

The Diffusion Effect: A Partnership Approach to the Reduction of Road Trauma in Rodney

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Abstract

Intelligence led policing has proven to be an effective tool to tackle the high level of fatalities within the Waitematā Police District. An in-depth analysis of historic crash data to identify associated crash trends resulted in a three phase operation within the Rodney Area based on a "diffusion of benefits" model. A collaborative multi-agency operation was run to increase the perceived risk of detection and apprehension in order to modify driver behaviour over a sustained period. There was an 86% reduction in fatal injury crashes and marked decrease in serious injury crashes over the Operation period in 2006. This has run consecutively since 2006 over historic bi-annual spikes, resulting in similar reductions highlighting the effectiveness of policing to risk and the benefits derived from a united multi-agency approach to problem solving.

Keywords

Intelligence, Diffusion of Benefits, Policing to Risk

Introduction

The road policing environment is constantly evolving as population density, technology, vehicle fleet expansion and the roading environment diversify. To address this, it is imperative that Police and partner agencies engage strategically to mitigate emerging risks. Intelligence led policing is the application of intelligence analysis to examine the environment in an objective manner, assisting crime or crash reduction through policing tactics and partnership initiatives (Ratcliffe as cited in Bird [1]).

In 2006 analysis was undertaken to examine fatal crash trends within the Waitematā District. Initial analysis identified that despite a nationwide decrease, the number of deaths in the Waitematā District had increased. A bi-annual cycle of fatal and serious crashes were highlighted, with significant spikes occurring between weeks 13-25 and 39-49 of the calendar year. Spatiotemporal and environmental analysis indicated that the greatest proportion of fatal crashes occurred along the State Highways in the Rodney Area. Waitematā is the second largest Police District in New Zealand, comprising of the North Shore, Waitakere and Rodney Areas. The Rodney Area is largely rural, covering 2475 square kms¹ with a population of 89,000 residents.

In 2005 the Rodney Area recorded 19 fatal crashes, resulting in 23 fatalities. Fatal crashes within the Area in 2006 were on track by June to exceed those recorded in 2005. Speed, alcohol and crashes on bends were highlighted as the greatest risks for fatal crashes in Rodney. Demographic analysis highlighted that risk groups were aged between 15-19 and 40-44 years, with almost half of crash victims over the risk periods of concern not holding a full drivers licence. Despite surveys indicating a high seatbelt compliance rate, in only half the fatalities over this period could it be confirmed that restraints were worn by the victims.

Characteristic temporal, spatial, environmental and demographic influential factors were examined in the report presented to District Management. Within this, the analysis also provided an overview of the *diffusion of benefits model*, a theory that addresses the underpinning motivators for human behaviour; perceived reward versus risk (Clarke & Weisburd [2]). The model infers that by employing an intervention targeting the primary target and having an impact, benefits will likely extend outside the primary target and timeframe from which it has been undertaken. Past use of this method has had successful application within the criminal environment, hence it was proposed that this be adopted to a road policing environment.

¹ 46% of the Auckland Region

The basis of the proposal was to deter and discourage drivers from undertaking unsafe driving behaviour by increasing the perception that they would be apprehended, through high visibility and a zero-tolerance enforcement approach. Given its rural sprawl, a key inhibiting factor for police enforcement in the Area was coverage on the State Highways and rural arterials. By implementing high visibility operations at key times, further maximising impact by utilising media and education assistance from key partner agencies, it was believed that driver behaviour could be modified for a sustained period of time beyond heavy enforcement periods and capabilities.

Methodology

District Intelligence proposed a three phase operation within the Rodney Area based on a 'diffusion of benefits' model, which targeted a traditional peak fatal crash period identified by the analysis. This was on the basis that by increasing the perceived risk of detection and apprehension, driver behaviour would be modified for a sustained period. Clarke & Weisburd [2] referred to two key methods to enhance the diffusion effect; deterrence and discouragement. The intention of deterrence was to increase the driver's perception that they would get caught, encouraging modification of their driving behaviour. By implementing three phases at strategic times for the identified risk period, supported by high profile media, the perception of high levels of enforcement would be portrayed. With other competing crime and crash demands across the wider District, the potential impact was maximised by using large collective resources in short succession. In addition, drivers would be discouraged from poor driving behaviour even though their risk of detection had not increased over periods when the operation was not in affect. High profile media and education campaigns were key to this, enhancing the perception that large Police numbers were on the road, even when they were not.

