

The EU BestPoint project: Getting the best out of a demerit point system

Klipp^a, S., Machata^b, K. & van Schagen^c, I.

^a BAST, Federal Highway Research Institute, Germany, ^b KfV, Austrian Road Safety Board, Austria, ^c SWOV, Institute for Road Safety Research, the Netherlands

Abstract

Various kinds of demerit point systems have been developed and implemented in European countries, aimed at tackling repeat offences in road transport by acting as a deterrent and providing sanctioning. The impact of a demerit point system on the number of crashes is often reported to be significant, but temporary. The objective of the EU BestPoint project was to establish a set of recommended practices that would result in a more effective and sustainable contribution of demerit point systems to road safety. A high actual chance of losing the licence and a high perceived chance of losing the licence are basic prerequisites for the effective operation of demerit point systems. For measures applied within the context of a demerit point system, a four-step-approach is recommended: warning letter, driver improvement course, licence withdrawal, rehabilitation course. Further recommendations concern issues like points and offences, e.g. which offences should lead to points, target groups, and the administration of demerit point systems. The final result of the EU BestPoint project is a handbook (van Schagen & Machata, 2012) which provides a concise overview of all recommended practices. The presentation/paper outlines how sustainable safety improvements can be achieved if national demerit point systems are implemented and maintained according to the recommended practices. In addition, potential further steps towards an EU-wide demerit point system (cross-border exchange on points and/or offences) are presented.

Introduction

Demerit Point Systems (DPS) are systems complementing traditional police enforcement by taking into account recidivism of traffic offenders. When offenders accumulate offences, they can be identified through their high, respectively low¹, amount of points. In the scope of the DPS, offenders are warned when they reach a certain amount of points in order to convince them to behave according to the traffic rules in future. Some countries which have DPS implemented also apply driver improvement measures to achieve behavioural change of offenders. In a last step, offenders are attempted to be removed from motorised road traffic through revocation or suspension of their driving licence. Often, these offenders have to undergo a special procedure prior to licence reinstatement, e.g. do a driving test or pass an assessment. To sum up, DPS have three main objectives: to deter drivers from offending, to select those who re-offend and to correct their behaviour (SWOV, 2012). At the moment, 21 of 27 EU countries have implemented some type of DPS.

This paper sums up the results of the EU BestPoint project. BestPoint is used as an acronym for “Criteria for BEST Practice Demerit POINT Systems”. The project was funded by the European Commission, Directorate-General for Mobility and Transport. It aimed at sharing the best practice of DPS to ensure road safety and to develop standardised procedures for DPS throughout the European Union (EU) with the vision of an EU-wide DPS. The project was coordinated by the Austrian Road Safety Board (KfV) in collaboration with 11 European research institutes and transport authorities: BAST (Germany), CDV (Czech Republic), CERTH (Greece), DTU (Denmark), ETSC (EU), IFSTTAR (France), ITS (Poland), Malta Transport Authority, RSA (Ireland), SWOV (The Netherlands), VTT (Finland). The target audience of the project are decision and policy makers at all levels, as well as the scientific community and practitioners in the field.

¹ Depending on the counting logic of a DPS, addition or deduction may lead to a high or low amount of points.

Methods

In order to achieve the envisaged goals, BestPoint consisted of three methodology-related work packages which were divided in several sub-tasks. The first work package (“Methodology and data collection”; Klipp, Eichel, Billard et al., 2011) collected detailed information about implemented DPS, their impact and the general framework in different EU countries. The data collection within this work package was carried out in several working steps. Information about DPS was collected from three main sources:

- a) from literature: scientific articles, reports, books and presentations
- b) from internal project team meetings
- c) from expert interviews: BestPoint team members carried out interviews in each EU country having a DPS implemented.

