IMPAIRED DRIVING RISK ASSESSMENT

A PRIMER FOR PRACTITIONERS

IMPAIRED DRIVING RISK FACTORS

TIRF

The knowledge source for safe driving

TRAFFIC INJURY RESEARCH FOUNDATION

The Traffic Injury Research Foundation

The mission of the Traffic Injury Research Foundation (TIRF) is to reduce traffic-related deaths and injuries. TIRF is an independent, charitable road safety research institute. Since its inception in 1964, TIRF has become internationally recognized for its accomplishments in identifying the causes of road crashes and developing program and policies to effectively address them.

This primer was contracted with the Traffic Injury Research Foundation (TIRF) and funded by the Canadian Institutes of Health Research (CIHR) Team in Transdisciplinary Studies in Driving While Impaired Onset, Persistence, Prevention, and Treatment.

Traffic Injury Research Foundation
171 Nepean Street, Suite 200
Ottawa, Ontario K2P 0B4
Ph: (613) 238-5235
Fax: (613) 238-5292
Email: tirf@tirf.ca
Website: www.tirf.ca

January 2014

Traffic Injury Research Foundation

ISBN: 978-1-926857-50-3

IMPAIRED DRIVING RISK ASSESSMENT: A PRIMER FOR PRACTITIONERS

Robyn D. Robertson / Katherine M. Wood / Erin A. Holmes

Traffic Injury Research Foundation

IMPAIRED DRIVING RISK FACTORS

This document is an extracted chapter from the 'Impaired Driving Risk Assessment: A Primer for Practitioners' publication. The full report as well as a complete reference list are available online at www.tirf.ca. You may also download directly the executive summary or any other chapters of the full report.

Or you can order a paper copy by email at tirf@tirf.ca or by phone at 1-877-238-5235. (Please note minimum shipping and handling fees may apply.)

5. IMPAIRED DRIVING RISK FACTORS

Risk factors are characteristics that are identified (according to sufficient research evidence) to be indicators of the potential for a group of individuals with shared characteristics to engage in a specific behaviour in the future. It cannot be underscored enough that "understanding the factors associated with recidivism is critical to our capacity for better detection of high-risk offenders and our ability to orchestrate effective countermeasures" (Ouimet et al. 2007 p. 743).

Generally speaking, risk factors are organized in two distinct categories: 1) static factors (e.g., number of prior offences) that cannot be changed; and, 2) dynamic factors (e.g., substance abuse) which may change over time (Gendreau et al. 1996; DeMichele and Lowe 2011). Again, risk factors are relative to a group and not an individual and, subsequently, these measures are not very robust (Nadeau 2010).

Risk assessment is a process that utilizes identified risk factors (usually in relation to multiple domains) to predict future behaviour. Risk assessment is not an exact science and risk factors only provide insight into the probability or likelihood of recidivism of offenders based upon existing research that is available. In this regard, much of the research around risk prediction has focused on criminal offenders and, in particular, those who have committed violent and/or sexual offences.

Historically, risk assessment instruments were viewed as little more than educated guess work and, generally speaking, studies have demonstrated that the accuracy of risk assessment tools is questionable. As such, practitioners are cognizant of the potential for both false-positives and false-negatives (Miller and Brodsky 2011). False-positives are the application of a high-risk classification to offenders who do not recidivate. False-negatives, on the other hand, are the application of a low-risk classification to offenders who do recidivate. Strategies used to reduce the frequency of false-positives and negatives often utilize multiple factors and combine actuarial evaluation and clinical observation.

More recently, the quality of instruments[1] used with offenders generally has greatly improved (Andrews & Dowden 2006) as our understanding of risk factors has grown. To illustrate, a study conducted by Latessa et al. (2009) found that, among offenders who were three years post-release, 10% of offenders classified as low-risk were re-arrested compared to the re-arrest of 70% of offenders classified as high-risk. Risk assessment instruments that possess a higher degree of accuracy in prediction generally account for multiple risk factors to reach a determination as to the probability of recidivism, and place a greater emphasis on objective measures as opposed to just the reliance on professional judgment which is more often subjective.

