

## **A roadside survey of unlicensed driving in Queensland**

Barry Watson, Kerry Armstrong, Angela Watson, Adrian Wilson, and Kerrie Livingstone  
Centre for Accident Research and Road Safety – Queensland

Kelly Sultana and Lisa O'Donnell  
Queensland Police Service

Correspondence: Barry Watson; email: b.watson@qut.edu.au, ph: 07 3138 4955,  
fax: 07 3138 7532

### **Abstract**

Unlicensed driving remains a serious problem in many jurisdictions, and while it does not play a direct causative role in road crashes, it undermines driver licensing systems and is linked to other high risk driving behaviours. Roadside licence check surveys represent the most direct means of estimating the prevalence of unlicensed driving. The current study involved the Queensland Police Service (QPS) checking the licences of 3,112 drivers intercepted at random breath testing operations across Queensland between February and April 2010. Data was matched with official licensing records from Transport and Main Roads (TMR) via the drivers' licence number. In total, 2,914 (93.6%) records were matched, with the majority of the 198 unmatched cases representing international or interstate licence holders ( $n = 156$ ), leaving 42 unknown cases. Among the drivers intercepted at the roadside, 20 (0.6%) were identified as being unlicensed at the time, while a further 11 (0.4%) were driving unaccompanied on a Learner Licence. However, the examination of TMR licensing records revealed that an additional 9 individuals (0.3%) had a current licence sanction but were not identified as unlicensed by QPS. Thus, in total 29 of the drivers were unlicensed at the time, representing 0.9% of all the drivers intercepted and 1% of those for whom their licence records could be checked. This is considerably lower than the involvement of unlicensed drivers in fatal and serious injury crashes in Queensland, which is consistent with other research confirming the increased crash risk of the group. However, the number of unmatched records suggest that it is possible the on-road survey may have under-estimated the prevalence of unlicensed driving, so further development of the survey method is recommended.

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Dan Heenan  
Queensland Police Service\*

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Samuel Bailey, Pam Palmer and Sally Samuels  
Department of Transport and Main Roads\*

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### **Keywords**

Unlicensed driving, roadside licence check survey

## Introduction

Driving of vehicles without a valid licence remains a serious problem in many jurisdictions [1-2]. It is widely acknowledged that suspended drivers are over-represented in fatal crashes [3]. A recent study of crashes occurring from 1995 to 2004 in Queensland, showed that unlicensed drivers were involved in approximately 3-4% of total crashes but this increased to between 6-10% of fatal crashes [4] confirming the overrepresentation of unlicensed drivers in more serious crashes.

Licence suspension or revocation has been one of the most effective methods of reducing repeat offending and crash involvement [6]. However, studies of suspended drivers in the United States suggest that up to 75% continue to drive while suspended [6-7] and that licence reinstatement rates are as low as 50% [6]. While the use of licence actions has reduced the prevalence of unlicensed driving, it has not completely eliminated this behaviour by those who are suspended, revoked, disqualified, or otherwise unlicensed [8]. Thus, licence actions appear to only discourage those who are able to be deterred through the direct experience of punishment [8].

Considering the illegal nature of the behaviour, it is very difficult to estimate the full extent of disqualified/unlicensed driving [11]. However, roadside licence check surveys provide the most direct means of estimating the community-wide prevalence of unlicensed driving, both in general and among different traffic offender types. When conducted in a periodic manner, these surveys can also provide a valuable tool for evaluating the impact of countermeasures (both intended and unintended) on the level of unlicensed driving [13].

While the sampling technique will constrain some of the generalisations that can be made, in theory this approach is an important method to ascertain the prevalence of unlicensed driving [11]. Unfortunately, due to a number of interrelated problems, very few roadside surveys of unlicensed driving appear to have been undertaken around the world [13-13]. The limited studies that have been published were undertaken in 1976 in Western Australia [see 14], in 1991 in New South Wales [see 15] and in 2002 in New Brunswick, Canada [see 16]. When conducted in a periodic manner, roadside surveys also represent a valuable tool for evaluating the impact of countermeasures (both intended and unintended) on the level of unlicensed driving [13].