Based on intelligence analysis and recommendations proposed, the District committed to a three phase Operation that would utilise road policing and alcohol enforcement resources from across the wider District. Deployment times and locations were based off further indepth analysis, with restraints, alcohol, speed, licences and driver behaviour the primary focus. An accompanying intelligence package was compiled profiling recidivist offenders and CIB staff were on call to ensure that crime uncovered during the campaign would not impede proactive road safety resources.

The operation was designed to take place from weeks 39-49 over three phases of five days, three days and two days length respectively. Between each of the phases, a diffusion period of two to three weeks was allowed for, which was to be reinforced by smaller high visibility patrols. Not only was it believed that surrounding Areas would benefit from the increase road policing presence in Rodney, but that the benefits of enforcement would continue over the summer months the Rodney Area.

A combined press conference held by the Rodney District Council and Police a day prior to Operation Diffuse commencing. This attracted local radio, television and print media. Police and Rodney District Council media representatives engaged throughout the ten week campaign period to combine strategies and key messages put forward by both parties. Accident Compensation Corporation (ACC) supported Council initiatives promoting the key campaign theme messages through a series of radio, television and billboard advertisements. Active collaborative engagement with the local community and commuters through the Area increased driver awareness of the prominent crash risks in Rodney.

Strategic Traffic Units (STU) and Highway Patrol staff provided high visibility coverage along both major state Highways and along high risk rural and urban arterials throughout Rodney. Exposure extended far beyond regular enforcement capabilities with enforcement numbers in excess of sixty throughout the campaign². The Commercial Vehicle Investigation Unit (CVIU) provided heavy vehicle enforcement and Team Policing monitored the license premises over the weekend periods. The Traffic Alcohol Group (TAG) set up booze buses at multiple sites, assisted by additional enforcement on routes in the surrounding area.

² note: regular coverage would be no more than ten staff

Results

The objective of Operation Diffuse was to reduce Rodney's nine fatalities in 2005 over the same ten week period in 2006. Significant inroads were made, with an 86% reduction in fatal injury crashes and marked decrease in serious injury crashes³ over the operation period in 2006. There was a marked increase in the number of enforcement notices issued, and with both Council and Police receiving positive feedback from the local community. The operation also uncovered problems with several licensed premises, and whilst not a primary focus of the campaign, indirectly impact on the road safety environment in Rodney. After the one fatal crash during the Operation Diffuse campaign period, Rodney had no fatalities for the following 20 weeks, the longest period without a fatal by comparison with the preceding 10 years. It can only be hypothesised that this was due to the heightened education and enforcement, with the diffusion of benefits continuing to run over the New Year. This was likely reinforced by high visibility over the festive period, however environmental and engineering factors had remained relatively consistent with previous years, suggesting the only major change in the environment was style of collaborative proactive policing and education.

Rodney recorded a reduction in fatal crashes in 2006, 16 in comparison to the 19 in 2005. Although this was not a large reduction, it was significant given that it was on track to surpass 2005 figures in June. Given the positive response to Operation Diffuse by Police, key partner agencies and the wider community, the District agreed to commit similar level of resources to bi-annual operations to be run over the late Autumn and late Spring temporal spikes. To date, four operations employing these tactics have been carried out, with another planned for late Spring 2008. Although individual campaign results have slightly varied, there has been a consistent reduction in Rodney's road toll and the number of Serious Crash Unit callouts to the Area since its instigation in late 2006.

In 2007 Rodney recorded the lowest road toll in over 20 years. Eleven fatal crashes resulting in 13 fatalities equated to a 45.8% reduction in fatalities from those recorded in 2005. Over Spring in 2006 and 2007, Serious Crash Unit callouts reduced 49% and 18% respectively in comparison to those recorded in 2005. There was no change over the Autumn period in 2007, however callouts reduced in Autumn 2008 by 43% of those in 2005. This has been further supported by ACC data for the number of entitlement claims for individuals who are receiving compensation because they cannot return to work. From 2002-2005 the October to December quarter averaged 6.5 ACC claims for alcohol related crashes in Rodney. Since the operations run in 2006-2007 over that quarter, alcohol claims have reduced to an average of two.

