Australian National University

CRE Theme 2: Mental health and substance misuse in chronic disease prevention

Addressing alcohol and tobacco harms in remote Indigenous communities and rapid responses to mental health crises in regional centres

Alan R Clough, Stephen A Margolis, Adrian S Miller, Michelle S Fitts, Valmae Ypinazar, Caryn West, Jan A Robertson, K Grant, M Wrigley, et al.

University of South Australia

JAMES COOK UNIVERSITY AUSTRALIA

ACKNOWLEDGEMENTS

This research is a project of the Australian Primary Health Care Research Institute, which is supported by a grant from the Australian Government Department of Health. The information and opinions contained in it do not necessarily reflect the views or policy of the Australian Primary Health Care Research Institute or the Australian Government Department of Health.

CITATION

Clough AR, Margolis SA, Miller AS, Fitts MS, Ypinazar V, West C, Robertson JA, Grant K, Wrigley M, et al. (2017). Addressing alcohol and tobacco harms in remote Indigenous communities and rapid responses to mental health crises in regional centres. Report prepared for the Australian Primary Health Care Research Institute (APHCRI), Canberra, ACT: Australia.

Professor Alan Clough

James Cook University

Cairns Qld 4870 Australia

T +61 7 4232 1604

E alan.clough@jcu.edu.au

http://www.ccdp.jcu.edu.au

CONTENTS

Alcohol control policies in Indigenous communities: A qualitative study of the perceptions of their effectiveness among service providers, stakeholders and community leaders in Queensland (Australia) 5

BACKGROUND 5

METHODS 5

RESULTS 5

DISCUSSION 6

CONCLUSIONS 6

RESEARCH OUTPUT 6

Alcohol management plans in Aboriginal and Torres Strait Islander (Indigenous) Australian communities in Queensland: Community residents have experienced favourable impacts but also suffered unfavourable ones 7

BACKGROUND 7

METHODS 7

RESULTS 7

DISCUSSION 8

CONCLUSIONS 8

RESEARCH OUTPUT 9

Changes in serious injury and violence with alcohol controls in four remote Indigenous communities in far North Queensland (2000-2015) 10

BACKGROUND 10

METHODS 10

RESULTS 10

DISCUSSION 12

CONCLUSIONS 12

RESEARCH OUTPUT 12

Development and evaluation of smoke-free spaces in remote Indigenous communities – A project in northern Australia 13

BACKGROUND 13

METHODS 14

OVERVIEW OF EVALUATION APPROACH 15

The ‘Discovery Education’ approach underpins the intervention 16

Participants, recruitment, data and analysis 16

Rapid survey 17

Survey with heads of households 17

Key outcome measure – the number of houses with rules about smoking in any household space assessed at baseline and follow-up 18

Hypotheses 18

RESULTS 18

Data analysis 18
DISCUSSION 19
CONCLUSIONS 20
RESEARCH OUTPUT 20
Evaluation of Queensland's mental health co-responder model (CoRM) 21
BACKGROUND 21
METHODS 21
Police and mental health crisis 21
Consumers and mental health crisis 21
The Queensland Mental Health Intervention Project 21
Cairns Mental Health Co-responder Model 22
RESULTS 23
Executive summary of review results 23
DISCUSSION 24
CONCLUSION AND RECOMMENDATIONS 24
References 26

Alcohol control policies in Indigenous communities: A qualitative study of the perceptions of their effectiveness among service providers, stakeholders and community leaders in Queensland (Australia)

BACKGROUND

Alcohol Management Plans (AMPs) were initially designed as part of a wide range of innovative and significant Queensland Government reforms. As well as supply control, these promised to reduce alcohol and substance misuse and violence through demand reduction by addressing key social determinants: economic development; education and training, land and sustainable natural resource management, housing, and health [3, 4]. The limited available evidence in the peer-reviewed published literature points to some favourable impacts of restrictions [5, 6], including a reduction in indicators of serious injury in some communities to historically low levels [7]. These favourable findings were reflected in an internal Queensland Government review [4]. However, the evidence that these initial positive effects were experienced in all communities, or that they have been sustained, particularly after the most recent round of restrictions in 2008, has become equivocal [8].

This paper was the first in a unique evaluation research program designed to examine the health and social effects of Queensland's AMPs [1, 9]. It investigates issues surrounding implementation of the designed AMP intervention components, specifically their perceived impacts on alcohol supply and consumption, violence, injury and community health and well-being. Perceptions and experiences are reported of the community leaders, service providers and relevant organisations with a mandate or responsibility for alcohol-related matters in the affected AMP communities and nearby towns.

METHODS

Participants (N=382) were recruited from knowledgeable and experienced persons using agency lists and by recommendation across sectors which have a mandate for managing alcohol-related issues and consequences of AMP policies in communities. In semi-structured interviews, participants (51% Indigenous, 55% male and comprised of at least one-third local community residents) were asked whether they believed alcohol controls had been effective and to describe any favourable and unfavourable outcomes experienced or perceived. Inductive techniques were used for thematic analysis of the content of transcribed recorded interviews. Comments reflecting themes were assessed across service sectors, by gender, Indigenous status and remoteness.

RESULTS

Participants attributed reduced violence and improved community amenity to AMPs, particularly for 'very remote' communities. Participants' information suggests that these important achievements happened abruptly but may have become undermined over time by: the availability of illicit alcohol and an urgency to consume it; migration to larger centres to seek alcohol; criminalisation; substitution of illicit drugs for alcohol; changed drinking behaviours and discrimination. Most issues were more frequently linked with 'very remote' communities.

DISCUSSION

Prior to the 1970s, alcohol was not readily available in the 19 Indigenous communities in Queensland in this study. Then, somewhat abruptly, alcohol became available with few effective limits applied to control it for around 20 years [10, 11]. Between 2002 and 2008 restrictions were implemented and progressively tightened by the Queensland Government[3]. The affected communities had little opportunity to play a lead role.

Three years later, in 2011, the same Government began to seek 'exit strategies' promising to review alcohol controls if targeted reductions in harm indicators could be reached and sustained [3]. The opposing major party, as part of its electoral platform, also promised to "review and get rid of" restrictions [12]. When it came to power, in 2012, the new Queensland Premier and his Ministers, initially offered to 'normalise' access to alcohol in the affected communities within five years but settled instead on a formal review process. This review process continues despite a further change in the Government.

The policy dilemma is that relaxing alcohol restrictions may not address the issues identified by those interviewed but may in fact bring a return to the high levels of violence and community dysfunction documented in the 1990s. Quantitative studies are required to precisely measure the impacts of the issues identified in this qualitative study.

CONCLUSIONS

Alcohol restrictions in Queensland's Indigenous communities may have brought favourable changes, a significant achievement after a long period of poorly regulated alcohol availability from the 1980s up to 2002. Subsequently, over the past decade, an urgency to access and consume illicit alcohol appears to have emerged. It is not clear that relaxing restrictions would reverse the harmful impacts of AMPs perceived without significant demand reduction, treatment and diversion efforts.

RESEARCH OUTPUT

The major qualitative output from this study was published in 2016[2],

Clough AR, Margolis SA, Miller A, et al. Alcohol control policies in Indigenous communities: A qualitative study of the perceptions of their effectiveness among service providers, stakeholders and community leaders in Queensland (Australia). *International Journal of Drug Policy.* 2016;36:67-75.

Alcohol management plans in Aboriginal and Torres Strait Islander (Indigenous) Australian communities in Queensland: Community residents have experienced favourable impacts but also suffered unfavourable ones

BACKGROUND

In Australia, 'Alcohol Management Plans' (AMPs) provide the policy infrastructure for State and Commonwealth Governments to address problematic alcohol use among Aboriginal and Torres Strait Islanders. We reported community residents' experiences of AMPs in 10 of Queensland's 15 remote Indigenous communities because these have never been documented and their priorities for alcohol controls never considered. Recognising that the usual residents of the affected communities have neither had the opportunity to provide their views on these matters, nor have they ever received any objectively-derived evidence that AMPs had in fact reduced violence and injury and improved the safety of women and children, the study reported here set out to document community peoples' experiences of both 'favourable' and 'unfavourable' impacts at the local level. Prospects for sustaining 'favourable' impacts achieved while addressing unintended, 'unfavourable' ones are also considered.