In Australia, the term unlicensed driver tends to be used as the generic description for all those who drive or ride a motor vehicle without a valid licence [e.g. 17, 18]. While the term is also commonly used in the USA, it is sometimes confined for use with those drivers who have never held a valid licence [19]. To avoid confusion, the Australian terminology was adopted for use throughout this study. Hence, the term unlicensed driver is used in a generic manner to refer to drivers who have i) let their licence expire; ii) have had their licence disqualified or suspended; iii) hold an inappropriate class of licence for the vehicle they drive; iv) drive outside the restrictions of a special licence; v) don't currently hold a licence; or vi) have never held a licence [2, 13]. While driving unaccompanied on a Learner Licence is considered a licence offence in most jurisdictions, rather than unlicensed driving, it also represents an issue of concern for road safety authorities.

The main objective of this research was to estimate the prevalence of unlicensed driving on Queensland roads. Besides providing important information on the size of the problem, the study findings could be contrasted with data relating to the crash involvement of unlicensed drivers, thus confirming whether they are over-represented in crashes or not. In this regard, some have argued that unlicensed drivers drive in a more cautious manner to avoid detection (sometimes referred to as the disqualified driver effect) [13]. However, an analysis of Queensland crash data by Watson [13], utilising a quasi-induced exposure method, suggested that unlicensed drivers were three times more likely to be involved in a crash than licensed drivers. Obtaining a more direct measure of the exposure of unlicensed drivers would thus enable these findings to be validated.

## **Method**

### Participants

A total of 3,112 drivers were intercepted and surveyed by Police Officers. The purpose of the research was to determine whether the driver was carrying their driver licence and whether they were validly licensed at the time of data collection. Data collection by QPS officers was approved by the Acting Chief Superintendent, State Traffic Support Branch and the research received approval from the Queensland Police Research Committee and the Queensland University of Technology Human Research Ethics Committee.

### Materials

A data collection form was developed by CARRS-Q in conjunction with QPS and TMR. The form collected vehicle information, which consisted of the vehicle registration number and the status of the vehicle registration (e.g., current, expired) and also driver information, which comprised:

- whether the driver produced their physical licence card at the time of interception, and if it was an interstate or international driver licence;
- the customer reference number (CRN) on the licence card;
- the driver's date of birth (collected for the purpose of cross checking information to ensure integrity and accuracy of data entry within the TRAILS database);
- the licence status; that is whether the driver was validly licensed, which included checking if the driver was required to be accompanied by an open licence holder (e.g., they held a learner licence); and if the driver was found to have an invalid licence status, whether they were charged with unlicensed driving at the time of interception or not;
- the reason for the driver being unlicensed; for instance court disqualification, demerit point suspension, SPER suspension, learner unaccompanied, expired, never held a licence, incorrect class of vehicle, or unknown;
- the driver's full name and date of birth (if they failed to produce their physical licence card), which was used to check whether they had a valid licence recorded within the TRAILS database; and
- the result of any random breath test performed, e.g., negative or positive.

### Procedure

Queensland Police conducted the survey in conjunction with routine Random Breath

Testing (RBT) and normal traffic operations between 18<sup>th</sup> February 2010 and 24<sup>th</sup> April 2010 between the hours of 8:00am and 10:00pm. The data collection occurred within defined Queensland policing regions. QPS advised that the Central Region were unable to assist in collecting data for the roadside licence check survey as they were involved in conducting their own operations at the time. All remaining seven Queensland policing regions participated in the data collection.