The second work package (“Analysis and evaluation”; Goldenbeld, Van Schagen & Vlakveld, 2012) analysed the collected information with the aim of identifying those specific characteristics of a DPS that will bring about the best possible effect. In order to achieve this, the following primary research questions were addressed:

- 1) What are the important design characteristics of a DPS that affect its functioning and outcomes?
 - a) What offences should be included for how many points?
 - b) What target groups can or should be distinguished?
- 2) What support measures will optimise the actual functioning of a DPS?
 - a) How do levels and methods of enforcement assist in its effectiveness and efficiency?
 - b) How can driver improvement and rehabilitation courses optimize its effectiveness and efficiency?
 - c) How should or can administration and monitoring be improved?
- 3) What are the short and long term outcomes (costs and benefits) of a DPS?
 - a) What are the expected safety benefits?
 - b) Which potential undesirable side effects have to be considered?

In a third work package (“Dissemination”), the results were systematically compiled into a handbook with recommendations for best practice (Machata & Van Schagen, 2012). This was presented in a final conference at the end of the project. In addition, the establishment of a website contributed to dissemination and made the results of the EU BestPoint project available to the public (www.bestpoint-project.eu).

Results

The available information differed per research question. Preferably, conclusions were based on the results of sound empirical scientific studies. This was only possible to a very limited extent. For example, overall DPS safety effects have been studied by several scientific studies. In doing so, several different methods have been used to evaluate safety effects. These methods include: before-and-after studies, quasi-experimental studies, time series and cross-sectional studies. Møller & Kallberg (2012) classified the available studies according to their methodological approach (table 1).

Table 1: Overview of evaluation methods used in different countries

Evaluation method	Country	Scientific article or report
Simple before-and-after	AE	Mehmood (2010)
	BR	Poli De Figueiredo et al. (2001)
	IE	Lenehan et al. (2005)
	IT	Farchi et al. (2007)
Simple before-and-after with some control for confounding factors	AU	Diamantopoulou et al. (1997)
	IE	Butler et al. (2005) Hussain et al. (2006) Saeed et al. (2010).
	IT	De Paola et al. (2010)
Quasi-experimental	CA	Chipman and Morgan (1975)
	DE	Schade (2005)
	FR	Delhomme et al. (2008)
Time series	CA	Hauer et al. (1991)
	DE	Heinzmann and Schade (2003) Ewers et al. (2004)
	ES	Castillo-Manzano et al. (2010) Pulido et al. (2010)
	FR	Bourgeon and Picard (2007)
	IT	Zambon et al. (2007)
	NL	Vlakveld and Stipdonk (2009)
Survey	AT	Gfrerer et al. (2005)
	AU	Clark and Bobevski (2008)
	CA	Chipman (1982) Redelmeier et al. (2003)
	DK	Rådet for Større Færdselssikkerhed (2005)
	ES	Gonzalez et al. (2008) Ruiz et al. (2009)
	FR	Page (1995) Nallet and Chiron (2008) Nallet (2009) Nallet (2010)
	IT	Zambon et al. (2008)
	UK	Fox (2008)

Countries implementing a DPS generally monitor the number of casualties or number of accidents, in order to assess the effectiveness of the DPS. A series of Spanish studies for example, reported 12% to 14 % reductions of road traffic fatalities after the implementation of the DPS in Spain (Gonzalez, Ruiz & Gil, 2008; Pulido, Lardelli, de la Fuente et al., 2010; Costillo-Manzano, Castro-Nunua & Pedregal-Tercero, 2010). These findings are supported by analyses of the impact of the introduction of the Italian DPS (De Paola, Scoppa & Falcone, 2010; Zambon, Fedeli, Visentin, et al., 2007). Results indicate reductions of road accidents, traffic fatalities and injuries. Positive effects of DPS have also often been demonstrated by decreases of medical records. Healy, Connolly, Stephens et al., (2004) reported for instance, a fall in spinal injuries following road traffic accidents after DPS implementation in Ireland. However, this initial reduction did not sustain (Butler, Burke, Healy et al., 2005). In the same country, Hussain Nayyar, Brady et al. (2006)

observed a 61 % reduction maxillofacial of injuries caused by collisions. Saeed, Khan, Dunne, et al. (2010) examined a positive influence of the inclusion of the offence of not wearing a seat belt in the Irish DPS. They conclude that this may have contributed to a significantly lower proportion of hospitalised ocular injuries attributable to road traffic accidents. All in all, there are sufficient research findings that point to positive effects of DPS, even though in most studies the effects did not sustain over the long term (> 18 months).