Discussion

This style of operation has run consecutively since 2006 over historic bi-annual spikes, resulting in similar reductions of fatal and serious injury crashes throughout each phase. The operation highlights the effectiveness of policing to risk and the benefits derived from a united multi-agency approach to problem solving. Intelligence led policing is seen as the key to identifying risk times and locations from which to base deployment decisions. An understanding of the crash peaks and potential impact of the diffusion effect were vital in adapting the methodology employed in the operations run in Rodney. In order to maximise potential impact, it is crucial that a multifaceted approach is employed. Police resources included local and District STU, Highway Patrol, TAG, Team Policing, CVIU and staff policing travel routes across Area boundaries. Local staff cannot create sufficient impact, so in order to promote high visibility and invent impact through public awareness, the community need to perceive that there is a police car around every corner. Local print, television and radio media coordinated by the local Council are significant contributors to enhancing community perception and awareness. Consistent media releases at strategic times reinforce road safety messages and reiterate the current situation within the Area. Similar to education around crime in the community, providing up to date information around crash prevention methods and current trends provides reassurance and enhances cooperation.

At the conclusion of each Operation, a postanalysis was undertaken by the intelligence unit to review the analysis undertaken, taskings given, action taken and the resulting impact on the Area. Davis [3] highlighted the importance of critiquing actions taken to help ensure efficiency and prevent repeating

³ 77% based on Serious Crash Unit callouts

similar mistakes in the future, whilst highlighting any deviation from the original intent. The measurement of success for any analyst relates to whether the product they presented was actively engaged by Management, with tasking passed onto the relevant Units in order to effect change to prevent a threat/trend from occurring in the first instance (Cope [4]). From an intelligence standpoint, the actions taken from the analysis presented was deemed successful. Throughout the Operations several key lessons were learnt, as highlighted below.

The education component should start prior to the enforcement stage to enhance community anticipation, which is reinforced with the observation of enforcement shortly thereafter. Timing is everything; it was highlighted after Operation Diffuse that future operations should commence the first phase one to two weeks prior to the identified risk period. Early enforcement provides the opportunity to impact on their rational choices and ultimately change their driving behaviour before the identified risk period. Random reinforcement between the phases in the form of 'booster campaigns' is crucial to enhance the 'anytime, anywhere' perception.

Engagement with key partner agencies in the form of a planning and implementation team is vital to secure funding and resources for the targeted period. Media releases need to be timely, particularly the following day after each phase to publicise the results, which assists gaining public acceptance for the initiative. Successes need to be celebrated both externally and internally. Operations of this nature require additional commitment and effort from staff involved, hence it has been crucial to feed successes to frontline staff to encourage internal support.

A key lesson learnt is that ongoing management is required to prevent a lack of focus, particularly around momentum regarding staffing and commitment. This has particularly been noticed in the District after regularly running a similar style operation. Without focus there is the risk for the operations to be treated as business as usual. It is therefore essential that key senior members take ownership and are accountable throughout the entire campaign to ensure sufficient briefing practices, consistency and open lines of communication are adhered to. To provide additional guidance, there is a requirement for the analyst to be involved in the process end to end, prior to conducting any reviews.

The regular running of this operation would appear, in conjunction with other tools, to have a longer term impact on overall crash reduction. While the operations targeted high risk times, engineering initiatives targeting blackspots have likely contributed to the flow-on effect. This included a high risk stretch of State Highway being reduced from 100km to 80km, however this has only been in place for the last two operations.

This style of policing has not been employed elsewhere in New Zealand to date. It is unknown whether a similar approach will lend itself to all environments, however it is believed it has application to similar lower population density Areas. The diffusion effect has been effective in relation to the 'fatal-free' periods experienced after the operations, however no analysis has been undertaken to examine whether this extended further into the criminal environment. Although the significant reduction in road toll cannot be exclusively credited to the operations carried out in Rodney, there is a greater understanding of the environment and risks are being addressed to enhance road safety in a collaborative partnership approach.

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