A broad range of risk factors have been noted in the literature regarding impaired drivers including: sex, age, marital status, socio-economic status, history of prior treatment, impaired driving history, criminal history of violent aggression, prior traffic offences, test refusal or high-BAC, and drinking patterns to name a few (Syrcle and White 2006). Yet, these studies vary dramatically in terms of the population studied, sample size, variables and measures utilized, data sources, analyses conducted, comparison groups employed, the time period used to measure recidivism, and the interpretation of results. Moreover, the number of studies that have examined the reliability of each individual risk factor is relatively small, which makes the drawing of conclusions a challenge.

Hence, to date, there are no reliable predictors of risk among impaired drivers (Nadeau 2010). Moreover, what research there has been regarding the prediction of risk among impaired drivers has focused more on males than females (Lapham et al. 2006).

In light of the limitations associated with research investigating risk factors associated with impaired driving, what is currently known about impaired driving risk factors should be interpreted cautiously. At best, no single impaired driving risk factor provides a clear indication regarding the potential for future impaired driving recidivism. Collectively, however, these risk factors may provide some insight that enable practitioners to gauge the need to further explore individual cases and the need for more intensive interventions. This recommendation is consistent with recommendations in the research literature (C'de Baca et al. 2001; Nochajski and Stasiewicz 2006; Syrcle and White 2006). It has also been recommended that studies should assess relevant self-reported measures for response bias as this can influence outcomes in studies investigating predictors of recidivism (Schell et al. 2006).

A brief overview of some of the key research studies that have been conducted on impaired driving risk factors is provided below. Inconsistent findings across studies are clearly evident in relation to some factors. An emphasis has been placed mainly on studies that have been conducted since 2000 with a few exceptions. Practitioners interested in more detailed

1 It is equally important that risk assessment instruments demonstrate proven reliability and are scientifically validated and standardized on an appropriate population.

information about risk factors are encouraged to consult the individual studies cited and to carefully consider the research designs that were used in the drawing of conclusions.

5.1 Male Risk Factors

5.1.1 Demographic factors

Age. A number of studies examine age as a factor. Lapham et al. (2000) determined that age group at screening was strongly associated with impaired driving recidivism for males but not for females. In particular, it was noted that younger age among males was an important factor in predicting recidivism. Other studies that have similarly reported that offenders that are of a younger age (under 30) are at greater risk to receive a subsequent impaired driving offence include C'de Baca et al. (2001), Taxman and Piquero (1998), and Syrcle and White (2006). Most recently, this finding was again affirmed in a study by Rauch et al. (2010) which reported that younger males have a higher risk of recidivism than older males or females of any age group.

Sex. A number of studies have suggested that males are more likely to be repeat offenders and this is perhaps one of the most common factors that is noted in the risk literature (Nochajski 1999; C'de Baca et al. 2001; Syrcle and White 2006). However, more recently, a study by Rauch et al. (2010) reported that adult males and females are at equal risk for recidivism following their first alcohol-related violation. Although, the proportion of female drivers varied little between 1999 and 2004, their proportion decreased dramatically with increasing counts of prior violations. Women accounted for 51%, 18%, 13%, and 8% of the drivers with 0, 1, 2, and 3 or more prior violations, respectively. The male to female ratio of violation rates also decreased with increasing prior counts. The risk for men relative to women was 1.2 for drivers with 1 prior violation, 1.0 for drivers with 2 prior violations, and 1.0 for drivers with 3 or more prior violations (Rauch et al. 2010).

Marital status. Lapham et al. (2000) reported that marital status is significant as a predictor but only when using a univariate model and not when included in a multivariate model. A study by Syrcle and White (2006) indicated that marital status, in particular, having never been married or being divorced, was a predictor for men and women.