In addition to accident-related data, questionnaire surveys and telephone interviews serve to explore the drivers' point of view about the influence of the penalty point system on driving behaviour. Results indicate a positive impact (Radet for Storre Faerdsselsikkerhed, 2005), although the self-reported behavioural change is only moderate in some cases (Gonzalez et al., 2008). DPS also gain a high level of acceptance (Gfrerer, et al., 2005; Radet for Storre Faerdsselsikkerhed, 2005; Gonzalez et al., 2008, Ruiz, Gonzales & Gil, 2009) and thus, lead to a deterrent effect that a lot of publications point out (Broughton, 2008; Corbett, Delmonte, Quimby et al., 2008; Basili & Nicita, 2005; Vlakveld & Stipdonk, 2009). The deterrent impact increases compliance, once a given threshold of accumulated offences has been reached (Nallet, 2010; Mäkinen, Zaidel, Andersson et al., 2003; Schade, 2006).

To sum up, a lot of studies report positive effects of DPS (together with the related publicity and enforcement), but only for a limited time period. The BestPoint project results are supported by a meta-analysis by Castillo-Manzano & Castro-Nuno (2012). It was published after the data collection and analysis of the BestPoint project was finished and showed that the strong initial positive impact of DPS – 15 to 20% reductions in crashes, fatalities and injuries – seems to wear off in under eighteen months. This may be related to the absence of sufficient complementary enforcement. The initial fear instilled by the possibility that drivers could 'lose their licence after just a few offences' seems to gradually fade away when the DPS disappears from the news, when friends and family stop talking about it, and when police visibility is low.

Some empirical information is also available regarding the effects of intermediate measures, especially driver improvement and rehabilitation courses for traffic offenders. However, not all studies have sufficiently taken account of potential confounding factors such as the effects of concurrent measures or the general trend over time. Comprehensive literature studies on the effectiveness of rehabilitation measures, including driver improvement courses, were already carried out within the EU ANDREA project (Bartl, Assailly, Chatenet et al., 2002) and the EU DRUID project (Klipp, Braun, Boets, et al., 2008). Hence, the BestPoint project team was able to access the results of these previous EU projects. Within the DRUID review on the effectiveness of driver rehabilitation programmes, 61 studies were identified. Recidivism studies showed an average recidivism reduction rate of 45.5% (36 studies and 2 reviews), although a large variation of recidivism reduction rates was observed (15% - 71%). In addition, the studied interventions received positive participant feedback and, generally, led to individual changes (such as enhanced knowledge and positive attitude). However, some methodological limitations of the studies were commonly recognized, e.g. lack of control groups and randomized case-control study designs, self-selection bias, lack of control of other intervening variables and varying time periods. Overviews of the DRUID results are presented in Appendix A and B.

Considering the good results of evaluation studies, it can be concluded that rehabilitation approaches are the method of choice to reduce recidivism. However, it needs to be mentioned that all studies summarised in DRUID referred to programmes for drink or drug driving offenders. The direct transferability of the effectiveness to programmes for habitual traffic offenders may be limited. Nevertheless, studies concerning general traffic offender programmes also present promising findings. Delhomme, Kreel & Ragot (2008) tested the effect of commitment to comply with traffic regulations by phone interviews repeatedly four times, approximately 12 days, 45 days, 3.5 months and 5.5 months after participation in a French point recovery course. Results showed a

positive effect of commitment on self-reported speed limits at the short term and for more than 5 months after the courses. Additionally, the so-called “Speed Awareness Courses” in the U.K. resulted in significant attitude changes and decreases in self-reported speeding (Meadows, 2002; Fylan, 2011). Zentgraf & Seidl (2009) found more than half of the participants (57,2 %) of a course for the restoration of the fitness to drive after licence withdrawal due to the accumulation of too many points, not being registered with either multiple minor offences or one heavy offence in the three years after participation. Hence, one may conclude a good chance for traffic offenders to rehabilitate through programme participation.