The RBT operations involved a line of police officers conducting breath testing to determine whether the driver was over the legal BAC level for their licence type. Heavy vehicles were not targeted specifically and officers stopped vehicles other than heavy vehicles randomly during these operations. Depending on the size of the RBT operation, up to four officers would collect licence data, utilising the data collection form, and conduct the breath test. If the driver presented their driver licence, the police officer would record the required information, conduct a breath test and release the driver. If the driver was not carrying their driver licence, the police officer would question the driver and if necessary pull the vehicle out of the line of vehicles. This would allow QPS officers to conduct a more in-depth interview and complete any necessary paperwork.

As part of the interview with those drivers not producing a licence, police officers would record a driver's individual name and date of birth and advise them that they had 48 hours in which to present their driver licence to their nearest Police Station, or to a Police Station agreed to by them. There was no survey-related follow-up action taken in relation to drivers directed to produce their driver licence at a Police Station, although this would have occurred as part of normal policing practice. Finally, all data was matched with official licensing records from TMR via the drivers' licence number.

## Results

### Data collection

Table 1 reveals that approximately 49 percent of surveys were conducted in the greater Brisbane area. As can be seen, some of the Regions were oversampled relative to population (e.g., Metropolitan North and South), while others were under-sampled (e.g., North Coast and South Eastern).

It should be noted that the data collection period encompassed two weekends that included public holidays, these were the Easter long weekend from 2<sup>nd</sup> to 5<sup>th</sup> April 2010, and the ANZAC day long weekend from 24<sup>th</sup> April to 26<sup>th</sup> April 2010. It was also noted that the majority of the data was collected in March 2010 (47.8%), with the remainder divided fairly evenly between February (24.1%) and April (28.1%) 2010. Although police data collection was also spread across the days of the week, the majority was collected mid-week (see Figure 1 for more information).

### Characteristics of the sample

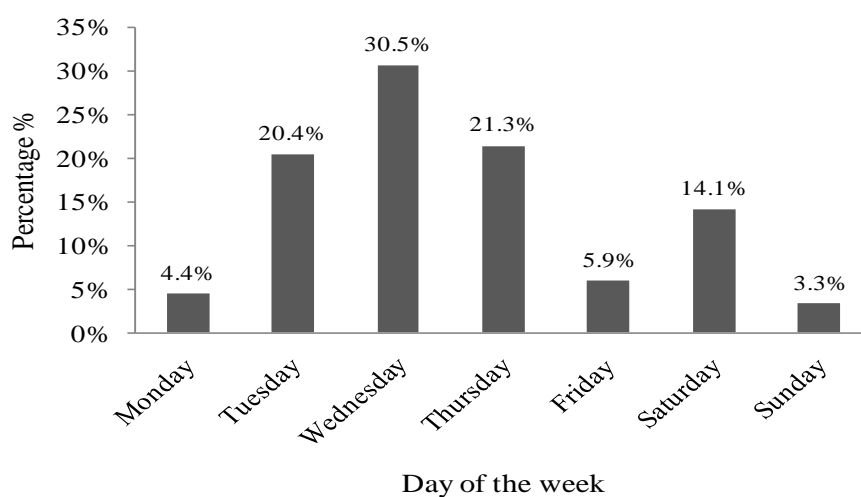
#### **Stage 1 Analysis of roadside data**

A total of 3,112 roadside licence check surveys were conducted by Queensland Police. Of the 3,112 drivers intercepted, 3,008 (96.7%) produced a licence at the roadside, whereas 104 (3.3%) did not.

**Table 1:** Roadside licence check surveys conducted by Police region.

Regions involved*	Population	% of total population	% of drivers intercepted
Far Northern	276,515	6.7	11.7
Metropolitan North	656,725	15.8	20.9
Metropolitan South	724,089	17.5	28.2
North Coast	848,544	20.5	7.5
Northern	282,306	6.8	9.6
South Eastern	842,057	20.3	13.2
Southern	513,191	12.4	8.9

\*Note: Excludes Central Queensland Region which did not participate in the survey.