Most recently, in the development of the Impaired Driving Assessment (IDA) instrument for screening impaired driving for risk, needs, responsivity, and traffic safety (American Probation and Parole Association (2013)), never-married marital status was found to have a significant correlation with and contributed significant variance in predicting a twelve-month outcome scale comprised of variables measuring: any arrests, positive for drugs, missed judicial supervision appointments, revocation of probation, and re-arrest for impaired driving during the 12 month period of judicial supervision.

Ethnicity. The number of studies that have investigated this specific factor have been fairly limited, however a few studies have reported that ethnicity is a predictor of recidivism (Lapham et al. 2000; Christopherson et al. 2002). Of note, findings vary according to the nature and location of the study and are not consistent. C'de Baca et al. (2001) noted that ethnicity was a predictor using a univariate model, but not in a multivariate model.

Life history. Lapham et al. (2000) reports that the presence of family members or spouses with alcohol problems is predictive both of higher risk for alcohol problems among offenders, and also increased recidivism risk, and this finding was based upon self-reported characteristics. The study further notes that "given the association of these indicators with recidivism, it appears prudent to elicit this information during a DWI evaluation" (p.1653). Similarly, Wieczorek and Nochajski (2005) also reported that a father with a drinking problem and a relative arrested for impaired driving were the family factors most strongly associated with the number of prior impaired driving offences.

Taking a slightly different approach, Begg et al. (2003) reported that aggressiveness at age 18 when combined with alcohol dependence at age 21 was a predictor for future involvement in an alcohol-related crash.

5.1.2 Personality and psychosocial factors

According to a study by Mann et al. (2004), aggression is a risk factor for future impaired driving recidivism and also other public safety risks such as road rage. This is further substantiated by recent findings of alcohol problems among those involved in road rage incidents as Zuckerman (2000) found reckless driving was related to drinking.

A number of studies have examined personality and psychosocial factors, including Wieczorek and Nochajski (2005) which suggest that psychiatric conditions could be useful for identifying potential recidivists. Conversely, Schell et al. (2006) conclude that "there are no strong psychological predictors of recidivism" (p. 34).

5.1.3 Substance misuse

Early onset of alcohol and drug use and abuse is predictive of adult impaired driving (Hingson et al. 2002; Hingson et al. 2003; NHTSA 2001). Specifically, early onset drinking is a predictor of several relevant behaviours including: future driving after any drinking, driving after five or more drinks, riding with an intoxicated driver, and involvement in alcohol-related crashes (Hingson et al. 2003).

Frequency of drinking has been reported by Schell et al. (2006) as the single strongest predictor of driving after drinking. He further noted that persons who expect positive emotional outcomes as a result of drinking, and who drink frequently are more likely to continue to drive after drinking.

Lapham et al. (2000) reported that admission to lifetime use is a risk factor for recidivism. Similarly, Schell et al. (2006) noted that impaired driving offenders with the most severe alcoholism had the greatest risk for repeat impaired driving convictions. Finally, a 2006 study by Syrcle and White confirmed that drinking larger quantities of alcohol over extended periods of time prior to driving was also a predictor or recidivism risk.

An examination of drug use as a factor by Wieczorek and Nochajski (2005) revealed that there were significant differences in drug use according to the number of prior offences, and indicated higher levels of drug use among repeat offenders.

5.1.4 BAC

Although often cited as a reliable predictor of recidivism, research findings on this specific variable are mixed at best. C'de Baca et al. (2001) reported that BAC was a significant predictor of recidivism whereas Wieczorek and Nochajski (2004) reported that offenders with lower BACs were more likely to recidivate. This is consistent with their earlier findings (Nochajski and Wieczorek 1997) which noted that a low BAC (under .16) is a better predictor of recidivism than a high BAC (.18 or greater).

This is not to suggest that BAC is not an important variable for other purposes. In particular, BAC is a significant predictor of degree of involvement in and disruption from alcohol use and abuse and it should be used along with information about alcohol and drug use as a key factor in determining appropriate placement in treatment interventions. BAC at the time of arrest is generally recognized as an important factor to distinguish between different types of impaired drivers and their need for assessment and/or intervention (Wanberg et al. 2005; Syrcle and White 2006).

