# Prevention of Alcohol-related Crime and Trauma (PACT): brief interventions in routine care pathway – A study protocol

Dr. Rama Jayaraj[1], Megan Whitty[2], Dr. Mahiban Thomas[3], Professor David Kavangh[4], Dr. Didier Palmer[5], Valerie Thomson[2], Carolyn Griffin[2], Luke Mayo[2], Professor Peter D'Abbs[2], Associate Professor Tricia Nagel*[2]

[1]Wellbeing and Preventable Chronic Diseases Division, Menzies School of Health Research and School of Environmental and Life Sciences and Charles Darwin University. Darwin, Northern Territory, Australia.

[2]Wellbeing and Preventable Chronic Diseases Division, Menzies School of Health Research, Darwin, Northern Territory, Australia.

[3]Department of Head and Neck Surgery, Royal Darwin Hospital, Darwin, Northern Territory, Australia.

[4]Clinical Psychology, Department of Psychiatry University of Queensland, Brisbane, Australia

[5]Emergency Department, Royal Darwin Hospital, Darwin, Northern Territory, Australia.

Emails: Rama Jayaraj - Rama.Jayaraj@menzies.edu.au; Megan Whitty - Megan.Whitty@menzies.edu.au; Mahiban Thomas - Mahiban.Thomas@nt.gov.au; David Kavangh - d.kavanagh@uq.edu.au; Didier Palmer - Didier.Palmer@nt.gov.au; Valerie Thomson - Valerie.Thompson@menzies.edu.au; Carolyn Griffin - Carolyn.Griffin@menzies.edu.au; Luke Mayo - Luke.Mayo@menzies.edu.au; Peter d Abbs - Peter.d'Abbs@menzies.edu.au; Tricia Nagel - Tricia.Nagel@menzies.edu.au

**Abstract**

**Background:**

Globally, alcohol-related injuries cause millions of death and economic loss each year [1]. Alcohol is considered as a major risk factor of injuries. It has a great impact not only injury, but also deaths and criminal behaviour internationally. Northern Territory (NT) has relatively small population in far northern Australia. Indigenous people in rural and rural remote communities are at risk of alcohol-related injury, incarceration and death. The incidence of facial (jawbone) fractures in the Northern Territory in Australia is second only to Greenland, due to a strong involvement of alcohol in the aetiology of facial trauma [2]. The highest incidences of alcohol-related trauma are often observed amongst the patients cared for by the Maxillofacial Surgery Unit of the Royal Darwin Hospital, Darwin, Northern Territory [3]. Accordingly, this project aims to introduce screening and brief interventions that would change health service provider practice and improve access to care and outcomes for high-risk drinkers and those with wellbeing concerns admitted for facial trauma at Royal Darwin Hospital.

**Methods:**

**Establishment of Project Governance:** The broader Prevention of Alcohol Related Crime and Trauma (PACT) project governance is established to provide guidance and input. This team includes a project manager, project leader, an Indigenous Reference Group (IRG) and an Expert Reference Group (ERG).

**Development of best practice pathway:** PACT project researchers collaborate with clinical staff to develop a best practice pathway suited to the setting of the surgical unit. The pathway provides clear guidelines for screening, assessment, intervention and referral.

**Implementation of best practice pathway:** The developed best practice pathway is introduced to the unit through staff training workshops and associate resources and adapted in response to staff feedback.

**Evaluation of the best practice pathway process:** The activities of the development and implementation of the best practice pathway process are evaluated through file audits, post workshop questionnaires and semi-structured interviews.

**Discussion:**

This project will potentially result in significant benefits for high-risk drinkers with facial trauma. This project allows direct transfer of research findings into clinical practice and can inform future hospital-based injury prevention strategies.

**Keywords:**

Alcohol-related trauma

Screening and brief intervention for facial trauma patients

Implementation of best practice

## Background

Globally, half of alcohol-attributable deaths are a result of injury [4]. Alcohol-related injuries are predominantly an issue created by the considerable number of moderate drinkers who often drink to intoxication, as opposed to alcohol-dependent drinkers. Strong links exist between alcohol-related trauma, crime and binge drinking [5]. The most recent national survey of drug use estimates that one in five Australians drink at a level that puts them at risk of short-term harm at least once a month [6]. Alcohol-related harm is a major cause of mortality and morbidity in Australia, causing around 3,000 deaths and

65,000 hospitalisations every year [7]. Indigenous Australians are six times more likely than non-Indigenous Australians to drink at high-risk levels [8]. The harms associated with high-risk alcohol consumption in Indigenous Australians include family conflict, domestic violence and assaults [9, 10]. Alcohol is the leading cause of injury among Indigenous Australians, followed by intimate partner violence[11]. Chikritzhs et al. (2000) have shown that the rates of death from exclusively alcohol-related conditions are almost eight times greater for Australian Indigenous males than for non-Indigenous males and 16 times greater for Indigenous females than for non-Indigenous females among residents of Western Australia, South Australia and the Northern Territory [12]. The percentage of alcohol-related deaths among young Indigenous Australians aged 15-24 has also been estimated to be almost three times higher than for their non-Indigenous counterparts [12].