**Figure 1:** Roadside licence check surveys conducted by days of the week.

Of the 3,008 drivers that did produce a licence roadside, 22 (0.7%) were identified by the police at the time to be driving unlicensed or unaccompanied. Examination of these 22 drivers revealed that nine held an expired licence (0.3%), eight were driving unaccompanied with only a Learner Licence (0.3%); four held a SPER suspension, and one was operating a vehicle with the wrong class of licence (0.0%).

Conversely, of the 104 drivers who did not produce a licence roadside, nine (8.7%) were identified by the police at the time as driving unlicensed or unaccompanied. Examination of these nine drivers revealed one held an expired licence (1.0%), three were driving unaccompanied with only a learner licence (2.9%); four held a SPER suspension (3.8%), and one was operating a vehicle with the wrong class of licence (1.0%).

As such, based on the survey data supplied by QPS, 3,081 (99%) of drivers intercepted by the police were identified as having a valid licence, whereas 31 (1.0%)

were unlicensed or unaccompanied. It is of interest that of these 31 drivers, 29 had held a Queensland driver's licence, while one held a NSW licence (expired) and one held a Tasmanian licence (learner unaccompanied).

## **Stage 2 – Additional Analyses**

In order to further explore the licence status of the drivers, the survey data collected by QPS was sent to TMR to match participant information with official licensing records. TMR were able to confirm the licence status of 2,914 (93.6%) of the drivers intercepted at the roadside. Of the 198 missing cases (6.4%), matches were unable to be returned for a number of reasons including drivers holding an international licence (n=30, 15.0%) or drivers holding an interstate licence (n=126, 64.0%). In total, 42 records were unable to be matched or identified as either international or interstate licence holders or the CRN was either not provided at all or was invalid.

The data matching undertaken by TMR identified that an additional nine drivers were not validly licensed at the time of the survey. That is, at the time of the roadside licence check, nine drivers produced a seemingly valid licence to the police, but were technically unlicensed at the time of interception. Of these additional nine unlicensed drivers, six had a SPER suspension, two had a demerit suspension, and one had an immediate licence disqualification.

As such, out of the 3,112 roadside licence checks conducted by police, 29 drivers were determined to be unlicensed, while 11 were driving unaccompanied on a Learner Licence (these figures include those detected roadside and later through the TRAILS database). Thus, of the total drivers intercepted, 0.9% (n = 29) were unlicensed at the time while 0.4% (n = 11) were driving unaccompanied. When expressed in terms of the number of drivers for whom records could be matched, the proportion of unlicensed drivers rose to 1.0%.

### *Characteristics of drivers matched with official licensing records*

While 2,914 (93.6%) records were able to be matched with official licensing records, some cases still reported missing data. Of those where age and gender was known (n = 2,820), it was found that the sample was predominantly male (60.5%), with ages ranging from 16 to 87 years old ( $M = 42.52$ ,  $SD = 15.14$ ). An overview of the offence characteristics of those surveyed are provided in Table 2. It can be seen that 64.1% of the sample had received an infringement notice and 18.7% had received a licence sanction between January 2003 and December 2008.

Among the drivers, 8.3% had received a SPER suspension and 8.1% had received a good driving behaviour condition associated with accumulation of demerit points<sup>1, 2</sup>. A further 5.4% of participants had received a licence disqualification, while 1.1% had received a work licence<sup>3</sup> at some point between January 2003 and December 2008.

In terms of infringement history, 54.0% of the participants had received an infringement for a speeding related offence, and 25.0% had committed an offence

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<sup>1</sup> Open licence holders: If the driver has 12 or more demerit points recorded against their traffic history in a three-year period, they can choose to have their licence suspended for a requisite period or continue driving under a period of good behaviour for one year.

<sup>2</sup> Learner and provisional licence holders: If the driver has four or more demerit points recorded against their traffic history in a one-year period, they can choose to have their licence suspended for three months or continue driving under a period of good behaviour for one year.