METHODS

This study used a cross-sectional survey design: N=1211; 588 (48%) males, 623 (52%) females aged>=18 years. Seven propositions about 'favourable' impacts and seven about 'unfavourable' impacts were developed from semi-structured interviews. For each proposition, one-sample tests of proportions examined participant agreement and multivariable binary logistic regressions assessed influences of gender, age (18-24, 25-44, 45-64, >=65 years), residence (>=6 years), current drinking and Indigenous status. Confirmatory factor analyses estimated scale reliability (ρ), item loadings and covariances.

RESULTS

Slim majorities agreed that

- AMPs reduced violence (53%, P=0.024)
- The community was a better place to live (54%, 0.012), and
- The children were safer (56%, P<0.001).

More agreed that,

- School attendance improved (66%, P<0.001), and
- Awareness of alcohol's harms increased (71%, P<0.001).

Participants' were equivocal about improved personal safety (53%, P=0.097) and reduced violence against women (49%, P=0.362). The seven 'favourable' items reliably summarized participants' experiences of reduced violence and improved community amenity (ρ=0.90).

Stronger agreement was found for six 'unfavourable' items,

- Alcohol availability was not reduced (58%, P<0.001)

- Drinking was not reduced (56%, P<0.001))
- Cannabis use increased (69%, P<0.001)
- Binge drinking increased (73%, P<0.001)
- Discrimination experienced (77%, P<0.001)
- Increased fines, convictions and criminal records for breaching restrictions (90%, P<0.001).

Participants were equivocal (51% agreed, P=0.365) that police could enforce restrictions effectively. The seven 'unfavourable' items could not be reliably reflected in one group in the data (ρ=0.48) but in two groups of items: i) alcohol availability and consumption not reduced and ii) criminalization and discrimination increased.

In logistic regressions, longer-term (>= six years) residents more likely agreed that violence against women had reduced and that personal safety had improved but also that criminalisation and binge drinking had increased. Younger people disagreed that their community was a better place to live and strongly agreed about discrimination. Current drinkers' views differed little from the sample overall.

DISCUSSION

The results of this first survey of observations and experiences of adult residents in communities with an AMP in place in Queensland indicate that, by a narrow margin, they generally share the already-published views of long-term service providers, stakeholders and community leaders[2]. Participants recognised overall the 'favourable' impacts of AMPs on reducing violence, improving the safety of women and children, improved school attendance and community amenity, but with no overwhelming majority agreeing. These experiences are broadly consistent with the available objective evidence[14, 15] and other unpublished Queensland Government information and commentary[16]. Surrogate measures of alcohol-related injury progressively declined from 2002 after a period of poorly regulated alcohol availability beginning in the 1980s[14, 15]. Government statistics described reductions in interpersonal violence, but not in all communities.

Policy makers anticipated during the design phase that AMPs would have unintended consequences. Our survey shows that these have materialised in community residents' experiences particularly in terms of the failure of AMPs to reduce alcohol availability and consumption. The social impacts of criminalisation and discrimination were major concerns for a majority of participants irrespective of their views about the 'favourable' impacts. Clearly, these need to be addressed.

Longer term (>= six years) residents were more likely to agree with propositions about 'favourable' impacts but also that there had been 'unfavourable' ones: increased criminalisation and discrimination, changed drinking behaviours, and little impact on alcohol availability and its consumption. As the community populations age, perceptions of the 'favourable' impacts may become further eroded since, for example, younger people disagreed about the proposed 'favourable' impacts and also strongly agreed that discrimination was felt and experienced. Contrary to expectations, current drinkers held no particularly strong views about 'favourable' or 'unfavourable' impacts.

CONCLUSIONS

The dilemma facing policy makers reviewing AMPS would appear, on its face, to be insurmountable. With any risk of compromising community safety unacceptable, the evidence reported here suggests that alcohol restrictions should be maintained more or less

in their current form for the foreseeable future in Queensland's Indigenous communities. The present circumstances wherein AMPs are subject to review provide an important opportunity for a thorough and respectful consultation process which can target the issues of concern for communities identified, namely: reconciliation of the issues of criminalization and discrimination, addressing illicit alcohol and the provision of treatment and diversion services together with cultural awareness education for liquor retailers. These particular areas are largely the mandate of Government. The Local Government Councils in AMP communities, although lacking in resources, would likely play a constructive supporting role in addressing these issues provided there is democratic and appropriate consultation and engagement.

The results also suggest a role for research and evaluation. Deliberative democracy approaches[17] to develop suites of remedial evidence-based strategies, combined with community-inspired ideas would be appropriate to address the past lack of consultation with affected communities. Such approaches, increasingly used in considering complex ethical issues and policies in health systems research, would address in a pragmatic way calls for genuine government collaboration and engagement with Indigenous communities[16, 18, 19]

RESEARCH OUTPUT

A major quantitative output from the AMP evaluations was published in 2017[13],

Clough A, Margolis SA, Miller A, et al. Alcohol management plans in Aboriginal and Torres Strait Islander (Indigenous) Australian communities in Queensland: community residents have experienced favourable impacts but also suffered unfavourable ones. *BMC Public Health*. 2017;17:55. .

Changes in serious injury and violence with alcohol controls in four remote Indigenous communities in far North Queensland (2000-2015)

BACKGROUND

Queensland's 'Alcohol Management Plans' (AMPs) involve 'restricted area' declarations under S173G (Part 6A) of the Liquor Act 1992 with controls on quantities and types of alcohol permitted in a restricted area designated under S173H[20] and set out in Schedules 1A-1R of the Liquor Regulation 2002[21]. These place-based controls were first introduced in 2002[22]. By 2006, AMPs had been implemented in all 19 Indigenous communities in Queensland in this study[22]. From 2007, AMPs were reinforced with 'harm minimisation' measures to control the supply of alcohol from licensed premises located near the AMP communities targeted[22]. In 2008, further legislative measures tightened access to alcohol in all of the 19 AMP communities; bringing complete prohibition to seven of them[22]. Since the end of 2012, the Queensland Government has been reviewing AMPs[16, 22]. As this review unfolded, systematic evidence from key service providers and community leaders in affected communities and neighbouring rural centres suggested that initial significant reductions in violence and improved community amenity and safety were comparatively short-lived, with many localities seeing unintended impacts linked with continued access to illicit alcohol[2]. The ongoing effectiveness of Queensland's AMPs therefore requires assessment and monitoring.

METHODS

Using Royal Flying Doctor Service (RFDS) data, we have already monitored rates of aeromedical retrievals for serious injury in four AMP communities over a 15 year period from 1995 to 2010[14, 15]. Significant reductions in this important surrogate measure of alcohol-related violence and injury occurred after the first restrictions in 2002-03 but then rose during the following two years[14] before falling after the second round in 2008 to historically low levels by 2010 [15]. In this important current phase of AMP review, this study offers an extended and methodologically strengthened evaluation of whether the important successes achieved after 2008 have been sustained beyond 2010 into the present. The RFDS information for the same four communities is extended and combined with a second independent surrogate measure of alcohol-related violence, namely rates for victims of all 'person-to-person' violence recorded by the Queensland Police Service (QPS). Data for both time series was available for the period 2000 to 2015 (inclusive) for three key phases in the policy implementation: Phase 1 - from 2000 to 2008, Phase 2 - the four-year period (2009-2012) directly after the second round of restrictions, and Phase 3 - the last three years of available data (2013-2015).