Binge drinking in the Northern Territory (NT), Australia is a major risk factor for hospital admission with alcohol-related injury [8, 13, 14]. Alcohol-related violence was the most common cause of hospital admission for injury in the NT [15], accounting for 38% of the total injury admissions for Indigenous people. Further, it has been reported that most of the assaults against women in remote NT communities are perpetrated by a drunken husband or other family member. Alcohol-related facial trauma is common, with an estimated 350 cases per year admitted to the Maxillofacial Surgery Unit of the Royal Darwin Hospital (RDH), Darwin, Northern Territory [2].

In the general population, screening and brief counselling can reduce high-risk alcohol consumption and alcohol-related assaults associated with binge drinking, but more research is needed on alcohol-related trauma among Indigenous people. Therefore, there is an urgent need to develop effective strategies to address binge drinking and alcohol-related harm among at-risk youth and adults in the Territory. The ‘motivational care planning’ (MCP) intervention showed good engagement and acceptability [16] and significant improvements in wellbeing, substance dependence and self-management [16, 17]. Accordingly, this project will target remote and urban Indigenous people who are presently at high-risk of crime linked with alcohol use as shown by the high rates of alcohol-related assaults and facial injuries. The current research is conducted in the Maxillofacial Surgery Unit at Royal Darwin Hospital (RDH) in Northern Territory (NT).

## Methods/design

### Aim

The PACT project aims to raise awareness of at-risk drinking and prevent recurrent injury in Indigenous people of the NT.

*This project aims to answer the following question:*

Will introduction of screening and brief interventions change health service provider practice and reduce alcohol-related injuries secondary to assault?

We predict that a participatory action approach to implementing a best practice pathway to referral and treatment for high-risk alcohol users admitted to the Maxillofacial Surgical Unit with injuries will change health service provider practice and reduce alcohol-related injury.

### Research plan

This 18-month project introduces screening and brief interventions for high-risk drinkers admitted to hospital with facial trauma and evaluates the implementation of a best practice pathway. The project transfers skills and resources to hospital staff to support delivery of best practice and to evaluate progress through continuous quality improvement strategies.

**1. Establishment of Project Governance:** An Indigenous Reference Group and an Expert Reference Group oversee the project. The IRG comprises senior urban- and community-based Australian Indigenous people and is established through Menzies School of Health Research. The ERG includes senior representatives from the Maxillofacial Surgery Unit and the NT Department of Health. The research team consists of a project leader and project manager from Menzies School of Health Research, senior representatives from the Maxillofacial Surgery Unit and Indigenous researchers at Menzies. The day-to-day management of the project is the responsibility of the project leader and project manager, in collaboration with the research officers. The research team and ERG formally meet by teleconference or face-to-face every three to six months.

**2. Development of best practice pathway:** A tailored best practice pathway suited to the setting of the surgical unit is developed in collaboration with hospital staff, following exploration of current systems. The pathway includes four key activities 1) Brief screening of all admissions, 2) An information booklet for those at risk 3) Referral to appropriate services for those at risk 4) Delivery of a culturally-adapted brief intervention. Staff are trained to apply the best practice pathway to all patients.

All relevant services in Darwin are contacted via email and phone, informed of the project aims and invited to participate. Engagement of community services includes visiting the organisation, understanding specific referral processes and exploring the capacity of external services to provide in-house services for potential clients in hospital. Representatives from the various agencies present at PACT workshops to inform and educate hospital staff about available services for patients with substance abuse problems or wellbeing concerns. A pamphlet is developed containing contact information and a brief synopsis of Alcohol and Other Drugs (AOD), mental health and domestic violence services both within and outside the hospital system

**3. Implementation of best practice pathway:** Implementation is multi-faceted and includes information and consultation meetings with staff and community service providers, staff training workshops, key informant interviews, feedback sessions and the introduction of relevant resources (available online and in hard copy form). The implementation of the best practice pathway includes three key activities: 1) training to familiarise staff with the tools, 2) workshops to train staff in delivery of brief interventions, 3) a feedback workshop to review the effectiveness of implementation through training evaluations, file audits and interviews. The chosen brief intervention is based on findings of a project conducted by the Australian Integrated Mental health initiative (AIMhi) in the NT (Nagel et al., 2009).