For several research questions though, there was much less or no scientific information available. For example, the questions concerning the most optimal relationship between offences and point allocation, the best type of monitoring of the system and non-safety outcomes of points systems have not yet been the subject of repeated and systematic research investigation.

At the moment, 21 of 27 EU countries have implemented some type of DPS. Thereby, some DPS seem to be similar regarding several features, e.g. in France and in Spain (all drivers start with a credit of 12 points, points are deducted by detected offences, voluntary participation in a course leads to additional points, withdrawal when all points are lost for a period of six months), others seem to be completely different, e.g. Austria (offence = one point, points are added, participation in a course is mandatory, withdrawal period lasts 3 months). Still other countries, notable Malta and the Netherlands, apply a DPS for novice drivers only. Hence, it can be stated that none of the DPS implemented in the EU are the same (for details see Klipp, Eichel, Billard et al., 2011).

Yet, based on the analyses of all information available, the following recommendations (van Schagen & Machata, 2012) can be made in order to improve the safety impact of DPS in general.

Offences and demerit points

Concerning offences, it seems reasonable to include those offences that have a straightforward relationship with crashes or crash severity. When deciding on the offences to include, a balance should be found between defining a list that is comprehensive in terms of risk factors and the complexity of administration. As a minimum, a DPS list of offences should include the following:

- 1) Speeding (exceeding the legal speed limit)
- 2) Driving under the influence of alcohol and/or drugs
- 3) Violation of rules on seatbelt wearing, helmet wearing (powered two-wheelers), and proper use of child restraints
- 4) Red light running
- 5) Violation of priority rules
- 6) Dangerous overtaking
- 7) Violating rules on minimum headway between vehicles
- 8) Endangering pedestrians at zebra crossings
- 9) Illegal use of mobile phones or other communication devices
- 10) Disobeying rules for road users at railway level crossings
- 11) Wrong way driving (on dual carriageway roads) and use of forbidden lanes
- 12) Hit and run – and other dangerous post-accident misbehaviour

There is common understanding among experts that it is reasonable to link the number of points for an offence to its role in contributing to crashes. This supports the demonstration of the seriousness of one offence in contrast to a less severe offence to road users. However, when different offences lead to a different number of points, the calculation of points can lead to high administrative burden (for details see Klipp, 2012; as example, in Germany, the government plans to change the one-to-seven point system into a one-or-two point system in order to relieve administration). The other

option, as applied in some countries (e.g. Austria, Denmark and Finland), is to simply count the number of offences. This could reduce the administrative burden and may even be more effective as research has shown that the amount of offences is a better predictor for accident risk than the amount of points (Diamantopoulou, Cameron, Dyte et al., 1997; Schade, 2005). In any case, the typical recording period of offences, respectively 'lifetime' of points should not go below one year.

Road user groups

The target group of DPS are holders of driving licences. For differentiation of different road users it is recommended to apply special conditions for novice drivers, e.g. by lowering the threshold for intermediate measures. Given their specific responsibility in traffic, it is recommended to adjust DPS regimes for the group of professional drivers by including particular relevant offences, notably violations of the rules on driving and resting times, tachograph manipulations, poor technical conditions of the vehicle, and cargo securing deficiencies. Despite their usually high exposure, professional drivers should not be given advantages in terms of shorter lifetime of points or a shorter disqualification period. "Repeat recidivists" should be subject to rehabilitation programmes or psychological diagnostics, as approved in several European countries.

Enforcement levels and methods

Moderate to high levels of enforcement are needed to make a DPS work. Thereby, automatic camera enforcement and random evidential breath testing are indispensable methods for achieving sufficiently high levels of enforcement. In the case of camera-detected offences, the points should be assigned to the actual driver rather than to the vehicle owner. This can be realised by the mandatory nomination of the driver by the owner, or by taking a picture of the driver at the spot. If the driver remains unidentified, points should be assigned to the vehicle owner. Communication about enforcement needs to be maintained regularly, both on local and national levels, and should provide information on rule compliance in addition to rule violation in order to promote the social norm.