<sup>3</sup> In Queensland, a work licence is a restricted licence that allows a person found guilty of a drink driving or related offence to drive for employment purposes only.

that was categorised within the 'other moving' category. It was interesting to note that approximately 4.0% of drivers had committed an unlicensed driving offence during the period.

**Table 2:** Traffic offences recorded for subsample of participants matched with official licensing records ( $n = 2,914$ ): January 2003 to December 2008.

Variable	Range	Number of participants	Percentage of sample <sup>4</sup>
Licence sanctions	0-14	545	18.7%
Disqualifications	0-6	157	5.4%
Demerit point suspensions	0-4	151	5.2%
Work licences	0-1	31	1.1%
Good driving behaviour conditions	0-3	235	8.1%
SPER suspensions	0-6	243	8.3%
High speed suspensions	0-1	31	1.1%
Immediate licence suspensions	0-1	18	0.6%
Late night driving restriction conditions	0-5	99	3.4%
Traffic infringements	0-30	1867	64.1%
Drink driving offence	0-4	140	4.8%
Speeding offence	0-13	1585	54.4%
Unlicensed offences	0-4	120	4.1%
Unregistered offences	0-21	207	7.1%
Seatbelt/helmet offences	0-7	112	3.8%
Other offences	0-10	724	24.8%

Also noteworthy, from the roadside licence survey data was that 14 Queensland drivers (0.4%) returned a positive preliminary roadside breath test. No information was recorded by QPS regarding the results of the subsequent evidentiary breath test analysis. Two of the drivers who had a positive preliminary breath test were unlicensed at the time of the survey; one with a SPER suspension and one with an expired licence. It was also found that six of these drivers had one previous licence disqualification, one driver had two previous disqualifications, and one had three previous licence disqualifications.

Of the drivers surveyed at the roadside, 105 (3.4%) were driving an unregistered vehicle at the time. Of these, five were also unlicensed or unaccompanied which comprised two unaccompanied learners, one driver with an expired licence and two drivers with a SPER suspension.

Further analyses were conducted regarding the individuals not validly licensed at the time of the survey with those that were validly licensed. Chi-square tests for independence were conducted in cases where the assumptions for the test were not violated<sup>5</sup>. Comparisons showed that there were no gender differences between the licensed and unlicensed drivers/riders,  $\chi^2 = 0.04$ ,  $p = .838$ ,  $\Phi.004$ . A greater proportion of unlicensed drivers/riders had received a licence sanction in the period

<sup>4</sup> Includes only matched individuals ( $n = 2,914$ ).

<sup>5</sup> No more than 20% expected counts less than 5 and no cells with a zero value.

compared to licensed drivers,  $\chi^2 = 51.69$ ,  $p = .0001$ ,  $\Phi.13$ . Interestingly, while a slightly higher proportion of the unlicensed drivers/riders had at least one speeding infringement in the period, compared to licence drivers/riders this difference was not statistically significant,  $\chi^2 = 2.06$ ,  $p = .151$ ,  $\Phi.03$ .

### Discussion

This research has examined the utility of estimating the prevalence of unlicensed driving in Queensland utilising a roadside licence check methodology. Considering the illegal nature of unlicensed driving, this is an important step as it provides a more direct means of estimating the prevalence of this behaviour [11].

Based on data extracted from TMR's road crash database for the years 2003-2008 this study confirms the hypothesis that unlicensed drivers are over represented in official crash statistics, particularly in more severe crashes. For example, examination of licence status of drivers involved in crashes in Queensland between 2003 and 2008 reveals that unlicensed drivers represented 3.8% of drivers involved in crashes of all severity, but 5.1% of those involved in serious injury (hospitalisation) crashes and 8.9% of those involved in fatal crashes. This builds upon previous research [4,13], which revealed that unlicensed drivers and motorcycle riders were over-represented in crashes when compared to licensed drivers. As such, this preliminary investigation provides important exposure data relating to the incidence of unlicensed driving, which has been lacking for some time. It also complements previous findings which point to the over representation of unlicensed drivers in severe crashes. This suggests a need for future policy development to address ways to minimise unlicensed driving on Queensland roads.