***Information and consultation meetings with staff and community service providers***

These meetings are conducted with hospital staff and community service providers to inform the development of best practice protocols for detection and treatment of patients who demonstrate high-risk drinking. The purpose of these meetings is to improve understanding of the current strategies and practical issues surrounding implementation in the hospital setting.

***Staff training workshops***

PACT training workshops (5-6) involving up to 50 hospital-based service providers are conducted. The workshops provide information about screening, referral services and brief interventions. A post-workshop

participant evaluation questionnaire is collected and results analysed. The questionnaire incorporates ordinal scales and open-ended questions. Participants are asked about knowledge and confidence in screening, brief intervention and referral for at-risk drinkers. Knowledge and confidence are rated on a scale from 1 (not much / not confident) to 9 (a lot / very confident). Participants are also asked to rate how interesting and useful the workshop was on a scale from 1 (not at all) to 4 (very). The questionnaire includes a section for attendees to comment on their experience and state whether they would change their practice as a result of the workshop. A joint feedback workshop in the last three months of the study will report on the key findings from staff training activities and file audits over the course of the project.

***Resource development***

Brief intervention resources and a best practice protocol manual are prepared. Tools for ongoing continuous quality improvement are made available to the surgery unit.

***Feedback***

Feedback of interview responses by key informants and the results of the file audits allow opportunity for refinement of the care pathway, goal setting, further training and dissemination. Project findings will be presented at relevant conferences within Australia and results are to be published in appropriate scientific journals, particularly those that target hospital care of high-risk drinkers.

**4. Evaluation of the best practice pathway process:**

***Process evaluation***

The process activities include evaluating 1) number of workshops held and workshop content and format, staff trained, 2) number and type of staff attending workshops and 3) number and type of training and education resources developed. .

Outcome evaluation

Outcome evaluation activities include 1) file audits and 2) semi structured interviews

***File audits***

The project team conducts two file audits: one at baseline and one at 9 months, and records the number of admissions related to high-risk drinking, screenings, patients flagged to be 'at-risk', brief interventions delivered, information distributed and referrals completed. The review of files allows the project to monitor outcomes. This information is essential for review and feedback for quality improvement and development of care processes.

***Key informant interviews***

The project team conducts a small number of key informant interviews to explore client, family and service provider perspectives on the process. Five key informant interviews with surgical unit staff assess confidence and knowledge as well as challenges and enablers to screening and best practice. Five key informant interviews with patients and families explore their experience of the best practice pathway.

**Analysis**

***Participant's selection criteria and level of involvement***

There are two target populations:

1. Clients admitted to Royal Darwin Hospital with facial trauma during the study 2. Service providers who care for clients admitted to the maxillofacial surgical unit

We will not interview participants who are under the age of 18 or unable to give informed consent.

***Statistical analysis***

Analysis of file audits and interviews will include descriptive statistics and qualitative data grouped and analysed by theme.

***Sample size:***

There are two samples: files to be audited and individuals to be interviewed.

1. The files to be audited will include a sample of trauma patients admitted to the Maxillofacial Surgery Unit during the six months prior to commencement of the study and the 9 months of the study from baseline (estimated 160 files). Files are examined for frequency of screening, recorded evidence of brief interventions given for those at risk and documentation of uptake of the new pathway. They will also be examined for client outcomes in terms of wellbeing, alcohol-related medical problems and high-risk drinking.

2. A small sample of client participants and service providers will be interviewed to assess establishment of the new pathway within routine care. We will purposely sample five clients and five service providers to explore enablers and challenges and the client experience. We have chosen this sample size in order to be able to gain some insight into these client and service provider perspectives whilst keeping within the resources and brief time frames of the study.

**Ethics**

The study has been granted full ethics approval by the Human Research Ethics Committee of Department of Health and Menzies School of Health Research. All data are accessible to the investigators and support investigation team only. In the audit forms, we will not record identifiable client information such as client's names or registration numbers.

A code will be used as identifier. This enables checking of data during the cleaning of audit data where necessary. Codes linked with client's names will be retained by the research team and a copy stored electronically with the rest of the data at Menzies in a separate file accessed only by a complex password.

