

A brief summary of research on screening for Alcohol Use Disorders.

The use of alcohol is common in most societies and there are varying accounts of benefits as well as harm associated with its use. However, the excessive use of alcohol has always been linked to increased harm, such as increased likelihoods of violence and injuries, and an increased risk of mortality¹. Excessive use of alcohol is one of the most prevalent (and modifiable) risk factors for deaths and disability for young people internationally² and in New Zealand³. There is international consensus recommending proactive early intervention⁴.

The New Zealand Government's Drivers of Crime Research found that harmful alcohol use in 2005/06 cost New Zealand an estimated \$4,794 million¹ of diverted resources and lost welfare⁵. Excessive use of alcohol is a major contributor to offending with direct costs to Police of \$306m pa (and \$674m pa for ACC)⁶. It is also a contributing factor in family, and other, violent offending⁷ and reoffending^{8,9}, and accounts for a significant proportion of health costs, especially for youth and young adults.

In the last 30 years screening in the health sector has emerged as a means of identifying groups of people who are at risk of an adverse health outcome and facilitating their access to services to reduce this risk. The most widely implemented example of screening is breast screening for women.

Screening for health disorders involves asking a person a series of questions (as few as possible) with the first key task aiming to screen out people that **do not** have the particular health disorder. People remaining after that are asked further questions to find out if they **do** indeed have the disorder, and if so at what severity. It is also possible during this round of questions to eliminate any 'false positive screens' by establishing that someone **does not** have the disorder. It is important to note that some people who have a disorder will not be identified during this process, as the questions are not exhaustive and those being screened may minimize the information they disclose (called 'false negative screens').

If a person is found to be likely to have a disorder, then there are a range of treatments that may be offered. Screening is itself an initial treatment as the person is made aware that their drinking is not normal and is likely to have adverse outcomes on their health and wellbeing. Often screening follows a protocol aimed at increasing the motivation of the person to change their drinking behaviours. The most detailed protocols may include follow up by text messages or phone call and a referral being made for further assessment and treatment. Screening that includes most or all of these is called Screening, Brief Intervention and Referral for Treatment (SBIRT). When there is no process for making a Referral for Treatment it is called Screening and Brief intervention (SBI) and this is mostly confined to actions that only take place in the setting where the person is screened (i.e. with no follow-up such as text or phone contact or making a referral). The first published study included follow-up by a social worker^{10,11}.

Screening for AUDs has been recommended by WHO in 2001 as an effective means of providing brief treatments as well as encouraging early access to more substantive treatments¹². Since then there have been influential reports of it being effective in primary health services¹³ (General Practice), and resulting in it being recommended by the New Zealand Ministry of Health for primary care.

¹ The same report identifies an additional \$6,881m for costs of drugs other than alcohol

There are however groups who are at the highest risk of AUDs who do not access General Practice – especially young males and those from lower socioeconomic groups. Screening therefore needs to be carried out in other settings where these groups are more likely to be contacted. Integration of screening with a range of health and welfare agencies is consistent with the Ministry of Health's strategy¹⁴. This is an opportunity for use of emerging technologies that offer smart ways to identify people with health disorders early and to help them access treatment¹⁵⁻¹⁷.

Screening for people with alcohol disorders in Emergency Departments has been driven by research showing the high proportion of the people accessing these services whose injuries are attributed to their consumption of alcohol. A recent study of 37 EDs (in 18 countries) showed that 16% of the injuries were attributable to the use of alcohol (20% for males and 9% for females), of which 44% were associated with assaults (compared to 14% for falls and 11% for road traffic accidents)¹.

Processes to identify people with Alcohol Disorders through Screening, provide them with a Brief Intervention and make a Referral to a Treatment Service (SBIRT) were first developed in 1958¹⁰. Such screening has proven to be so cost-effective¹⁸⁻²⁰ that it has become official policy that all US Hospital EDs have SBIRT as a condition of their accreditation²¹. Screening is also promoted by the World Health Organization²² and is advocated for alcohol abuse at the 'hazardous' and 'harmful' levels (less severe than being Dependent on Alcohol) to reduce the subsequent physical and mental harm^{23,24}. There is ongoing research to determine the efficacy of the individual components of SBIRT and how it is best implemented. So far the results are mixed but positive overall^{25,26}. However, there has been a recent study of screening Maori tertiary students in New Zealand that has shown positive outcomes using SBI¹⁵ and a similar study amongst Australian university students²⁷. These studies support screening amongst groups of people that are least likely to visit a primary health service.

There are relatively very few studies of screening in police custody. Most studies are from Europe and report on the work of full time police medical staff who have a legislative role in assessing people's fitness to be detained²⁸⁻³¹. There is one study in Northern England that is very similar to this work (Detention Officers screening detainees and offering a Brief Intervention (BI))³². We have not identified any studies that have investigated the outcomes of screening this offender population, although there is one review paper reporting on the effectiveness of a BI for people who have had drink-driving offences (a meta-analysis of 12 studies and citing two other reviews of a further 51 studies)³³. This review reports a modest, statistically significant, decrease in both repeat drink-driving convictions and in the participants drinking less alcohol.