RESULTS

Figure 1a (retrievals) and 1b (assaults) display community specific time trends for the observed rates. Consistent with previous results, the table and graphs for both time trends show a decrease during Phase 1 at, or shortly after, the first round of restrictions and then a rise. Assaults, however, began to decline around two years sooner than retrievals towards the end of Phase 1, near the time 'minimising harm' provisions restricted alcohol supply from 'catchment' licensed premises. During the 'dry as possible' Phase 2 (2010-2012) both rates reached their lowest levels. During Phase 3, beginning with the current review period, both rates revealed a clearly rising trend.

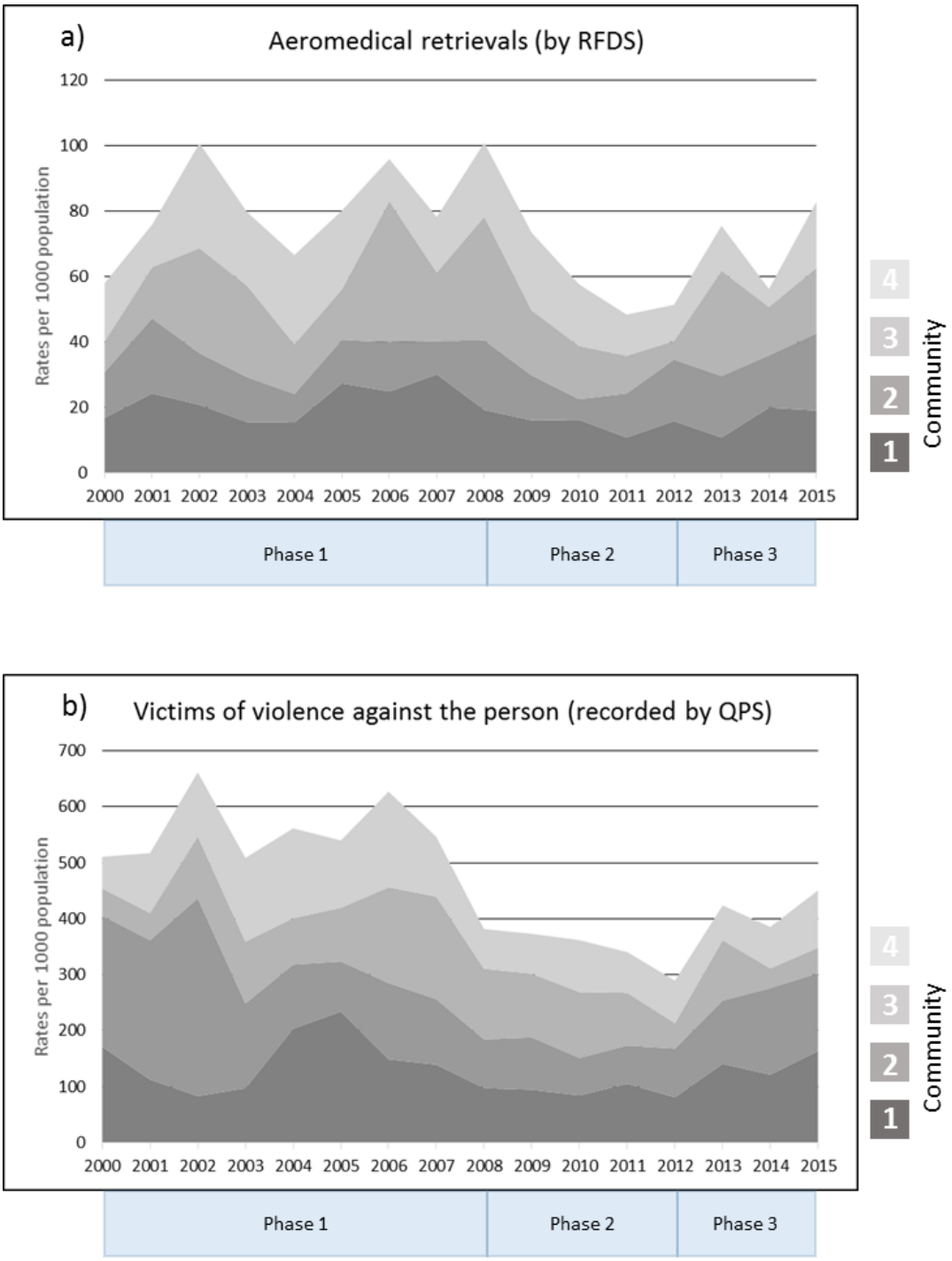


Figure 1. Rates (per 1000 population) of aeromedical retrievals for trauma by the Royal Flying Doctor Service (RFDS) and victims of violence against the person (assault) recorded by Queensland Police Service (QPS) across three phases of alcohol restrictions in four remote Indigenous communities in far north Queensland. [*unpublished data*]

Taking Phase 1 average rates as the baseline, we see a substantial decrease in average retrieval rates by 27.6% after the second round of restrictions but with a reduction by a lesser amount, 11.5%, for the latest time period. The respective observed average decreases for assault rates are 38.8% and 16.4%. In Phase 3, it was only in Community 4 that a reduction in both retrievals (37.5%) and assaults (32.4%) continued or was sustained relative to Phase 1. Community 3 saw a continued reduction in assaults (42.1%) but not retrievals. Proxy measures of alcohol-related violence and injury in the other communities

revealed a relatively steep rise after the 2009-2012 period, approaching the levels seen during Phase 1.

DISCUSSION

In four remote Indigenous communities in far north Queensland, after initial reductions to historically low levels in 2010-2012, rates of indicators of violence and serious injury appear to be rising once more in most localities. Importantly, these rates have generally not yet exceeded pre-2008 levels, but are trending in that direction.

CONCLUSIONS

It is of great concern that rates of retrievals for serious injury and victims of assault both show a generally increasing trend since 2010-2012 in these four study communities. This is in the absence of any substantial policy change affecting alcohol's legal availability. The underlying causes for these trends warrant urgent policy action informed by rigorous objective monitoring to ensure the successes gained by AMPs in Queensland are not placed in jeopardy.

RESEARCH OUTPUT

The following paper will be submitted for review to the *International Journal of Drug Policy*,

Clough AR, Fitts MS, Ypinazar V, Margolis SA, et al. Changes in serious injury and violence with alcohol controls in four remote Indigenous communities in far north Queensland (2000-2015).

Development and evaluation of smoke-free spaces in remote Indigenous communities – A project in northern Australia

BACKGROUND

This study of second-hand tobacco smoke exposure (SHSe) was implemented in selected Aboriginal and Torres Strait Islander (Indigenous) communities in northern Australia. It is continuing and final results are not available. It was designed to evaluate the outcomes achieved and the processes used in an intervention developed and delivered by a coalition of community service providers, Indigenous community leaders and community advocates. Their intervention consists of the following components: i) community-wide, culturally-relevant information to all householders about the health risks of SHSe and the benefits of smoke-free spaces with a particular focus on smoke-free homes combined with, ii) locally-sponsored and endorsed incentives for residents to create smoke-free homes, plus iii) immediate feedback about levels of SHSe measured in participants' homes.

Such intervention studies are needed because, in the world's Indigenous populations, the burden of disease linked with substance use is substantial and there are no published evaluations of interventions to reduce SHSe in Indigenous peoples' homes. For the general population, there is substantial published evidence that SHSe increases the risk of allergies, neural tube defects, sudden infant death syndrome and exacerbates asthma in children [23-25] while also increasing the risks for lung cancer, ischaemic heart disease and respiratory disease in adults [23, 25]. An estimated 600,000 (around 1.0%) of deaths worldwide are attributed to SHSe, 28% of which are deaths in children [26]. Moreover, there is good evidence that a smoke-free home: i) reduces SHSe for resident non-smokers (particularly for children) [27], ii) increases the number of quit attempts among a household's active smokers [27, 28] and iii) deters resident adolescents from becoming established smokers [26, 29, 30].

Studies in Indigenous populations examining the use of incentives, competitions and sponsorship, combined with other strategies to reduce smoking, have been conducted with Indigenous pregnant women, on worksites and among students [31-35]. No studies have specifically examined the potential advantages of using incentives to encourage smoke-free homes, therefore little is known about whether and what kind of incentives may be relevant and acceptable to Indigenous populations. Finally, no published studies are available involving Indigenous populations where SHSe has been measured and used in attempts to mobilise household level change, as are available for the general population.