**Engagement with stakeholders**

This project is a partnership between the RDH Maxillofacial Surgery Unit, the Alcohol and Other Drug (AOD) program NT wide, the remote AOD Workforce Program and Menzies School of Health Research. The AOD Workforce Program operates within a number of Aboriginal-controlled and government health centres in urban and remote settings across the NT. The NT Department of Health AOD program, the remote AOD workforce and the RDH surgery unit are key supporting partners. The AOD program assisted in the development of this project outline and is committed to its success. The surgery unit of RDH proposed the project and strongly supports the project's aims.

**Cost benefits**

We expect cost benefits from two perspectives: that of the medical care system, with benefits from reductions in future emergency room visits and hospitalisations, and that of society in general. Alcohol-related consequences are costly to society. The economic benefits from reductions in crime will include

reduced direct expenses such as medical care, mental health services, property damage, victim work loss, public service costs and other monetary losses. This project also has intangible cost benefits, especially in its potential to reduce crime and motor vehicle crashes and diminish victims' pain and suffering and improve their quality of life.

**Other benefits**

The project will implement and evaluate strategies for screening and intervention for reducing the harms associated with alcohol consumption in Indigenous patients in the NT in line with the Aboriginal and Torres Strait Islander Peoples Complementary Action Plan 2003-2009. The main objectives of the action plan are control of supply, management of demand, reduction of harm, early intervention and treatment.

The value of the study includes direct benefit to participants through improved wellbeing, decreased recurrence of injury and less substance misuse. The study benefits the service providers who care for high-risk drinkers who sustain injury by allowing them to provide timely advice and intervention.

Indirect benefit to the broader population is expected through:

- Strategies to engage and treat individuals with substance abuse concerns
- Further development of educational materials
- Contribution to best practice protocols that may generalise to a range of other settings

**Competing interests**

The authors declare that they have no competing interests

**Authors' contributions**

All authors have made an intellectual contribution to this research proposal. All authors have read and approved the final manuscript.

**Acknowledgements**

We are grateful for the financial support from Attorney General's Department, Proceeds of Crime Act 2002.