Intermediate and rehabilitation measures

Overall, it is recommended to take a four-step approach to applying intermediate and rehabilitation measures:

1. Information letters each time a driver loses or gains points, and a warning letter when approaching the threshold for a driver improvement course.
2. A mandatory driver improvement course, at least one severe offence away from the initial value and more than one severe offence away from licence withdrawal value, focusing on attitudes and behaviour rather than on knowledge and skills.
3. Licence withdrawal for a period of between 3 and 12 months.
4. Mandatory participation in a rehabilitation course for reinstatement of the licence. The course should focus on attitudes and behaviour rather than on knowledge and skills; for offenders with a potential alcohol/drugs problem or a personality disorder, a medical-psychological examination and longer term behavioural or psychological assistance or monitoring should be included.

In order to increase the potential effect of driver improvement and rehabilitation courses, specific attention should be paid to the curriculum, the organisational aspects of the course and the skills of the course leader.

Organising, administering and monitoring DPS

A DPS requires well-oiled organisational and administrative machinery to efficiently process the

assigned points of millions of drivers and to initiate the appropriate and timely follow-ups in terms of intermediate and rehabilitation measures. In general, the system should be kept simple and have a good balance between the desire to, for example, include many offences or differentiate the number of points based on the seriousness of the offence and the manageability of administering and organising the system. A central register in which all information about each offender comes together is necessary to identify repeat offenders and to calculate the actual points' status. If more than one organisation is involved in the administration, a duplication of work should be avoided. The use of a central register which triggers action of local authorities only when needed is seen to be very efficient. Administrative processes should be computerised as much as possible, e.g. for transferring offence information, calculating points' status and thresholds for follow-up actions, and for sending personalised information and warning letters. The offender should be informed that they have incurred a demerit point shortly after the incident has happened to increase the corrective effect. The offender should have easy access to his points' status to be well informed, to make the DPS transparent and hence, ensure the preventive effect of the DPS. Ideally, the information request should be dealt with in an automatic procedure, e.g. looking up the points' status via internet.

Future perspectives: towards an EU-wide DPS?

An increasing number of European countries have bilateral or multilateral agreements to exchange information about traffic offences committed in a country other than the home country and for imposing and collecting fines. However, offences committed abroad do not generally affect the status of the DPS in the home country. Hence, substantial safety gains can be expected from an EU-wide cross-border information exchange on points and/or offences. In addition, given the large and still increasing amount of cross-border traffic, the current practice can be seen as unfair and a form of inequality of justice between EU citizens. Because of different legal situations in the EU Member States – different kinds of offences, different types of DPS and countries without a DPS, it is best to have a gradual approach in working towards an EU-wide DPS. Five steps were identified, with the last step, one single and binding DPS at EU level, as a long-term scenario:

1. The authorities of the country of the offence pass on the information on (certain) offences to the driver's country of residence.
2. The European Commission recommends that all countries adopt a DPS, referring to the outcomes of BestPoint for guidelines for the implementation of a maximally effective DPS.
3. National authorities create a virtual national driving licence for every non-resident offender stopped for the first time, based on the experiences such as in the UK, Germany, Italy, the Czech Republic and Luxembourg.
4. Every country has a DPS that includes at least a minimum list of offences, but each Member States can decide the number of points per offence. A conversion table allows for points exchange between countries.
5. As a long-term scenario, there will be one single and binding DPS at EU level, including intermediate and rehabilitation measures, for all Member States.

Discussion

The European DPSs are very different, and there is yet no harmonisation or connection between the different European DPSs. The EU BestPoint project provides for the initial steps towards a cross-country European DPS. That this should work is supported by transcontinental experiences from Australia where the road authorities share information about interstate offences. If an offence is committed in another territory, points will be assessed in accordance to the licence holder's home province's law and registered on the driver's record. This assures a fair treatment of resident drivers and drivers from abroad. In addition, it supports the deterrent effects of DPS throughout the country.

Concerning the BestPoint recommendations, it can be stated that Australian jurisdictions already have sophisticated DPS schemes. This may be due to the long tradition of DPS in Australia, where the first DPS was already implemented in 1970. Compared to that, most of the European DPS are in their infancies. Some EU countries do not even have a DPS implemented. For these countries the BestPoint handbook may probably be of greater value. The Australian jurisdictions already meet most of the recommendations of BestPoint, e.g. having the majority of the recommended offences included in their DPS or treating novice drivers more severe, which is common practice in Australia.