The use of screening is not confined to AUDs and this methodology can be applied to anything where there is a questionnaire that has proven reliability and validity. Screening for depressive disorders is common both singularly and for those who may have both an AUD and a concurrent Depressive Disorder.

In conclusion, this is but a very brief summary of the well supported practice of using screening methodologies to identify people who have an AUD and to persuade them to take actions that will alleviate this. Screening as an approach to identifying people who have health disorders (including AUDs) is a significant part of a health strategy, especially to get early identification and access to treatment amongst younger people with developing disorders and those who do not access mainstream health services.

References

1. Cherpitel CJ, Ye Y, Bond J, et al. Alcohol attributable fraction for injury morbidity from the dose-response relationship of acute alcohol consumption: emergency department data from 18 countries. *Addiction*. 2015;110(11):1724-1732. doi:10.1111/add.13031.
2. Mokdad AH, Forouzanfar MH, Daoud F, et al. Global burden of diseases, injuries, and risk factors for young people's health during 1990–2013: a systematic analysis for the Global Burden of Disease Study 2013. *Lancet*. 2016;6736(16):1-19. doi:10.1016/S0140-6736(16)00648-6.
3. Tobias M, Turley M. *Health Loss in New Zealand A Report from the New Zealand Burden of Diseases , Injuries*. Wellington, New Zealand; 2013. <http://www.health.govt.nz/publication/health-loss-new-zealand-report-new-zealand-burden-diseases-injuries-and-risk-factors-study-2006-2016>.
4. Stockings E, Hall WD, Lynskey M, et al. Prevention, early intervention, harm reduction, and treatment of substance use in young people. *The Lancet Psychiatry*. 2016;3(March). doi:10.1016/S2215-0366(16)00002-X.
5. Slack A, Nana G, Webster M, Stokes F, Wu J. *Costs of Harmful Alcohol and Other Drug Use*. Wellington, New Zealand; 2009. http://www.justice.govt.nz/justice-sector/drivers-of-crime/documents/BERL_July_2009_-_Costs_of_Harmful_Alcohol_and_Other_Drug_Use-1.pdf.
6. Proffitt C, Beacham M, O'Dea D. *New Zealand Injury Prevention Outcomes Report - June 2012*. Wellington, New Zealand; 2012.
7. Descallar J, Muscatello DJ, Weatherburn D, Chu M, Moffatt S. The association between the incidence of emergency department attendances for alcohol problems and assault incidents attended by police in New SouthWales, Australia, 2003–2008: a time–series analysis. *Addiction*. 2011;107:549-556. doi:10.1111/j.1360-0443.2011.03623.x.
8. Lukkien CC, Johnston PW. An evidence-base for reducing re-offending. *Pract New Zeal Correct J*. 2013;1(1):3-8.
9. Willey H, Eastwood B, Gee IL, Marsden J. Is treatment for alcohol use disorder associated with reductions in criminal offending? A national data linkage cohort study in England. *Drug Alcohol Depend*. 2016;161:67-76. doi:10.1016/j.drugalcdep.2016.01.020.
10. Chafetz M, Blane HT, Abram H, et al. Establishing treatment relations with alcoholics. *J Nerv Ment Dis*. 1962;134(5):395-409.
11. Chafetz M, Blane HT, Abram H, et al. Establishing treatment relations with alcoholics: a supplementary report. *J Nerv Ment Dis*. 1962;134(5):390-393.
12. T. Babor, J. C. Higgins-Biddle, J. B. Saunders MGM. The Alcohol Use Disorders Identification Test: Guidelines for use in primary care. *Geneva World Heal Organ*. 2001:1-40. <http://scholar.google.com/scholar?hl=en&btnG=Search&q=intitle:The+Alcohol+Use+Disorders+Identification+Test:+Guidelines+for+Use+in+Primary+Care#9>.
13. Kaner E, Beyer F, Dickinson H, Etal. *Effectiveness of Brief Alcohol Interventions in Primary Care Populations.*; 2007.
14. Minister of Health. *New Zealand Health Strategy: Future Direction*. Wellington, New Zealand; 2016. <http://www.health.govt.nz/system/files/documents/publications/new-zealand-health-strategy-futuredirection-2016-apr16.pdf>.
15. Kypri K, McCambridge J, Vater T, et al. Web-based alcohol intervention for Māori university students: double-blind, multi-site randomized controlled trial. *Addiction*. 2013;108(2):331-338. doi:10.1111/j.1360-0443.2012.04067.x.
16. Riper H, Blankers M, Hadiwijaya H, et al. Effectiveness of guided and

