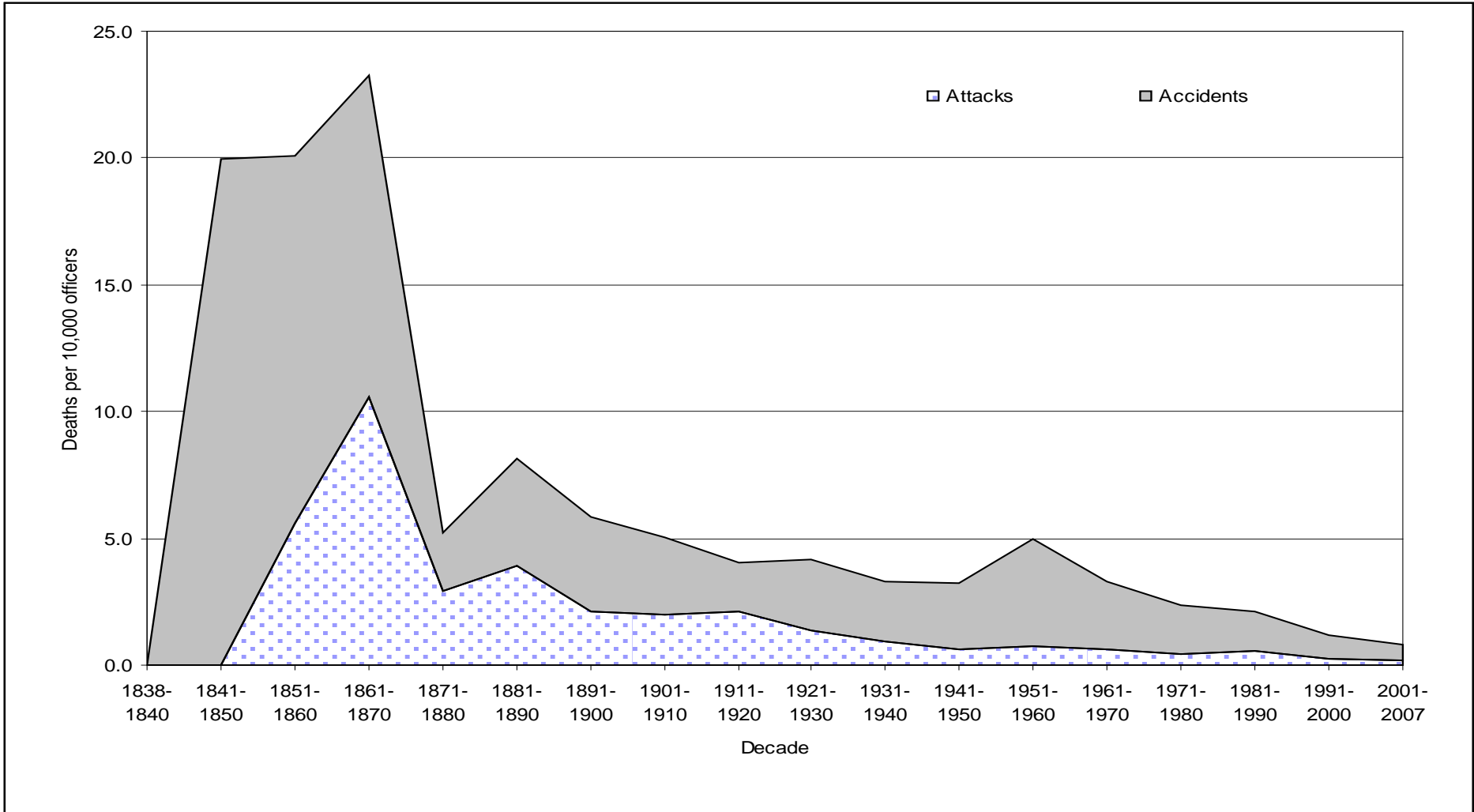


Figure 1: Rate of Occupationally Related Police Deaths and Proportion Caused by Accidents and Attacks