One striking issue is that none of the Australian territories applies any kind of driver rehabilitation for “point” offenders, although they made good experiences with the rehabilitation of drink drivers (Sheehan, Watson, Schonfeld et al., 2005). Instead, the Australian DPS fully bank on structural interventions, such as the “double or nothing” option. This forces offenders to comply with the traffic rules in a good behaviour period of several months. Failing this would lead to the doubled suspension period. It possibly may lead to further improvement of the Australian DPS when these structural interventions are combined with individual interventions such as driver rehabilitation programmes. The positive experiences with rehabilitation programmes for general traffic offenders from abroad may support at least the discussion about an introduction of these measures in Australia. Vice versa, European decision makers may consider the introduction of structural interventions in order to increase the overall safety effects of DPS.

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Appendix A: Overview of DRUID results / recidivism studies in- and outside Europe (according to Klipp et al., 2008)

Country	Authors	Recidivism		
		Recidivism rate (%)		Reduction of recidivism (%)
		Study group	Control group	
Rehabilitation programmes comprised in ANDREA (inside and outside Europe)				
Austria	Michalke et al., 1987	15.5	30.6	48.4*
		12.5	30.6	59.2*
		10.3	30.6	66.3*
Austria	Schützenhöfer & Krainz, 1999	22.7	40.4	43.8*
Germany	Winkler et al., 1988	13.5	17.7**	Incalculable
		12.8	18.6**	
		14.0	18.3**	
Germany	Winkler et al., 1990	19.6	25.7**	Incalculable
		20.5	24.6**	
		22.9	26.3**	
Germany	Jacobshagen, 1997	14.4	31.6*	54.4
Switzerland	Mahey et al., 1997	19.7	19.7*	No difference
United Kingdom	Davies et. al., 1999	3.4	9.6*	54.0 corr.^
U.S.A.	Jones et al., 1997	5.6	10.7*	47.7
Rehabilitation programmes not yet comprised in ANDREA (inside Europe)				
Belgium	Vanlaar et al., 2003	[93.3]	[100.0]*	Incalculable
Germany	Jacobshagen, 1996	30.4	36.9**	17.6
Germany	Höcher, 1999	6.4	None	Incalculable
Germany	Jacobshagen, 2001	4.8	6.5**	Incalculable
		6.8	8.3**	Incalculable
Germany	Graumann, 2002	2.7	None	Incalculable
		2.3	None	Incalculable
		4.8	None	Incalculable
Germany	Birnbaum et al., 2002	12.6	17.4*	27.6
Germany	Scheucher et al., 2002	9.1	None	Incalculable
Germany	Biehl & Birnbaum, 2004	8.8	21.1	58.2*
Germany	Birnbaum et al., 2005	3.7	13.2*	71.9
Germany	Schülken et al., 2006	5.3	None	Incalculable
		2.6	None	Incalculable
United Kingdom	Davies & Smith, 2003	7.6	17.9*	57.5
United Kingdom	Smith et al., 2004	1.4	3.7*	62.1
United Kingdom	Inwood et al., 2007	3.9	4.8*	18.7
Switzerland	Bächli-Bietry, 2006	11.0	13.0*	15.4
		11.0	18.0*	39.0
Switzerland	Michiels et al., 2007	11.7	13.3*	12,0
Rehabilitation programmes not yet comprised in ANDREA (outside Europe)				
USA	Applegate & Langworthy, 1997	[90.8]	[100.0]*	Incalculable
		[95.2]	[100.0]*	Incalculable
USA	Jones & Lacey, 1998	5.6	10.6*	47.2
		4.3	6.1*	29.6
USA	Breckenridge & Winfree, 2000	No numb.	No numb.*	ns difference
USA	Pratt & Holsinger, 2000	[70.0]	[100.0]*	Incalculable
		[90.0]	[100.0]*	Incalculable
		[86.0]	[100.0]*	Incalculable
USA	C'de Baca et al., 2000	No numb.	No numb.*	ns difference
USA	Woodall & Kunitz, 2004	No numb.	No numb.*	Partly sign.
USA	Wheeler & Rogers, 2004	No numb.	No numb.*	ns difference
USA	Schermer & Moyers, 2006	11.0	22.0*	50,0
USA	Lapham et al., 2006	[0.52]	[1.00]*	Incalculable
USA	Macdonald & Morall, 2007	No numb.	No numb.*	little difference
Australia	Taxman & Piquero, 1998	n.a.	n.a.	
Reviews on rehabilitation programmes				
USA	Wells-Parker et al., 1995	7 – 9% reduction compared to criminal justice		