Evidence-based intervention strategies are needed because smoking rates are elevated in Indigenous populations. In North America and Oceania, where Indigenous peoples were colonised by peoples from Western Europe, there are consistent, contemporary disparities in smoking rates between the local Indigenous populations and the general populations of the countries in these regions, and in the associated tobacco-related morbidity and mortality [36, 37]. Available data indicate that in Native Americans, current daily smoking rates of 21.9% are 1.3 times higher than for other Americans [38]. In Canada, smoking rates among Métis, First Nations and Inuit populations of 36.8%, 40.1% and 49%, respectively, are from 2.5 to 3.3 times higher than for other Canadians [39, 40]. Daily smoking rates among New Zealand Maori of 38.6%, are 2.4 times those for non-Indigenous New Zealanders [41]. Current daily smoking rates of 38.9% among Aboriginal and Torres Strait Islander (Indigenous) Australians are three times higher than for non-Indigenous Australians [42, 43] with tobacco use still the leading preventable cause of the disproportionately high chronic disease burden compared with other Australians [42, 44, 45]. Moreover, disparities in smoking rates and disease burden widen as remoteness and isolation increase [42, 46]. Overcrowding of houses in Indigenous Australian communities reinforces high smoking rates and increased SHSe [47].

From 60% to 71% of all Indigenous Australians live in households with daily smokers [23, 48] and overcrowding of housing increases with remoteness and isolation in the same manner as smoking rates [44, 48], thereby compounding the potential impacts of SHSe and providing further justification for robust intervention and evaluation studies.

In this evaluation study, community-based partners with a long history of engagement with their constituent communities have developed and are implementing an innovative suite of strategies. The partners have designed community-wide awareness-raising programs about the health risks of SHSe based on a long-standing, locally-developed cross-cultural education model. At the same time, the partners propose to design and administer acceptable incentives to create smoke-free homes. Levels of SHSe in participants' homes were measured in the evaluation and used to mobilise change at the household level while tobacco sales through local community stores were monitored.

To support these community-inspired efforts, this study examines how the study partners encouraged the creation of smoke-free homes in four participating remote communities in northern Australia. The objectives were to refine the intervention design, to consider its transferability, and to test elements of a robust strategy to evaluate its effects with valid outcome measures in a larger trial.

METHODS

The study was implemented in four communities in northern Australia (Figure 2), Napranum, Gapuwiyak, Ramingining and Minjilang.

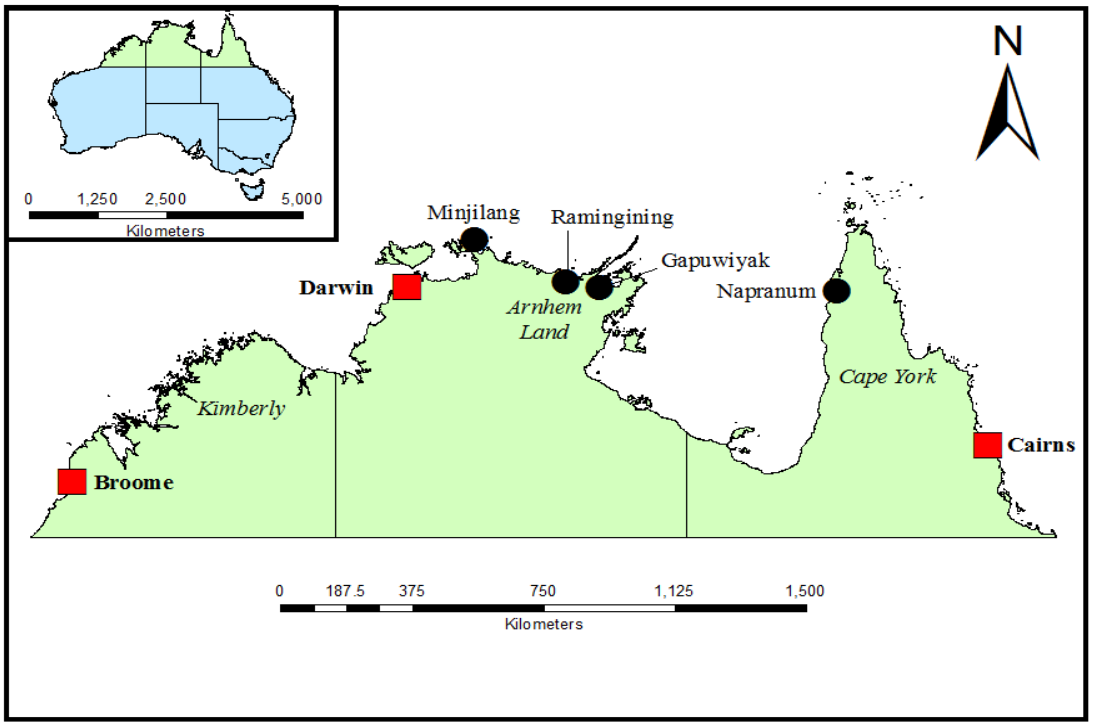


Figure 2. Four remote Indigenous communities in northern Australia (Map created with Environmental Systems Research Institute ArcGIS © software using Australian Bureau of Statistics Data)

Napranum is situated on the western side of Cape York in far north Queensland near the mining town of Weipa and 625km from Cairns, the main regional centre. At the 2016 census, Napranum, with the least crowded housing, was comprised of 228 households for

its 907 Indigenous residents [47], around 4.0 persons per household. Minjilang, in western Arnhem Land (NT), is located 235km north east of Darwin, the NT's capital city, and has a population of 221 Indigenous people living in 40 households [47], 5.5 per household. Ramingining and Gapuwiyak are both located in north east Arnhem Land, 450km and 550km from Darwin, respectively. Gapuwiyak is home to 871 Indigenous residents in 101 households, or 8.6 persons per household. Ramingining is the most crowded of the study communities with 811 Indigenous residents in 92 households, or 8.8 persons per household [47, 49].

Across these communities, for historical and geographical reasons, although English is spoken in all localities, there is a gradient in the degree to which traditional languages and conceptual constructs are retained and used in routine daily communication. One or more of the dialects of Yolngu matha are used for day-to-day communication in Gapuwiyak and Ramingining. In Minjilang, day-to-day communication is either in the local Kriol or in Gunwingku, the major language group in western Arnhem Land. In Napranum, Torres Strait Kriol is typically used [47]. This diversity, amongst other factors, makes for cross-cultural challenges for developing educational and awareness-raising strategies that have meaning in terms of health behaviour for local community residents, particularly smoking. This diversity also provides the opportunity to examine the transferability of interventions across a cultural gradient.

OVERVIEW OF EVALUATION APPROACH

The study used a mixed methods exploratory evaluation design [50] which is well-suited for such community-focused interventions. In collaboration with the Arnhem Land Progress Association (ALPA), qualitative information was first compiled using the Aboriginal Resource and Development Services (ARDS) 'Discovery Education' focus group discussions augmented by consultations with stakeholders and community leaders. These groups naturally formed the evaluation advisory group for each community to be engaged and consulted throughout the project. Firstly, the purposes of the project were discussed and explained in detail with this group and qualitative information from participant responses provided guidance on intervention content and delivery, evaluation procedures and community requirements. Then, a rapid survey was conducted with as many heads of community households as possible to gauge their interest in having the project team visit their household to discuss the study objectives in more detail (and in private). At each participating household, a first round of interviews with all senior household members was conducted. In these interviews, the number of residents and resident smokers in age and gender groups was documented and a household tobacco expenditure budget was compiled. The nature and content of any existing strategies to control SHSe were documented. The use of a particle meter to measure each household's SHSe was discussed and negotiated and where permission was granted, particle measures taken. Permission for a follow-up assessment and further particle measurements were discussed and follow-up assessments are being conducted with those who agreed. During the study period, tobacco sales data from ALPA's community store was used to inform discussions about tobacco consumption and to monitor any abrupt changes which may have occurred in consumption or expenditure.