Table 2: Number of Accidents, Attacks, Total Police Deaths, and Sworn Officers in Australia by Decade, 1838-2007

Accident/Attack Category	Decade																		Total
	1838 - 1840	1841- 1850	1851- 1860	1861- 1870	1871- 1880	1881- 1890	1891- 1900	1901- 1910	1911- 1920	1921- 1930	1931- 1940	1941- 1950	1951- 1960	1961- 1970	1971- 1980	1981- 1990	1991- 2000	2001- 2007	
Accident Type																			
Motor Vehicle Accident	0	0	0	0	0	0	0	0	2	2	3	2	17	23	24	30	17	6	126
Motorcycle Accident	0	0	0	0	0	0	0	0	0	4	8	14	26	16	14	8	3	3	96
Horse Riding Accident	0	0	5	6	4	7	7	12	7	2	0	1	1	0	0	0	0	0	52
Drowned	0	5	6	10	1	2	6	2	0	2	0	0	2	2	0	1	0	0	39
Struck by Motor Vehicle	0	0	0	0	0	0	0	0	0	2	4	3	2	2	4	3	6	3	29
Shot	0	0	2	5	0	2	1	0	0	1	0	0	0	1	3	3	2	0	20
Collapse/Heart Attack	0	0	0	0	0	0	0	0	0	0	0	3	3	3	3	2	4	1	19
Illness Obtained while On Duty	0	0	0	2	1	3	1	2	2	1	0	2	1	0	1	2	4	1	23
Aeroplane Crash	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	3	4	8
Injured Self	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	5	1	0	8
Fall Causing Injuries	0	0	0	0	0	1	0	0	1	1	1	0	0	1	0	0	0	0	5
Bushfire	0	0	0	0	0	0	1	0	0	1	0	0	3	0	0	0	0	0	5
Hit by Train/Railway Accident	0	0	0	0	1	1	1	1	0	0	0	1	0	0	0	0	0	0	5
Struck by Object	0	0	0	1	0	0	0	0	0	0	2	0	0	0	1	0	0	0	4
Electrocuted	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	2
Explosion	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
Fumes	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1
Caught down Mine	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1
Injured at Sea	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
Total	0	5	13	24	7	16	18	17	12	18	20	26	56	49	50	56	40	18	445
Attack Type																			
Shot	0	0	4	15	8	4	1	6	6	5	4	3	5	7	6	12	6	4	96
Assaulted	0	0	0	0	0	3	2	0	4	0	3	2	2	1	0	3	0	0	20
Stabbed	0	0	1	0	0	2	1	1	1	1	0	0	1	0	1	1	2	0	12
Speared	0	0	0	3	0	3	4	0	0	0	1	0	0	0	0	0	0	0	11
Deliberately Hit by Motor Vehicle	0	0	0	0	0	0	0	1	0	1	0	0	0	1	1	2	0	0	6
Struck with Object	0	0	0	1	0	1	0	0	1	0	0	0	0	0	0	0	0	0	3
Bomb Explosion	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	2
Murdered – Method Not reported	0	0	0	1	1	2	2	3	1	2	0	1	2	2	2	1	2	1	23
Total	0	0	5	20	9	15	10	11	13	9	8	6	10	11	11	20	10	5	173
All Police Deaths (incl. Unknown)	0	5	21	48	16	32	29	30	27	31	30	33	67	60	62	76	50	26	643
Total Police	697	2,506	10,447	20,651	30,499	39,347	49,567	59,773	66,539	74,247	90,710	102,014	135,425	181,281	261,257	361,329	418,982	326,358	

Sources: National Police Memorial Honour Roll, Honour Rolls maintained by each jurisdiction, Police Annual Reports, Year Book Australia. Note: the first and last columns do not cover full decades.