In a study examining the characteristics of impaired driving recidivists, Caviola et al. (2007) concluded that BAC may have limited utility for the purposes of screening. In particular, the study reported that "this should not be interpreted to mean that high blood alcohol levels at the time of arrest do not have clinical utility. Rather, it is recommended that BAC be interpreted cautiously or in conjunction with other predictors of potential DUI recidivism risk" (p.859). Most recently, a study by Dugosh et al. (2013) provides evidence to indicate that a driver's BAC level at arrest, in the absence of other information, also may not be a reliable indicator of the degree of alcohol-related problems including diagnoses of abuse and dependence.

5.1.5 Instruments

There are several risk assessment instruments that have reported some strength in predicting impaired driving recidivism risk. First, the MAST has been found to significantly predict recidivism status as reported in two key studies (Lapham et al. 2000; Cavaiola et al. 2003). However, the Lapham et al. (2000) study only determined that the MAST was associated with

recidivism when univariate analyses were conducted, and when a multivariate model was utilized the results were no longer significant.

Second, the MAC scale of the MMPI, which measures general personality traits characterized by sociability, boldness, rebelliousness, and pleasure-seeking also has shown some positive results. In particular, high scores on the MAC (a raw score of 23 or higher) have been shown to be predictive of impaired driving recidivism (Lapham et al. 1997). Most recently, a review of the evaluation literature in relation to risk assessment instruments by Brown and Ouimet (2013) concluded that "there is support for the MAC's scale's predictive validity for [DWI] risk assessment but more mitigated support for other MMPI scales" (p.310).

Third, a study by Nochajski and Wieczorek (1998) (cited in Cavaiola et al. 2007) reported that subtle items of alcoholism included in the RIASI were predictive of recidivism. Finally, a study by Syrcle and White (2006) reported that 14 of the 16 scales of the Adult Substance Use Survey Revised-Illinois (ASUDS-RI) (Wanberg and Timken 2006) uncovered significant differences between first and repeat impaired drivers.

A current demonstration project being conducted by the American Probation and Parole Association and funded by the National Highway Traffic Safety Administration (DeMichele et al. 2013) has developed a preliminary Impaired Driving Assessment screening instrument. Preliminary findings are promising with respect to providing probation intake services guidelines for judicial supervision placement and referral to outside services (Wanberg and Lowe 2013).

Of note, there is important research that illustrates "how variations in base rates of failure and selection ratios affect conclusions concerning the efficacy of different instruments" as a strategy to demonstrate the value of evaluation standards in order to make valid comparisons between risk prediction instruments (Anderson et al. 2000, p. 915). In layman's terms, this means that different jurisdictions or offender samples will have higher or lower rates of failing, and that agencies need to make decisions about how to balance the positive and negative predictions. That is, assessment is an exercise in prediction, and prediction has error. Hence, some offenders will be predicted to recidivate but do not (false-positive), whereas others will be predicted to recidivate and they do (true positive). Similarly, those predicted to be low risk may recidivate (false-negative) and others will not recidivate (true negative). It is a bit of an art to balance these issues, but also a matter of agency capacity. The bottom line is that due to decisions regarding instrument precision, practitioners should be careful about comparing different assessments and even the same assessment across different populations.

5.1.6 Biomarkers

Impaired drivers, both first and repeat offenders, suffer from high rates of alcohol use disorders (AUDs) (Lapham et al. 2001). Biomarkers can detect the presence of these disorders

fairly accurately. A number of studies have investigated the extent to which biomarkers are predictive of impaired driving recidivism. Couture et al. (2010) showed biomarkers were not a good predictor of recidivism, individually or as a group. They failed to differentiate between first and repeat impaired driving offenders. The primary reason for this is that biomarkers may not capture the drinking patterns that are most common among impaired driving offenders – e.g., binge drinking (Couture et al. 2010). Biomarkers more accurately identify severe and chronic patterns of alcohol use as opposed to the episodic heavy drinking that often precipitates impaired driving. Moreover, alcohol misuse alone is not enough to identify the propensity of an individual to recidivate as there are a combination of other factors (such as personality traits or cognitive impairments) that can interact with substance misuse to lead to high-risk behaviour such as impaired driving (Brown et al. 2009; Nochajski and Stasiewicz 2006; Ouimet et al. 2007). As such, biomarkers of chronic patterns of heavy drinking may not be adequate in and of themselves to "capture the multiple processes that appear to promote recidivism" such as binge drinking and other risky behavioural and personality features (Couture et al. 2010, p. 307).