This study followed the NHMRC guidelines on ethical research approaches to Indigenous studies. The identified values that are integral to Aboriginal and Torres Strait Islander studies are spirit and integrity, reciprocity, equality, survival and protection and responsibility [51]. These values were met with this project as it was community-inspired, included an Indigenous community advisory group and engaged with communities in ways developed and managed by community residents and their established service and advocacy groups.

The 'Discovery Education' approach underpins the intervention

The intervention was based on the 'Discovery Education' model developed and used by ARDS over thirty years, but never systematically evaluated. ARDS have contended that dialog and understanding occur more rapidly and effectively in a people's first language and when founded in the shared conceptual structures in communities. To create effective dialog on topics such as smoke-free homes, the methodology followed these conceptual steps (though in practice they can occur in parallel for future work),

1. 'Discovery Education' commences by seeking to understand what people know of a topic and the questions they have about it. This enquiry identifies the differences between mainstream perspectives and those of community members.
2. The concepts and words in the vernacular that people apply to the subject at hand are identified. This methodological step aims to identify generative vocabulary, i.e. key words that relate to the topic.
3. Then, through further dialog, new relevant knowledge is shared. 'Discovery Education' is a two-way process where both ARDS educators and Indigenous community members learn about each other's worldview. During this process, new generative terms are found and improved ways of explaining new topics are developed.

The 'Discovery Education' process allows people to progressively integrate new knowledge into their existing worldview and to make their own decisions about how they will respond. People who have long been the subject of politically motivated "interventions" [52, 53], rather than health promotion strategies based on public health evidence, have welcomed the two-way engagement between equals that is enshrined in the methodology [54].

Participants, recruitment, data and analysis

'Discovery Education' groups

In each community, advised and guided by the research partners, and using existing networks and established relationships, 'Discovery Education' groups were recruited which included key community representatives. This purposive sampling was combined with a snowball approach, i.e. with further recommendations for both participants to recruit and recruitment processes sought as discussions progressed. A sufficient number of focus group sessions was needed to represent the complex clan structure of each community.

Data

The discussion thread for the 'Discovery Education' groups generated qualitative data as follows,

1. Share information about why SHSe is a health issue and translate the information into an appropriate form for local people.
2. Discuss the utility of measurements of respirable particulate matter and demonstrate the use of a particle measuring device (Dylos DC1700). The Dylos unit was used in this project as it provides a cheap, real-time data source that can be used as a motivator to affect change in smoking behaviours in homes particularly in those with young children [55].
3. Are community people aware of health risks from SHSe and how do they assess these?
4. How can this information be best conveyed to householders in the community as a whole?

5. What kinds of incentives would encourage different groups in the community to implement SHSe strategies in their houses and how should the incentives be allocated? Our pilot data show that vouchers for purchases at the community store or to run household electricity consumption are welcomed. Discussing this with the 'Discovery Education' groups will assist in identifying culturally appropriate and effective rewards, along with the fairest way to distribute them.

Data analysis

'Discovery Education' group recordings were transcribed and then analysed thematically, moving from initial codes imposed by the discussion thread to descriptive and more analytic concepts [56]. NVivo 10 aided data retrieval and management for two researchers coding independently.

Rapid survey

Information about awareness of health risks of SHSe and how people assess these was combined with evidence in the literature and used to develop culturally-relevant instruments for survey data collection with the guidance of the 'Discovery Education' groups. At the ALPA-run community store, as many adult Indigenous community residents as possible were provided with information about the proposed community-led strategy and a brief survey was conducted.

Data

For those willing to answer questions, the brief survey included assessments of,

- Whether they are a smoker, any quit intentions and whether they share their home with smokers
- Any current knowledge or awareness of SHSe and its harms
- The location of the house they live in (lot number on the community services map) and whether they know of any household rules about smoking at that address, and
- Their interest or willingness to participate in or support the community-led strategy. The heads of households that are determined through the rapid survey will each be invited to participate in a more comprehensive survey conducted at their house and in private.

Data analysis

These survey responses were analysed using frequency distributions and tabulations of responses by lot number, managed and calculated using spreadsheets.

Survey with heads of households

Baseline data

The project aimed to capture a minimum set of baseline data in each participating household,

- In consultation with the head of each household, demographic data, smoking status and living conditions were documented. A smoking grid for that day was compiled using established methods [57, 58].
- For objective assessments of SHSe, households were asked permission to temporarily set up the particle monitor inside the house. Self-reported assessments of SHSe were elicited from heads of households with immediate feedback of particle monitoring results [55, 59].

- Where permission was granted, SHSe levels were measured over a 48-hour period [50].
- A description of any smoke-free spaces or rules about where people can or cannot smoke already established for that household
- A description of the residents of the household and whether or not they are smokers
- An understanding of how any smoke-free spaces and rules were originally established and how they are maintained
- An understanding of whether household members would like to establish or expand smoke-free spaces and rules and receive incentives to do so, and
- An understanding of weekly household expenditure on tobacco.

Key outcome measure – the number of houses with rules about smoking in any household space assessed at baseline and follow-up

A home is considered smoke-free when no smoking at all is allowed indoors [60]. However, our results indicate that community residents speak of SHSe controls in terms of smoking 'outside the house' which can mean that smoking is not permitted within the property boundary, but is permitted on covered verandas and porches, particularly during the tropical wet season [58, 61]. Additionally, our data indicate that smoke-free rules can be applied to separate rooms in a dwelling or 'around sick people or children', wherever they are located inside a house or on a veranda. Around one-third of household heads reported that they have such rules in place, according to preliminary data for one study community. Therefore our operational definition of a 'smoke-free home' was,

> any home where there are any rules in place and recognised by members of a household as constraining smoking in spaces indoors or on external verandas.

The status of 'smoke-free homes' known in the community was validated with the 'Discovery Education' groups at baseline and follow-up using group discussions and consensus classification approaches already used routinely and shown to be valid in these populations [62-64]. From one to three months after the baseline data collection, the objective assessments and the self-reported assessments were repeated, following the steps specified above for the baseline data.

Hypotheses

For a socially significant change, it was hypothesised that after the intervention is implemented there would be,

- An increase in the number of houses with rules about smoking up to a level greater than 50% of the total number of houses in the community
- A decrease in the mean SHSe levels observed in houses, and
- A decrease in household expenditure on tobacco which may also equate to a reduction in tobacco sales at the local community store.

RESULTS

Data analysis

At baseline, survey responses were analysed using frequency distributions and tabulations of responses by lot number calculated using spreadsheets. Descriptive statistics and graphical methods were deployed as appropriate to the survey measures developed.

Mainly categorical measures were anticipated so chi-square tests and regression modelling were appropriate. Comparisons between baseline and follow-up used McNemar's chi-square or Wilcoxon matched-pairs signed rank tests for binary or categorical data respectively. Paired t-tests were used to compare baseline particulate matter and household tobacco expenditure with follow-up measurements. Weekly tobacco sales using data provided by ALPA are being used to estimate per household expenditure and analysed using time series graphs. For all survey responses, internal consistency is assessed. Quantitative data is being analysed using Stata 14©.

Feedback of study results and consideration of feasibility thresholds

In a final visit to each study community, 'Discovery Education' focus groups and advisory group members will be reconvened to provide the study's results to clan leaders. Acceptable reliability of self-assessments of SHSe at both baseline and follow-up would provide confidence in the qualitative measures. A sound intervention study would enrol at least 80% of the houses in participating communities in a trial. A socially significant effect of the intervention would see at least 10% of households in participating study communities achieving validated smoke-free status between baseline and follow-up. If this study can demonstrate a substantial proportion of households surveyed participating in the intervention and attempting to make changes, the case for expanding the trial would be compelling. Clan leaders will provide direction.