Other interesting findings emerged from this research. Firstly, an analysis of the driving histories of those drivers intercepted, for whom their records could be matched, indicated that traffic offending behaviour was quite widespread. Over 60.0% had received a traffic infringement over the six year period 2003 - 2008, with speeding offences being the most common. Interestingly, 18.7% of the intercepted drivers received a licence sanction during the period, indicating that the potential pool of unlicensed drivers is quite large. However, only 4.1% had been detected driving unlicensed during the period, which over the six year period represents a lower average rate of unlicensed driving than reflected in the survey findings. This suggests that some unlicensed drivers are successful in avoiding detection consistent with the low risk of apprehension reported by offenders in previous studies [2,13]. This practice may be reflected in the methodology employed in this study, in which licence checks were conducted as part of regular policing practice (i.e., RBT operations). The locations for the data collection were therefore restricted to static interception sites, which may be well known, especially by residents of a particular suburb and in smaller regional towns. Future licence checks should be undertaken using a combination of RBT operations, static intercepts at non RBT sites, and mobile intercepts, thereby minimising the extent to which some unlicensed drivers may avoid detection by not driving through those areas which are known to be used by police to conduct RBT and other interception operations.

It is pleasing to note that only 11 of the learner driver's intercepted were driving unaccompanied. This represented around 0.4% of all the drivers intercepted.



Nonetheless, this is an issue that requires more attention since unaccompanied driving by learners is both potentially a high-risk behaviour and serves to undermine the integrity of the graduated driver licensing system.

One issue that needs to be taken into account when interpreting the findings of this research concerns the representativeness of the data collected. Arguably, the use of roadside licence check studies represents the most accurate and reliable method of estimating the extent of unlicensed driving, since it more directly accounts for the exposure of offenders than other methods. However, the strength of these studies is dependent on the sampling strategies utilised. For example, in order to provide a representative estimate of unlicensed driving, roadside licence check studies need to sample a diverse range of times, days of the week, and location (both rural and urban). Without a robust sampling strategy, these methods could inadvertently either under-estimate or over-estimate the extent of unlicensed driving. In addition, it is likely that further biases would be introduced if it was not possible to accurately verify the licence status of the drivers intercepted or observed using such methods (e.g. if it is not possible to check whether a seemingly valid licence is indeed currently valid).

In regard to the representativeness of the sample, it is interesting to note that the 1.0% of drivers found in this study to be unlicensed is lower than the 2.4% found in the 1991 study conducted in NSW, which was also conducted in conjunction with RBT. It is unclear whether the lower rate found in the current study is due to underlying differences in the extent of unlicensed driving across the two jurisdictions over time, or is indicative of differences in the representatives of the two samples. As such, it is unclear whether the sampling strategy utilised in this study is truly representative of the Queensland driving population. The sampling strategy employed involved requesting the driver to show their licence as part of random policing operations (i.e., RBT operations). However, it is arguable that the current study is more reflective of the Brisbane metropolitan area with almost 50.0% of the surveys being conducted in Metro North and Metro South police regions. It is of interest to note that the proportion of unregistered vehicles identified in the survey is quite similar to the proportion found in observational studies in Queensland [20]; providing some support for the overall representativeness of the sample. However further investigations using this same methodology should aim to improve upon the sampling framework to ensure the representativeness of the data.

Finally, while the survey methodology employed appeared to be sound, it is important to note that the records for 42 drivers surveyed at the roadside could not be retrieved from the official licensing records. There is no clear explanation as to why the records were unable to be retrieved. As such, it is recommended that feedback be obtained from QPS as to the usability of the survey *in situ* and amendments made to improve data collection practice.

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