5.1.7 Driver and criminal history

Driver history. In a study by Peck et al. (1994), driving records of first and repeat impaired drivers (using a four-year follow-up period) were analyzed using multivariate analyses to assess predictors of impaired driving recidivism. Prior involvement in crashes and traffic violations were the strongest predictor of membership in the repeat offender group. Similarly, NHTSA (1996) reported that the risk of future arrests rises in conjunction with the number of prior impaired driving arrests. A major study in Maryland by Rauch et al. (2002) involving several thousand driver records confirmed that any alcohol-related driving event is predictive of future impaired driving behaviour. In 2005(a), Wieczorek and Nochajski confirmed this finding as did Schell et al. (2006) who noted that high-risk driving style was a significant predictor with a moderate effect size. Most recently, Cavaiola et al. (2007) also concluded that a poor driving record that includes offences both prior to and following the initial impaired driving offence is predictive of recidivism. However, some have noted that prior impaired driving arrests may not be a good predictor as the presence of prior arrests is influenced to a large extent by the level of impaired driving enforcement as well as the length of the "look-back" period for counting prior arrests (Nochajski and Stasiewicz 2006).

Criminal history. Some studies have reported that prior criminal history other than impaired driving offences is a predictor of impaired driving recidivism (Syrcle and White 2006). A 2007 study by Labrie et al. examined criminality and continued impaired driving offences and concluded that rates of recidivism increased with the severity of criminal behaviour (e.g., crimes progressing from substance-related crimes to property crimes to crimes against persons). "Compared to the DUI only type, the property crime subjects were 1.4 times more

likely to be re-arrested for DUI and person crime subjects were twice as likely to recidivate" (Labrie et al. 2007, p.611-612).

Moreover, research investigating risk factors associated with criminal re-offending has identified a number of objective and verifiable risk indicators that are useful to distinguish between first and repeat impaired drivers. These variables are associated with an offender's criminal history and include "age at time of first arrest for any criminal act, age at time of first impaired driving conviction, having a prior summary of alcohol- or drug-related offence, having a prior misdemeanor offence, having a misdemeanor offence for a crime against persons, or having five or more prior moving violations" (Dugosh et al. 2013, p.8). In addition, other risk variables that have been shown to differentiate between first and repeat impaired driving offenders include "age of onset of substance abuse, having a prior treatment episode, or loss of employment or expulsion from school because of drug or alcohol use" (Dugosh et al. 2013, p.8).

5.1.8 Interlock fails

Research suggests that a high rate or pattern of BAC fail readings from the alcohol interlock, particularly in excess of .02, is predictive of the likelihood of impaired driving recidivism (Marques et al. 2003; Beirness and Marques 2004). A major study conducted in Alberta analyzed 5.5 million BAC tests provided by 2,200 offenders (Marques et al. 2001). It was subsequently demonstrated that the likelihood of future impaired driving convictions in the first two years following the removal of the interlock can be strongly predicted based on the rate of elevated (greater than .02) interlock BAC tests (Beirness and Marques 2004). A subsequent study in Quebec involving 7,200 offenders who provided 18.8 million breath tests confirmed this finding (Marques et al. 2003). In fact, more interlock warnings and failures logged during the first five months of interlock usage predict greater than 60% of repeat impaired driving offence with a false-positive rate (which occurs when a clean breath sample is erroneously determined as containing alcohol) of less than 10% (Marques et al. 2001).