DISCUSSION

Although final results are not yet available, this project aims to reinforce the known capacity in remote communities to manage environmental tobacco smoke [61] in order to encourage the number of smoke-free homes in the study communities. Effective interventions to reduce SHSe in remote Indigenous communities hold the prospect of reducing significant smoking related health issues. Such interventions for Indigenous Australian populations have been advocated in the literature [28, 30, 58, 61] but none have been implemented or rigorously evaluated.

In a recent review of all the major community-level substance misuse intervention trials funded by Australia's National Health and Medical Research Council and conducted over the past decade in remote Indigenous Australian communities, including five targeting tobacco, no clear effect in reducing smoking in these populations was found that could be attributed to any of the researcher-designed and evidence-based interventions[65]. Low fidelity of intervention implementation, weak study designs, inadequate sample sizes and no explicit program theory for intervention implementation and uptake were principal limitations [65] Contrasting with these generally unsuccessful intervention designs, unique data from one NT study describes specific individual efforts by community residents to control SHSe in their dwellings [66]. Early study findings contribute to gaining a deeper understanding of pragmatic approaches which support such genuine community efforts. Such efforts are needed in these extreme circumstances of remoteness and crowded living circumstances with some of the highest smoking rates known. There is a strong prospect that these efforts can be significantly strengthened as key Indigenous stakeholders and community leaders in these regions also see smoke-free policies generally as a significant opportunity to reduce tobacco-related harms in their communities [65].

The ongoing strong community advocacy and support of the long-standing Indigenous organisations leading this intervention (ALPA and ARDS) represents an important opportunity to reduce SHSe and improve health outcomes in these remote communities. With half or more of the people being daily smokers amidst the crowded living conditions found in these communities [46], improvements to health experienced by other Australians as smoking rates fall are not available in these marginalised populations. Future larger and

more rigorous studies will be possible if the intervention and evaluation approach proves, in the end, to be feasible and effective with:

- Robust self-reported and objective outcome measures;
- Evidence for strong implementation fidelity;
- Convincing potential for the community organisations initiating the intervention to sustain it, and
- with capacity strengthened with evidence to transfer positive intervention components to other similar environments.

CONCLUSIONS

Very high and unchanging rates of smoking in populations where overcrowding in housing is extreme, but where there is documented potential for appropriately designed and supported intervention strategies to be taken up by local Indigenous community residents and advocated by their leaders, suggests that efforts to reduce SHSe will be welcomed in these settings.

RESEARCH OUTPUT

The following papers provide additional details regarding the study protocols and the supporting literature,

Clough AR, Robertson J, Grant K, Wrigley M, et al Interventions to encourage smoke-free homes in remote Indigenous Australian communities: a study protocol to evaluate the effects of a community-inspired awareness-raising and motivational strategy. *BMJ Open* [under review]

Stevenson L, Campbell S, Bohanna I, et al. Establishing Smoke-Free Homes in the Indigenous Populations of Australia, New Zealand, Canada and the United States: A Systematic Literature Review. *International Journal of Environmental Research and Public Health.* 2017;14(11). doi: 10.3390/ijerph14111382

Evaluation of Queensland's mental health co-responder model (CoRM)

BACKGROUND

This report provides a review of the development, implementation, impacts and perceived benefits of the Cairns Mental Health Co-responder Project (CMHCP). This project commenced in 2011 and arose from the state-wide tri-agency Mental Health Intervention Project described more fully below. The project involves the co-location of an Authorised Mental Health Practitioner (AMHP) and a Queensland Police Service officer in a Queensland Health Mental Health Acute Care Team (ACT) setting. The team work collaboratively to prevent and resolve mental health crisis situations in the community.

METHODS

Police and mental health crisis

Police officers are frequently the first responders to incidents where individuals display signs of poor mental health due to crisis. Police are involved where there are safety concerns for the individual and the public. There is a growing body of evidence in Australia and internationally that the level of contact between the criminal justice system and individuals with poor mental health is increasing. The trend has been attributed to a range of reasons including insufficiently resourced community mental health services and deinstitutionalisation. Interactions between police and people in mental health crisis are recognised as involving risk of harm for all parties. In order to minimise these risks and improve outcomes, specialised responses have been developed. These include first-line responses by specially trained police who act as liaisons with mental health services, and co-responder models where police and mental health professionals work collaboratively to provide a joint response to a mental health crisis situation.

Consumers and mental health crisis

Consumers participating in two Australian studies have described their experiences of formal responses to mental health crises by police when responding alone, i.e. without involvement of personnel with skills in mental health. Consumers reported unsympathetic attitudes displayed, feelings of intimidation and the view that there was disproportionate use of force. These situations were described by consumers as immensely distressing. The use of force was perceived to escalate crisis situations. However, recent research indicates that a collaborative police and mental health responses in Victoria, Australia, had contributed to improved consumer experiences and outcomes. The co-responder team had achieved these through,

- Improved communication and de-escalation
- The ability to engage quickly, building trust and understanding
- Provision of a rapid response
- Information hand-over to Emergency Department (ED), and
- Psychiatry staff, and development of Crisis Intervention Plans with further opportunity to develop care plans that incorporated the consumers' wishes.

The Queensland Mental Health Intervention Project

Commenced in 2006, the Mental Health Intervention Project (MHIP) is a state-wide tri-agency partnership between Queensland Police Service (QPS), Queensland Health (QH)

and the Queensland Ambulance Service (QAS). The project aimed to provide a more coordinated, interagency response to mental health crisis situations, to prevent and/or safely resolve mental health crisis situations and reduce the risk of injury to members of the community and agency staff.

The partner agencies work together at the district level, meeting regularly to identify local solutions, including developing and using collaborative protocols, to respond mental health issues. Through targeted mental health training for first responders and the enhancement of existing collaborative protocols, particularly assessment of risk through information sharing arrangements, the specific objectives of MHIP were to,

- Increase the number of mental health incidents resolved safely
- Increase the number of individuals referred to and subsequently transported by QAS
- Increase the number of Emergency Examination Orders (EEOs) completed by QAS
- Reduce the number of repeat calls to mental health incidents by QPS and QAS
- Reduce the amount of police time spent resolving mental health incidents
- Increase the efficiency of inter-agency protocols and,
- Review completed EEO's and provide feedback to QPS and QAS.

The inter-agency collaborations were also intended to enhance skill and knowledge levels of mental health clinicians and police, to improve relationships and cooperation between QH, QPS and QAS, and to increase and improve community support networks and crisis prevention capacity.

QH implemented 14 Full Time Equivalent (FTE) specialist clinical Mental Health Intervention Co-ordinator (MHIC) positions across 16 QH districts. These positions remain attached to acute care teams within regions across the state. QPS MHIC positions are filled by existing divisional staff who submitted an Expression of Interest in the role. As part of their role, MHICs supported all agencies through maintenance of formal contact with key police, health (mental health services) and ambulance stakeholders and became proactive members of local Operational Liaison Committees (OLCs). These local interagency committees are attended by senior management and provide a forum to review incidents or individuals in crisis where mental health and emergency services were involved and for discussing complex cases with the intention of improving processes e.g., develop Crisis Intervention Plans or recommend further assessments such as Forensic Assessments. The MHICs were also able to provide information and advice to other health services and professionals along with assistance in development of early intervention models and short-term clinical referral services.

Cairns Mental Health Co-responder Model

MHIP utilised the Mental Health Collaboration Memorandums of Understanding (MOUs) between QH and QPS (2011) and between QAS and QPS (2007) which guide interagency coordination when responding to people with a mental illness who are in crisis. However, the initial role of the MHICs was consultation and liaison. In order to improve responses to mental health crisis, particularly outcomes for consumers, recommendations were made to trial other models of joint response at the scene by QPS and QH.

