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FACT SHEET NO. 11

USING MOBILE TELEPHONES WHILE DRIVING

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1. Purpose of this Fact Sheet

The purposes of this paper are:

- describe the current situation in Western Australia relating to the use of mobile telephones while driving; and
- present the latest evidence relating to the crash risk associated with using mobile telephones while driving.

2. Background

Driver distraction, which has been highlighted as an emerging road safety issue in Western Australia's *Towards Zero* road safety strategy for 2008-2020[1], has been defined as "the diversion of attention away from activities critical for safe driving toward a competing activity"[2]. As such it encompasses a wide range of distracting factors both in and external to the vehicle, including the use of mobile telephones[3].

Using a mobile telephone while driving can impact at three critical levels[4].

- Drivers may be physically distracted, being required to drive one-handed either for the total duration of the call if using a hand-held device, or for part of the call if using a hands-free device.
- Using any mobile telephone also involves visual distraction when starting and completing calls and especially if texting.
- Mental distraction is another key factor, as talking and texting divert a driver's attention from the driving task and the road environment.

In Western Australia over the period 2005-2007, one-third of all serious casualties have been associated with driver distraction[1]. However the precise contribution of mobile telephones remains largely unknown. Several early overseas studies have suggested that the use of mobile telephones contributed to less than one percent of all crashes[5]: however since that estimate was prepared, mobile telephone use while driving has almost surely increased markedly.

In Western Australia, in a 2010 survey of mobile telephone owners, 54 percent of respondents admitted to reading text messages, 46 percent to answering calls, 36 percent

to making calls and 35 percent to sending texts, all while driving[6]. These findings collectively suggest that mobile telephone use while driving now represents a major road safety issue.

3. The situation in Western Australia

Jurisdictions around Australia, including Western Australia, have long recognised the safety risks posed by mobile telephones and have legislated against the use of hand-held telephones while driving. This stance has recently been strengthened in Western Australia with amendments to Regulation 265 of the Road Traffic Code 2000 thus[7]:

> *From March 1 this year, drivers will only be able to use a mobile phone to make or receive a call if the phone is secured in a mounting affixed to the vehicle, or if using a hands-free device.*
> *It will be an offence for drivers to create, send or look at a text message, video message, email or similar communication while driving, regardless of whether the phone is secured in a mounting or can be operated without touching it.*
> *The GPS function of a mobile phone may be used by a driver as long as the phone is secured in a mounting, and the driver does not touch the phone (including the keypad or screen) at any time.*

The amendments define the terms 'use' and 'held' in relation to a mobile telephone, and address questions that have been raised about 'smartphones' which have other capabilities. As a result they clarify and strengthen the existing law, which was first introduced in Western Australia in July 2001. However the use of mobile telephones is still not totally proscribed: in particular, a driver can still initiate or receive conversations, provided that the instrument is either secured in a mounting or can be operated by voice activation[8].

The penalties for violating any of the new conditions are unchanged: the loss of three demerit points and a $250 fine.

4. A summary of early research

A review of research findings relating to the driving and safety implications of using mobile telephones while driving was prepared for Australian transport jurisdictions in 2003 and revised in 2008[9]. For full details see:
http://www.austroads.com.au/handbook.html .

In summary, both simulator studies and studies using real behind-the-wheel driving concluded that in the main, hands-free mobile telephone use while driving led to significant driving impairment. Some studies confirmed this finding for both hand-held and hands-free mobile telephones. Other studies showed that while hands-free mobile telephones had advantages over hand-held devices, the former were still associated with significant driving impairment. The authors of the review cited the following statement[10]:

> *… the use of cellular phones disrupts performance by diverting attention (from) the external environment immediately associated with driving. …legislative initiatives that restrict handheld devices but permit hands-free devices are not likely to eliminate the problems associated with using cell*

> *phones while driving because these problems are attributed in large part to the distracting effects of the phone conversations themselves …*

In reviewing the evidence directly relating to crash risk and using mobile telephones, two widely acclaimed studies were found:

- a study in Toronto identified drivers involved in non-casualty crashes who owned mobile telephones and then analysed each driver's mobile telephone use (based on detailed billing records), especially during the day of the collision. Calls made or received up to ten minutes before the collision were associated with a 4.3x crash risk - a finding which applied to both hand-held and hands-free mobile telephones[11];
- the second study was conducted along similar lines in Western Australia, involving a sample of drivers treated at select hospitals for injuries incurred in crashes between April 2002 and July 2004[12]. Based on telecommunications records, mobile telephone use within the 10-minute period before the crash was associated with a four-fold increase in the likelihood of being in a crash that required hospital attendance. The risks for hand-held and hands-free mobiles were 4.1x and 3.8x respectively, and in both cases were statistically significant.

A criticism that has been levelled against some studies in this area is that any association between mobile telephone use and crash risk may be because drivers using mobile telephones also take other risks while driving. The 'case-crossover' research design used in both the above studies controlled for this possibility, thereby substantially strengthening the findings.

5. A summary of recent research

There is now a substantial body of research literature relating to the impact of using either hands-free or hand-held mobile telephones on driving performance[13]. The studies vary widely in quality of research design and in the measures of risk used - with most studies concentrating upon aspects of driving performance (including visual scanning, reaction times and vehicle control factors such as lane-keeping, headway and turning manoeuvres). Some studies have used simulators, others have directly measured on-road performance. While these studies are useful in indicating areas where driver performance might be impaired, it is often difficult to reach firm, quantified measures of any decrement in driving performance. In addition to variations in the quality of research design, the impact of mobile telephone use may be lessened or increased according to road conditions and the driver's own characteristics[13].

These variations and uncertainties notwithstanding, several reviews and meta-analyses of existing studies[5,14,15,16,17] collectively concluded that there is ample evidence to associate mobile telephone use with reduced driving performance and that this reduction pertains to both hand-held and hands-free telephones. However poor driving performance does not necessarily lead to an increase in crash risk, with any decline perhaps being at least partly compensated for reducing driving speeds or other strategies. Several studies which attempt to directly link mobile telephone use with increased crash involvement have been included in the reviews, with one review[5] having identified twenty-one such studies. The reviewers concluded that the majority of studies confirm the crash link. However the two studies[11,12] cited in the previous section still provide the strongest evidence, with other

studies being limited especially by small sample sizes and unreliable methods of determining mobile telephone use.

One review of the literature[16] took as its main research question, whether hands-free telephones were safer than hand-held telephones. The conclusion:

> We posed two questions at the beginning of this review: is talking on a (hands-free) cell phone while driving safe, and is there a difference in safety between talking on a (hands-free) phone and talking on a (hand-held) phone. Based on accident rates linked to cell phone use in the real world, and based on objective measures of distraction in experimental studies, we have shown, in this review, that the answer to both questions is "No".

6. Conclusions

As noted by the US National Road Safety Council[13], the increasing recognition of mobile telephone use while driving has resulted in numerous pieces of legislation aimed at improving driver safety. At the same time, the Council also noted that nearly all legislation focuses on banning only hand-held telephones or only texting while driving. It seems that the same situation holds true in Australia generally and Western Australia specifically.

The body of evidence strongly indicates that the use of both hand-held and hands-free mobile phones while driving is dangerous. Legislation which aims to curb any use of mobile telephones while driving is to therefore be welcomed in principle. However legislation which leaves the driver free to use hands-free telephones for conversation and other purposes is ignoring a vast body of research findings and remains inadequate from a safety perspective.

7. References

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