		measures (fines, licence suspension, etc.)
USA	De Young, 1995	Rehabilitation measures more effective than licence solely withdrawal

*) Control group = non participants; **) only baseline group; ns = not significant; ^) corr. = reduction after correction according to Bart et al., 2002; [] = calculated risk relation; n.a. = not applicable

Appendix B: Overview of DRUID results / non-recidivism effectiveness criteria in- and outside Europe (according to Klipp et al., 2008)

Country	Authors	Effectiveness criteria
Rehabilitation programmes comprised in ANDREA (inside Europe)		
Austria	Posch, 2000	Increased knowledge, more sensitive regarding alcohol impairment, less external attribution*
Germany	Winkler et al., 1990	Increased knowledge*
Germany	Jacobshagen, 1997	Increased knowledge, less alcohol consumption*
United Kingdom	Davies et. al., 1999	Increased knowledge, more sensitive regarding alcohol impairment*
Austria, Belgium, Italy, Netherlands	Bartl et al., 2002	Positive participant feedback, personal benefit*
Rehabilitation programmes not yet comprised in ANDREA (inside Europe)		
Austria	Christ, 2001	Development of positive future perspectives, more favourable attitudes*
Austria	Schickhofer, 2003	Increased knowledge, more realistic self evaluation, pro lower BAC limits*
Austria	Drexler, 2005	Increased knowledge on alcohol specific impairment, safety risks, health consequences of problematic alcohol consumption – ns**
Germany	Biehl & Birnbaum, 2004	– 50% other offences and convictions**
Germany	Scheucher et al., 2002	Stabilised decision regarding less alcohol consumption
Germany	Schülken et al., 2006	Increase in positive coping strategies and problem awareness*
Germany	Klipp et al., 2007	Sign. changes in denial of problem, cognitive engagement, initiation of behavioural changes**
Germany	Andren et al., 2002	Significant interaction with client type regard. alcohol & drug use*
Switzerland	Bächli-Bietry, 2003	Development of strategies to separate alcohol & driving*
United Kingdom	Inwood et al., 2007	Increased knowledge, safer attitudes towards drink. & driving, greater perceived behaviour. control*
Rehabilitation programmes not yet comprised in ANDREA (outside Europe)		
Australia	Ferguson et al., 2001	Change of intention to avoid DUI offences, decrease in self-reported drunk-driving, posit. effect on change motivation Knowledge improvement – ns**
Australia	Sheehan et al., 2005	Positive feedback of participants & positive external evaluation*
USA	Wells-Parker et al., 2000	Effects on motivation to change processes*
USA	Rider & Kelley-Baker, 2006	Increased readiness to change – ns**
USA	Dill et al., 2004	Less alcohol consumption & drunk driving – ns**
USA	Polacsek & Rogers, 2001	Short term effect concerning the readiness to chnge, no long term effect**
USA	Wheeler & Rogers, 2004	Decrease in alcohol consumption and drink. & driving – ns**
USA	Macdonald et al., 2004	Decrease in impulsivity, risk-taking, sleep problems, less violations**
USA	Macdonald & Morral, 2007	Benefit regarding self-reported drunk-driving, alcohol use, coping with stressful life events**
USA	Nochajski & Stasiewicz, 2007	Significant interaction with client type (depressed) regarding treatment success*

*) pre-post design without control group; **) pre-post design with study and control group comparison; ns = not significant