Based on a collective decision by senior Police aware of other internationally accepted models, where a mental health worker accompanied police in responding to mental health calls, a six-month trial of a co-responder team located in Cairns commenced in April 2011. The initial aims of the Cairns Mental Health Co-responder Model (CoRM) project were,

- Demonstrate that a partnership between Police and Mental Health is an effective model for responding to people with a mental health condition experiencing a crisis

- Provide a rapid intervention to enable a more timely, informed and accurate assessment of a consumer experiencing poor mental health which will effectively prevent harm to the individual or to others, and to resolve situations safely and satisfactorily
- Reduce Emergency Examination Orders obtained by QPS and QAS officers during the times when the CoRM team is available
- Reduce the workload on the ED at the Cairns Base hospital by transporting only individuals who require treatment to the department
- Provide interventions within the community that reduce the risk of behavioural escalation and remove the need for hospitalisation; promoting care/treatment within the community where possible
- Enhance communications between Mental Health and Police. This could include the provision of more rapid access to mental health database information and Police database information, to better serve consumers in need
- Enhance mutual understanding of Police and Mental Health service systems, and
- Provide onsite mental health training to QPS and QAS staff.

The model incorporated a collaborative approach to ensure services are accessible and meet the needs of the community in a timely manner. Policing staff serving in the Cairns region have since engaged with other policing jurisdictions internationally to document best practice when responding to individuals in the community with poor mental health in crisis.

The Co-responder team is comprised of a uniformed QPS Police Officer, and a plain-clothed Queensland Health Mental Health clinician. The team is co-located with the Cairns Acute Care Team for the Adult Mental Health Cluster, Cairns and Hinterland Mental Health and ATOD Service of Queensland Health. The team work together to provide an immediate joint response to people who are in mental health crisis. The team shares a QPS radio, private QH office space and an unmarked vehicle. A QAS radio and dedicated phone was added to the project in 2014. Operating within the provisions of a Memorandum of Understanding (MOU) between QH and QPS, as delegated staff members, the team work collaboratively to prevent and resolve mental health crisis situations. Under this MOU, the individual QH and QPS data-bases are directly accessed by the respective staff members and only information relating to risk is verbally shared. This sharing of consumer information where possible assists with rapid risk assessment based on the consumer's history and informs appropriate interventions.

RESULTS

Executive summary of review results

The review process was guided by a group of key stakeholders who agreed that objectives of the review should inform: best practice by first responders; efforts to better resource the current model and a formal evaluation study design. The results of this review indicate the CoRM project has resulted in at least the following:

- Improved experiences and outcomes for consumers including reduced trauma, less use of force and reduced stigmatisation
- De-escalation and prevention of crisis situations
- Improved inter-agency collaboration
- Improved safety for first responders and mental health practitioners

- Reduction in use of involuntary assessment procedures
- Saving of person-hours by first responders and mental health practitioners
- Provision of further mental health training opportunities for first responders
- Improved awareness and utilisation of the project by Queensland Police Service, Queensland Ambulance Service and Mental Health service providers.

The main recommendation for improvement of the project was an extension of hours of operation to cover all peak hours of need.

Key stakeholders identified essential components contributing to the success of the model including the appointment of co-located staff who are highly motivated to work in the area of mental health with a combination of strong clinical skills and demonstrated experience of working effectively in crisis situations. Senior and executive level support and governance from the participating agencies was considered equally important along with a regular inter-sectoral forum providing the opportunity to not only guide and monitor project implementation but also address any operational issues.

DISCUSSION

While acknowledging mental health training for first responders is not core business of the Cairns Mental Health Co-Responder Project, there were strong calls from stakeholders for systematic and ongoing workforce development for police and ambulance officers regarding mental health issues including crisis management. Recognised best practice in this type of training has been to engage the participation of members of the consumer advocacy groups, including individuals with lived experienced of being mentally unwell and groups of carers. The increased proportion of Emergency Examination Orders generated by first-responders over the review period which did not result in assessment documents being made indicate additional training in the use of Emergency Examination Orders may be of benefit.

The lack of many comparators, in part due to systems changes, has limited the opportunity to fully reflect on changes in the impacts of the Cairns Mental Health Co-Responder Project between 2011 and 2016. However, the review indicates that through effective inter-agency collaboration, the project has achieved its stated aims, i.e. to improve the resolution of mental health crises in the particular context of an outer-regional city. As reported by key stakeholders, this has also included occasions of the prevention of mental health crises escalating into extreme situations, including siege events requiring high-level police response. However, a more formal evaluation approach is required to accurately capture the full range of project outputs and impacts.

CONCLUSION AND RECOMMENDATIONS

This review examined an innovative model of practice that seeks to improve the resolution of mental health crises in an outer regional city. The Cairns Mental Health Co-Responder (CoRM) Project commenced in 2011. This is an inter-sectoral collaboration between Queensland Health and Queensland Police, strongly supported by Queensland Ambulance, and is based upon internationally recognised models of best practice. The CoRM project team is comprised of an Authorised Mental Health Practitioner and a police officer who are co-located within an acute care mental health team. They are equipped to make joint rapid responses to mental health crises in the community utilising existing first responder communication systems. Through a Memorandum of Understanding between Queensland Health and Queensland Police Service this team is able to access and share sensitive consumer information in a timely manner which informs risk assessment and appropriate interventions.

Based on the findings of this review the following recommendations are made,

- An adequately resourced and comprehensive evaluation be undertaken in order to assess project outputs and impacts including a cost-effectiveness analysis
- Existing data systems are comprehensively evaluated to identify crucial gaps in data collection including both shared and service-specific indicators. This would entail a collaborative effort between participating services in order to accurately reflect all aspects of Cairns Mental Health Co-responder Project activity
- There is a need to directly explore the experiences of the model with consumers and carers in order to determine their experiences, outcomes and recommendations for improvement
- Consideration be given to ensuring sustainability of the project through resourcing a core Queensland Police Service position at a designated rank which recognizes the associated high level of risk and responsibility. This position could be enhanced by access to accredited mental health training
- A pool of specially trained Queensland Police Service staff be available to provide leave cover in order to ensure project continuity. Contingent upon resources further QPS staff could be available to extend the hours of project operation to cover all peak times of demand.

REFERENCES

1. Clough AR, Fitts MS, Robertson JA, et al. Study Protocol--Alcohol Management Plans (AMPs) in remote indigenous communities in Queensland: their impacts on injury, violence, health and social indicators and their cost-effectiveness. *BMC Public Health*. 2014;14:15.

2. Clough AR, Margolis SA, Miller A, et al. Alcohol control policies in Indigenous communities: A qualitative study of the perceptions of their effectiveness among service providers, stakeholders and community leaders in Queensland (Australia). *International Journal of Drug Policy*. 2016;36:67-75.

3. Clough AR, Bird K. The implementation and development of complex alcohol control policies in Indigenous communities in Queensland (Australia). *International Journal of Drug Policy*. 2015;26:345.

4. Queensland Government. *Meeting Challenges, Making Choices Evaluation Report 2005*. Brisbane: Queensland Government; 2005.

5. Margolis S, Ypinazar VA, Clough AR, et al. Absence of alcohol withdrawal syndrome in a remote Indigenous community. *Medical Journal of Australia*. 2008;189:596.

6. Margolis, Ypinazar VA, Muller R. The impact of supply reduction through alcohol management plans on serious injury in remote indigenous communities in remote Australia: a ten-year analysis using data from the Royal Flying Doctor Service. *Alcohol and Alcoholism*. 2008;43:104-10.

7. Margolis, Ypinazar VA, Muller R, et al. Increasing alcohol restrictions and rates of serious injury in four remote Australian Indigenous communities. *Medical Journal of Australia*. 2011;194:503.

8. Queensland Government. *Annual Bulletin for Queensland's Discrete Indigenous Communities; 2011/12*. Brisbane; 2013.

9. West C, Usher K, Clough AR. Study protocol--resilience in individuals and families coping with the impacts of alcohol related injuries in remote indigenous communities: a mixed method study. *BMC Public Health*. 2014;14:479.

10. Martin D. T*he supply of alcohol in remote Aboriginal communities: potential policy directions from Cape York.* Centre for Aboriginal Economic Policy Research, The Australian National University. 1998 Monograph No.: N0. 162/1998.