- unguided low-intensity internet interventions for adult alcohol misuse: A meta-analysis. *PLoS One*. 2014;9(6). doi:10.1371/journal.pone.0099912.
17. Cunningham JA, Kypri K, McCambridge J. The use of emerging technologies in alcohol treatment. *Alcohol Res Health*. 2011;33(4):320-326. <http://www.pubmedcentral.nih.gov/articlerender.fcgi?artid=3860543&tool=pmc-entrez&rendertype=abstract>.
 18. Fleming MF, Graham AW. Screening and brief interventions for alcohol use disorders in managed care settings. In: Galanter M, ed. *Recent Developments in Alcoholism, Vol 15: Services Research in the Era of Managed Care*. New York: Kluwer Academic/Plenum Publishers; 2001:393–416.
 19. Kraemer KL. The cost-effectiveness and cost-benefit of screening and brief intervention for unhealthy alcohol use in medical settings. *Subst Abus*. 2007;28(3):67-77.
 20. Maciosek M, Coffield A, Edwards N, Goodman M, Flottesmesch T, Solberg L. Priorities among effective clinical preventive services: Results of a systematic review and analysis. *Am J Prev Med*. 2006;31(1):52-61.
 21. Cunningham, Rebecca M Harrison SR, McKay MP, Mello MJ, et al. National Survey of Emergency Department Alcohol Screening and Intervention Practices. *Ann Emerg Med*. 2010;55(6):556-561. http://ntserver1.wsulibs.wsu.edu:2226/S0196064410002210/1-s2.0-S0196064410002210-main.pdf?_tid=72749ea4-fd7a-11e3-a7c6-00000aacb35d&acdnat=1403818990_c91f3efa6672f27d4219b290092e15e5.
 22. Babor TF, Mcree BG, Kassebaum PA, Grimaldi PL, Ahmed K. Screening , Brief Intervention , and Referral to Treatment (SBIRT): Toward a Public Health Approach to the Management of Substance Abuse. *Subst Abus*. 2007;7077(FEBRUARY 2007):7-30. doi:10.1300/J465v28n03.
 23. Charlet K, Heinz A. Harm reduction - a systematic review on effects of alcohol reduction on physical and mental symptoms. *Addict Biol*. 2016;(Epub ahead of print):1-41. doi:10.1111/adb.12414.
 24. Schuckit MA. Alcohol-use disorders. *Lancet*. 2009;373(9662):492-501. doi:10.1016/S0140-6736(09)60009-X.
 25. Landy MSH, Davey CJ, Quintero D, Pecora A, McShane KE. A Systematic Review on the Effectiveness of Brief Interventions for Alcohol Misuse among Adults in Emergency Departments. *J Subst Abuse Treat*. 2016;61:1-12. doi:10.1016/j.jsat.2015.08.004.
 26. Barbosa C, Cowell AJ, Landwehr J, Dowd W, Bray JW. Cost of Screening, Brief Intervention, and Referral to Treatment in Health Care Settings. *J Subst Abuse Treat*. 2015;Article In. doi:10.1016/j.jsat.2015.06.005.
 27. Said D, Kypri K, Bowman J. Risk factors for mental disorder among university students in Australia: findings from a web-based cross-sectional survey. *Soc Psychiatry Psychiatr Epidemiol*. 2013;48(6):935-944. doi:10.1007/s00127-012-0574-x.
 28. Heide S, Stiller D, Lessig R, Lautenschläger C, Birkholz M, Früchtnicht W. Medical examination of fitness for police custody in two large German towns. *Int J Leg Med*. 2012;126:27–35.
 29. McKinnon I, Grubin D. Health screening in police custody. *J Forensic Leg Med*. 2010;17(4):209-212. doi:10.1016/j.jflm.2010.02.004.
 30. McKinnon I, Srivastava S, Kaler G, Grubin D. Screening for psychiatric morbidity in police custody: results from the HELP-PC project. *Psychiatrist*. 2013;37(12):389-394. doi:10.1192/pb.bp.112.041608.
 31. Lepresle A, Mahindhoratep TS, Chiadmi F, Schlatter J, Boraud C, Chariot P. Police custody following drink-driving: a prospective study. *Drug Alcohol Depend*. 2012;126:51-54.
 32. Brown N, Newbury-Birch D, MCGovern R, Phinn E, Kaner E. Alcohol screening and brief intervention in a policing context: A mixed methods feasibility study.

- Drug Alcohol Rev.* 2010;29(6):647-654. doi:10.1111/j.1465-3362.2010.00223.x.
33. Steinka-Fry KT, Tanner-Smith EE, Hennessy EA. Effects of brief alcohol interventions on drink driving among youth: a systematic review and meta-analysis. *J Addict Prev.* 2015;3(1):1-14. www.avensonline.org/wp-content/uploads/JEMCC-2469-4045-02-0006.pdf.