Researchers have also determined that the presence of elevated BAC tests during early morning hours can also assist in predicting future impaired driving offences (Beirness and Marques 2004). Early morning high BAC tests are usually a result of drinking the prior evening and indicate the extent of drinking that occurred. The presence of two or more elevated BAC test results during the morning hours further bolsters the predictive model regarding the likelihood of future impaired driving offences (Marques et al. 2003).

Prediction of repeat offences has been associated with a profile of drivers who are both multiple offenders and who have more than a few elevated interlock BAC tests (Marques et al. 2003). Marques and Voas (2008) found that the number of failed BAC tests logged is predictive of repeat impaired driving offenders. The higher the rate of failed tests, the more likely offenders will recidivate once the interlock is removed. Also, those offenders who are

in the top 20-30% of elevated interlock BAC tests have significantly higher levels of alcohol biomarkers associated with problem drinking (Marques and Voas 2008).

5.1.9 Repeat and/or hard core impaired drivers

According to a presentation by Nadeau (2010) at an international conference in Canada, a number of recent studies have identified risk factors among repeat offenders in comparison to first offenders. Low levels of participation or involvement in treatment and treatment interventions is considered predictive of recidivism (Aharonovich et al. 2003; Crews et al. 2005). This is further confirmed is a study by Syrcle and White (2006) and a review of the literature by Wanberg et al. (2005). Neurocognitive deficits have also been reported as predictive of recidivism among repeat offenders. More specifically, these deficits can contribute to variation in affect, impulsivity, problem solving, perception and memory (Glass et al.2000; Ouimet et al. 2007). Finally, a reduced ability to change is also predictive among repeat offenders of future impaired driving offences (Buntain-Ricklefs et al. 1995; Glass et al. 2000; Ouimet et al. 2007).

5.2 Female Risk Factors

There is one key study that examined differences in risk factors among men and women. For the most part, few differences were found in terms of predictive variables with the exception that women were more likely to report a history of aggressive behaviour towards a partner than were males, and this indicator was associated with increased recidivism (Lapham et al. 2000).

Of interest, the Lapham et al. (2000) study further noted that, while rates of physical and sexual abuse among men and women are high among those with substance abuse problems, this factor is not associated with recidivism for either sex.

5.3 Summary

While it is clear that a wide range of risk factors have been examined in relation to the prediction of repeat impaired driving offences in the past two decades, the findings from this research are inconsistent in many cases and far from conclusive. There are only a small handful of common factors that have been investigated across several studies, however with regard to criminological research, more is known about risk factors among repeat drunk drivers. For these reasons, practitioners in the field are encouraged to take a broader view of and approach to the use of these factors, and focus on the presence of a number of risk factors collectively as a basis to inform decisions, as opposed to the presence or absence of individual factors. Much more research on this issue is needed before definitive conclusions can be reached.

5.4 Some Reflections on Estimating Impaired Driving Recidivism

By: Dr. Ken Wanberg & Dr. David Timken

There are a number of problems and questions that impact on this approach or any recidivism-risk prediction model. First, given the evidence thus far, the best set of predictor variables or scales that can be gleaned from multivariate studies will serve only as estimates of recidivism. Most models are linear: those with high scores are high risk or positive for recidivism; those with low scores are low risk or negative for recidivism. And, these models can do a fair job of estimating the percent of individuals who will or will not recidivate. Predictive models become complex when we look at the false-positive and false-negative issue because these models tend to focus on identifying those who are positive for re-offending. Those who do not offend in this positive group are false-positives. Thus, if the false-positive rate is 35%, then the predictive model is correct 65% of the time. However, what about the residual group, or those negative for re-offending? What percent of those do re-offend? If the linear model is reliable, then we can decrease the false-positives by choosing a higher cut off value and putting fewer clients in the potential to re-offend. However, this just increases the risk of false-negatives or a higher percent of those not positive for re-offending who do re-offend.