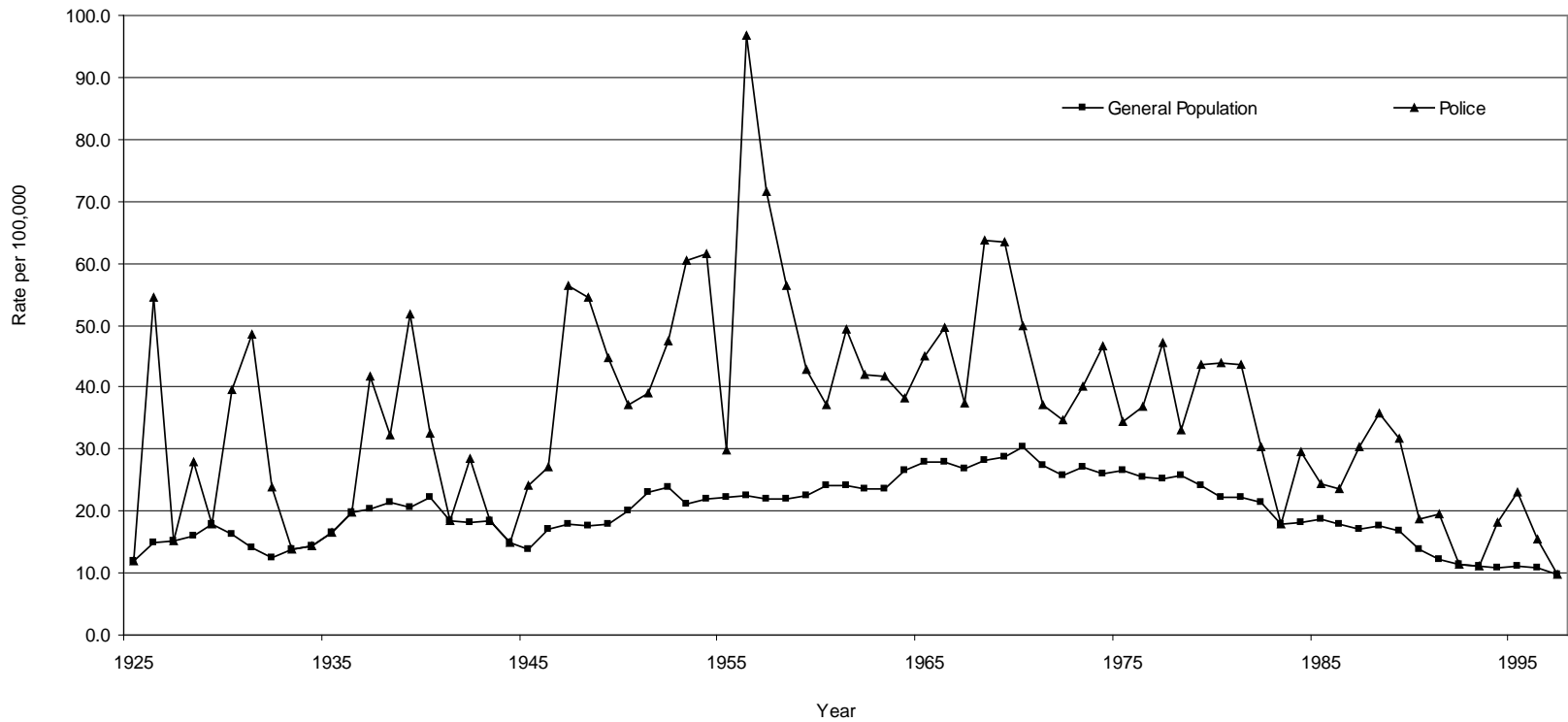


Figure 2: Rate of Road Fatalities and Police Fatalities (Motor Vehicle and Motorcycle) per 100,000 population