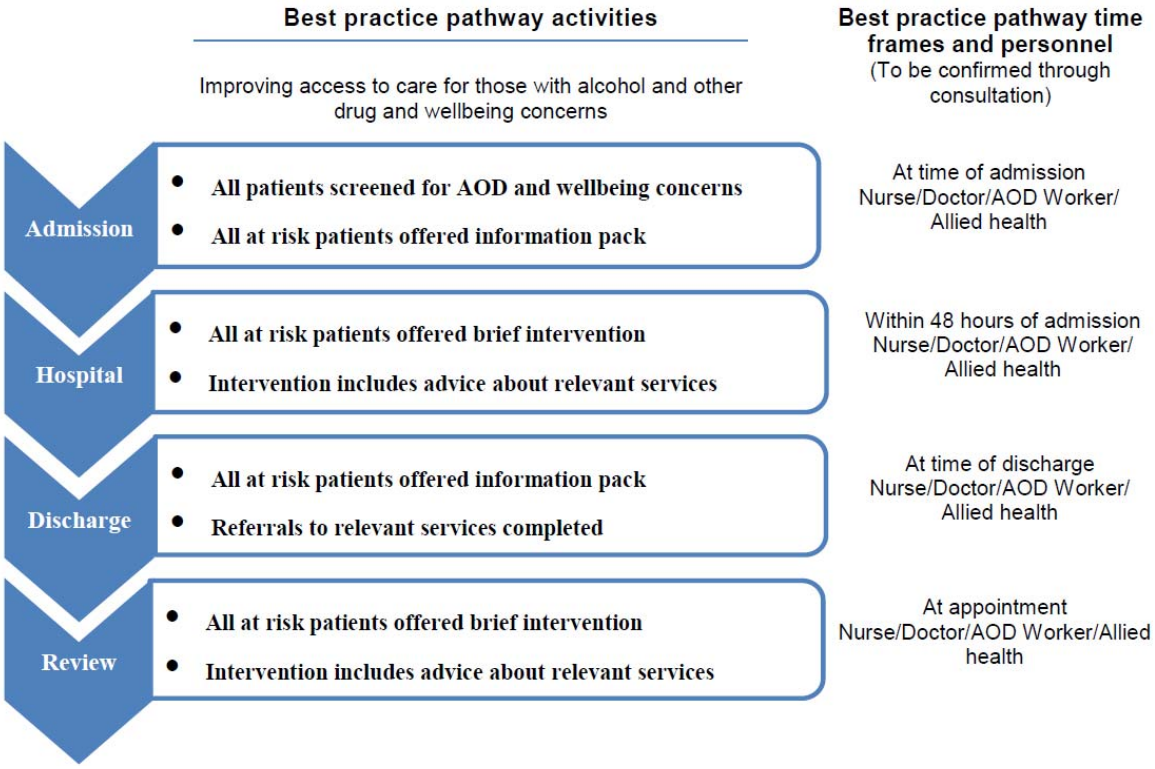


**Figure 1. PACT pathway of study**

## References


1. Murray CJL, Lopez AD: **Mortality by cause for eight regions of the world: Global Burden of Disease Study**. *The Lancet* 1997, **349**(9061):1269-1276.
2. Thomas M, Jameson C: **Facial trauma and post interventional quality of life in the Northern Territory, Australia**. *International Journal of Oral & Maxillofacial Surgery* 2007, **36**(11):1081.
3. Jayaraj R, Thomas M, Thomson V, Griffin C, Mayo L, Whitty M, d'Abbs P, Nagel T: **High-risk alcohol-related trauma among the Aboriginal and Torres Strait Islanders in the Northern Territory**. 2012.
4. **Alcohol and Injury in Emergency Departments**. *Summary of the Report from the WHO Collaborative Study on Alcohol and Injuries: World Health Organization* 2007.

5. Bertholet N, Daeppen J, Wietlisbach V, Fleming M, Burnand B: **Reduction of Alcohol Consumption by Brief Alcohol Intervention in Primary Care: Systematic Review and Meta-analysis**. *Archives of Internal Medicine* 2005, **165**(9):986-995.

6. Australian Institute of Health and Welfare. 2007 National Drug Strategy Household Survey: first results. Drug Statistics Series NCAIoHaW, 2008a,: **Available from: http://www.aihw.gov.au/publications/phe/ndshs07-fr/ndshs07-fr-no-questionnaire.pdf**.

7. **2004 National Drug Strategy Household Survey: First Results;** . *Australian Institute of Health and Welfare,* **IHW cat. no. PHE 57. Canberra: AIHW (Drug Statistics Series No. 13).URL:http://www.aihw.gov.au/publications/phe/ndshs04/ndshs04.pdf.**

8. Chikritzhs T, Brady. M: **Fact or fiction? A critique of the National Aboriginal and Torres Strait Islander Social Survey 2002.** *Drug Alcohol Rev* 2006, **25**(3):277-287.

9. Kelly AB, Kowalyszyn M: **The association of alcohol and family problems in a remote indigenous Australian community**. *Addict Behav* 2003, **28**(4):761-767.

10. Kowalyszyn M, Kelly AB: **Family functioning, alcohol expectancies and alcohol-related problems in a remote aboriginal Australian community: a preliminary psychometric validation study**. *Drug Alcohol Rev* 2003, **22**(1):53-59.

11. Vos T, Barker B, Stanley L, Lopez AD: **The Burden of Disease and Injury in Aboriginal and Torres Strait Islander Peoples 2003,**. *Summary Report, School of Population Health, The University of Queensland, Brisbane http://wwwlowitjaorgau/sites/default/files/docs/Indigenous-BoD-Summary-Report_0pdf* 2007.

12. Chikritzhs T, Heale P, Webb M: **Trends in alcohol-related road injury in Australia, 1990–1997. National Alcohol Indicators Bulletin No. 2**. *Perth and Melbourne: National Drug Research Institute and Turning Point Alcohol and Drug Centre* 2000.

13. Matthews S, Chikritzhs T, Catalano P, Stockwell T, Donath S: **Trends in Alcohol-Related Violence in Australia, 1991/92-1999/00.** . *National Alcohol indicators Bulletin 5* 2002.

14. Chikritzhs T, Catalano P, Stockwell T, Donath S, Ngo H, Young D ea: **Australian alcohol indicators, 1990–2001: patterns of alcohol use and related harms for Australian states and**

**territories.** *National Drug Research Institute, Curtin University of Technology and Turning Point, Alcohol and Drug Centre Inc,* 2003.

15. You J, Guthridge S: **Mortality, morbidity and health care costs of injury in the Northern Territory, 1991-2001**. *Health gains planning, Department of Health and Community Services Northern Territory* 2005.

16. Nagel T: **Motivational care planning: brief interventions in Indigenous mental health**. *Australian Family Physician* 2007, **37**(12):996-1001.

17. Nagel T, Robinson G, Condon J, Trauer T: **Approach to treatment of mental illness and substance dependence in remote Indigenous communities: Results of a mixed methods study**. *Australian Journal of Rural Health* 2009, **17**(4):174-182.