Second, there are many unknown or un-measured idiosyncratic variables that can occur in the individual's life that will contribute variance to outcome. For example, a never-married male with high potential for recidivism based on the best predictor variables gets married, has a child, and engages in a life-path of responsibility. Or, someone identified as a low risk for recidivism experiences a traumatic life-event (e.g., divorce, losing a job), becomes depressed and "doesn't care" and drives impaired. In our clinical experience we have found these to be rather frequent occurrences. These "new events" usually cannot be predicted by retrospective measures and certainly, evaluators do not have a "magician's ball" to predict these occurrences.

Third, any measured prediction of recidivism at either the group level or individual level will be affected by service interventions provided to impaired driving offenders. Most, if not all, sentenced impaired driving offenders receive judicial supervision, education and/or treatment services or a combination of all three. If these are effective, and the literature indicates this to be the case, then they will mitigate the estimated prediction. That is, effective intervention services will tend to increase the false-positives. Any risk-prediction model must consider the variance resulting from intervention services. Unfortunately, since intervention services vary considerably as to method, type and efficacy, one can only estimate the impact of these services (e.g., reducing recidivism rates by 10 to 20%).

Fourth, since it is common to provide fewer services for those evaluated as having a low recidivism risk, this can contribute to an increase of false-negatives. This is based on the common view held among judicial workers that those identified as low risk need minimal or no intervention services. What this does is generate a relatively large cadre of those identified as negative for re-offending which increases the probability of a false-negative. It is quite likely that the Wieczorek and Nochajski (2005) findings that those with lower BACs had a higher probability or recidivism had more to do with a significant percent of those with low BACs being placed in no or very minimal intervention services.

Fifth, the difficulty of predicting impaired driving recidivism is increased by the low variance of outcome variables. Outcome measures such as revocations, re-arrests, missing judicial supervision appointments, and so forth, taken at six-month post-probation intake typically have low variance (Wanberg and Lowe 2013). This can limit the use of predictive statistical methods when samples are relatively small. For example, if only 5% of the clients are re-arrested six months post-sentencing, even a sample of 500 will provide only 25 offenders in the re-arrest category.

Sixth, re-offending statistics are usually based on the big-face valid variable of re-arrests. However, the literature indicates that the percent who drive impaired is much greater than those who are re-arrested (see Wanberg, Timken and Milkman 2010). The pool of re-arrests must come from that group; but, is it a random sample of that group? Most likely it is not. Thus, recidivism prediction models should take into account those who drive impaired but are not arrested which provides an outcome variable that has a higher percent of variance.

Seventh, the value of impaired driver screening and assessment is significantly diminished when its main focus is only on risk assessment. More importantly, its value lies in providing guidelines for the type of intervention services including judicial supervision and alcohol and other drug and impaired driving intervention services.

Finally, impaired driving assessment becomes more effective when it is based on a convergent validation model (Wanberg and Milkman 1998; 2008; 2010; Wanberg et al. 2005). Based on the classic study of Campbell and Fiske (1959), the convergent validation assessment model holds that both self-report and other report information and data are used to converge on the best estimate of the individual's conditions related to alcohol and other drug use and factors contributing to impaired driving conduct and the best estimate of the individual's service needs. Self-report is seen as essential in this model in that it is a valid representation of where the individual is at the time of assessment and their willingness to self-disclose. Comparing self-report with other report data provides a basis for not only estimating the individual's condition and service needs, but also their level of defensiveness at the time of assessment. If services are working and the individual's willingness to self-disclose increases, this increases the probability of favourable outcomes.

This document is an extracted chapter from the 'Impaired Driving Risk Assessment: A Primer for Practitioners' publication. The full report as well as a complete reference list are available online at www.tirf.ca. You may also download directly the executive summary or any other chapters of the full report.

Or you can order a paper copy by email at tirf@tirf.ca or by phone at 1-877-238-5235. (Please note minimum shipping and handling fees may apply.)

Traffic Injury Research Foundation (TIRF)
171 Nepean Street, Suite 200
Ottawa, Ontario
Canada K2P 0B4

www.tirf.ca
Toll Free: 1-877-238-5235
Fax: 613-238-5292

Registered Charity No. 10813 5641 RR0001