Table 3: Specific Circumstances of Accidents, 1948-2007

	Category		Type	
	n	%	n	%
Motor Vehicle Accident	119	42.7		
<i>Type</i>				
Multi-vehicle			12	10.1
Single Vehicle			9	7.6
Not Stated			98	82.4
<i>Who Died?</i>				
Driver			16	13.4
Passenger			8	6.7
Unknown			95	79.8
<i>Circumstance/s*</i>				
Vehicle on patrol			19	16.0
Pursuit			12	10.1
Emergency/Urgent Duty			8	6.7
Intersection			7	5.9
Poor Driving Conditions			4	3.4
Police vehicle driven off road			4	3.4
Returning to station			3	2.5
Collision caused by another car			2	1.7
Carelessness			2	1.7
Police vehicle on wrong side of road			1	.8
Intercepting traffic offence			1	.8
Vehicle hit by train			1	.8
Swerved to miss another vehicle			1	.8
Motorcycle Accident	77	27.6		
<i>Type</i>				
Multi-vehicle			23	29.9
Single Motorcycle			7	9.1
Not Stated			47	61.0
<i>Who Died?</i>				
Rider			28	36.4
Passenger			1	1.3
Unknown			48	62.3
<i>Circumstance/s*</i>				
Patrol			22	28.6
Pursuit			6	7.8
Intersection			6	7.8
Collided with parked vehicle / ran into vehicle			5	6.5
Emergency/Urgent Duty			4	5.2
Escort duties			4	5.2
Motorcycle training			4	5.2
Poor Riding Conditions			2	2.6
MC driven off road			2	2.6
During vehicle stop			1	1.3
MC on wrong side of road			1	1.3
Struck by Motor Vehicle	21	7.5		
Vehicle stop			7	33.3
Directing traffic (point duty)			4	19.0
Speed detection / radar duty			4	19.0
Crossing road			3	14.3
Deploying road spike			1	4.8
Not stated/unknown			2	9.5
Collapse/Heart Attack	16	5.7		
While or after trying to effect arrest / after scuffle			6	37.5

On Duty / After performing duty			5	31.3
Collapse during training			5	31.3
Shot	9	3.2		
By another police officer			3	33.3
Discharge of own weapon			2	22.2
During stakeout			1	11.1
At police station			1	11.1
While affecting arrest			1	11.1
While instructing			1	11.1
Illness Obtained while On Duty	9	3.2		
Virus			1	11.1
Not stated/unknown			8	88.9
Aeroplane Crash	7	2.5		
Injured Self	6	2.2		
Drowned	5	1.8		
Attempting a rescue or during evacuation			4	80.0
Attempted to cross creek/river or In flooded creek/river			1	20.0
Bushfire	3	1.1		
Electrocuted	2	.7		
Explosion	1	.4		
Fall Causing Injuries	1	.4		
Horse Riding Accident	1	.4		
Injured at Sea	1	.4		
Struck by Object	1	.4		
Total	279	100.0		

* Not a distinct count. Each death could have had more than one circumstance identified and % refers to % of cases with circumstance.

Table 4: Specific Circumstances of Attacks, 1948-2007

	Category		Type	
	n	%	n	%
Shot	40	58.8		
Trying to affect arrest / detain / execute warrant			9	22.5
Attending domestic disturbance			6	15.0
Responding to report of armed person / reported gunshots			3	7.5
While undertaking investigation			3	7.5
Revenge for prior incident (arrest, fired officer, marital affair)			2	5.0
Interviewing suspect / attempting to interview			2	5.0
Following a pursuit			2	5.0
Vehicle stop / random breath test			2	5.0
Ambush while responding to suspicious vehicle			2	5.0
At police station			1	2.5
Escaping prisoner/s			1	2.5
Taking part in raid			1	2.5
Not stated/unknown			6	15.0
Assaulted	7	10.3		
Whilst Affecting Arrest			7	100.0
Stabbed	5	7.4		
Stabbed while attempting to affect arrest			3	60.0
Mental disorder with prior threats to kill police			1	20.0
Stabbed during affray			1	20.0
Deliberately Hit by Motor Vehicle	4	5.9		
Pursuit car deliberately run into			2	50.0
While performing traffic duty			1	25.0
Not stated/unknown			1	25.0
Bomb Explosion	2	2.9		
CHOGM* Sydney			1	50.0
Melbourne police complex			1	50.0
Murdered – Method Not reported	10	14.7		
Total	68	100.0		

* Commonwealth Heads of Government Meeting