11. Fitzgerald T. *Cape York Justice Study*. Queensland Government. Brisbane; 2001.

12. O'Dwyer M. *LNP CanDo action: responsible alcohol management - a community approach Brisbane*: Liberal National party; 2012 [3/03/2016]. Available from: **http://lnp.org.au/wp-content/uploads/attachments/AlcoholManagement.pdf**.

13. Clough A, Margolis SA, Miller A, et al. Alcohol management plans in Aboriginal and Torres Strait Islander (Indigenous) Australian communities in Queensland: community residents have experienced favourable impacts but also suffered unfavourable ones. *BMC Public Health*. 2017;17:55.

14. Margolis SA, Ypinazar VA, Muller R. The impact of supply reduction through alcohol management plans on serious injury in remote indigenous communities in remote

Australia: a ten-year analysis using data from the Royal Flying Doctor Service. *Alcohol and Alcoholism*. 2008;43:104-10.

15. Margolis SA, Ypinazar VA, Muller R, et al. Increasing alcohol restrictions and rates of serious injury in four remote Australian Indigenous communities. *Medical Journal of Australia*. 2011;194:503-6.

16. d'Abbs P. Widening the gap: The gulf between policy rhetoric and implementation reality in addressing alcohol problems among Indigenous Australians. *Drug and Alcohol Review*. 2015;34:461-6.

17. Fishkin J. *When the People Speak : Deliberative Democracy and Public Consultation*. Oxford University Press; 2009.

18. Brady M. Failing to 'carry the people along'. *Drug and Alcohol Review*. 2015;34:471-2.

19. Wilkes E. Aboriginal autonomy and the reduction of alcohol-related harm. *Drug and Alcohol Review*. 2015;34:469-70.

20. Bird K, Fitts MS, Clough AR. Alcohol management plans in Indigenous communities in Queensland (Australia) may have unintended implications for the care of children. *Health and Justice*. 2016;4:8.

21. Liquor Regulation, (2002).

22. Clough AR, Bird K. The implementation and development of complex alcohol control policies in indigenous communities in Queensland (Australia). *The International Journal of Drug Policy*. 2015;26:345-51.

23. Australian Government. *Environmental tobacco smoke*. Australian Government, 2014.

24. Kelso J. Environmental Tobacco Smoke Exposure and Risk of Allergic Sensitisation in Children: A Systematic Review and Meta-analysis. *Pediatrics*. 2015;136:S235-S6.

25. Centers for Disease Control and Prevention. *Health Effects of Secondhand Smoke 2017*. Available from: **https://www.cdc.gov/tobacco/data_statistics/fact_sheets/secondhand_smoke/health_effects/.**

26. Oberg M, Jaakkola MS, Woodward A, et al. Worldwide burden of disease from exposure to second-hand smoke: a retrospective analysis of data from 192 countries. *Lancet*. 2011;377:139-46.

27. Longman JM, Passey ME. Children, smoking households and exposure to second-hand smoke in the home in rural Australia: analysis of a national cross-sectional survey. *BMJ Open*. 2013;3:1-8.

28. David P Thomas KSP, Matthew Stevens, Pele T Bennet and Ron Borland. Smoke-free homes and workplaces of a national sample of Aboriginal and Torres Strait Islander people. *Medical Journal of Australia*. 2015;202 S33 - S8.

29. Edwards R, Gifford H, Waa A, et al. Beneficial impacts of a national smokefree environments law on an indigenous population: a multifaceted evaluation. *International Journal for Equity in Health*. 2009;8:12.

30. Thomas DP, Stevens M. Aboriginal and Torres Strait Islander smoke-free homes, 2002 to 2008. *Australian and New Zealand Journal of Public Health*. 2014;38:147-53.

31. Leeks KD, Hopkins DP, Soler RE, et al. Worksite-based incentives and competitions to reduce tobacco use. A systematic review. *American Journal of Preventive Medicine*. 2010;38:S263-74.

32. Morean ME, Camenga DR, Kong G, et al. Predictors of middle school students' interest in participating in an incentive-based tobacco prevention and cessation program in connecticut. *Journal of Addiction*. 2014;2014:915652.

33. Glover M, Kira A, Walker N, et al. Using incentives to encourage smoking abstinence among pregnant indigenous women? A feasibility study. *Maternal and Child Health Journal*. 2015;19:1393-9.

34. Kira A, Glover M, Walker N, et al. Recruiting Pregnant Indigenous Women Who Smoke into a High Contact Incentivized Cessation Trial: A Feasibility Study. *Nicotine and Tobacco Research*. 2016;18:2036-40.

35. Hikuroa E, Glover M. Reducing smoking among Indigenous Nursing Students using incentives/Te whakaheke I te kai paipa I waenga I nga tapuhi tangata whenua ma te whakamahi whakawhiwhinga. *Nursing Praxis in New Zealand*. 2017;33:17-27.

36. Greenhalgh E, van der Sterren A, Knoche D, & Winstanley, MH 8.7 *Morbidity and mortality caused by smoking among Aboriginal peoples and Torres Strait Islanders*. Melbourne: Cancer Council Victoria, 2016.

37. Stevenson L, Campbell S, Bohanna I, Gould GS, Robertson J, Clough AR. Establishing Smoke-Free Homes in the Indigenous Populations of Australia, New Zealand, Canada and the United States: A Systematic Literature Review. *International Journal of Environmental Research and Public Health.* 2017;14(11). doi: 10.3390/ijerph14111382

38. Australian Government. *2013 National Drug Strategy Household Survey report.* Australian Institute of Health and Welfare. 2014.

39. Physicians for a Smoke-Free Canada. *Smoking among Aboriginal Canadians*. Physicians for a Smoke-Free Canada 2013.

40. Greenhalgh E, Bayly, M, & Winstanley, MH. I*nternational comparisons of prevalence of smoking Melbourne*: Cancer Council Victoria; 2015.

41. Ministry of Health. *Annual Update of Key Results 2015/16: New Zealand Health Survey.* Ministry of Health, 2016.

42. *Tobacco in Australia: Facts and Issues*: Melbourne Cancer Council Victoria; 2016 [31/5/2017]. Available from: **http://www.tobaccoinaustralia.org.au/chapter-8-aptsi**.

43. Department of Health. *Tackling Indigenous Smoking (TIS) - National Statistics 2017* [31/5/2017]. Available from: **http://www.health.gov.au/internet/main/publishing.nsf/content/indigenous-tis-statistics.**

44. Australian Institute of Health and Welfare. *Housing circumstances of Indigenous households: tenure and overcrowding.* Australian Institute of Health and Welfare Canberra. 2014.

45. Cancer Council. *Tobacco in Australia: Facts and Issues*. 2011.

46. Campbell S, Bohanna I, Swinbourne A, et al. Stages of change, smoking behaviour and readiness to quit in a large sample of indigenous Australians living in eight remote north Queensland communities. *International Journal of Environmental Research and Public Health*. 2013;10:1562-71.

47. Australian Bureau of Statistics. *The Health and Welfare of Australia's Aboriginal and Torres Strait Islander Peoples, 2008*. Canberra: Australian Bureau of Statistics; 2008.

48. Australian Bureau of Statistics. *National Aboriginal and Torres Strait Islander Social Survey, 2014-15*. Canberra; 2016.

49. Askew DA, Togni SJ, Schluter PJ, et al. Investigating the feasibility, acceptability and appropriateness of outreach case management in an urban Aboriginal and Torres Strait Islander primary health care service: a mixed methods exploratory study. *BMC Health Services Research*. 2016;16:178.

50. Marsh J, McNeill A, Lewis S, et al. Protecting children from secondhand smoke: a mixed-methods feasibility study of a novel smoke-free home intervention. *Pilot and Feasibility Studies*. 2016;2:53.

51. Graham VE, Campbell S, West C, et al. Substance misuse intervention research in remote Indigenous Australian communities since the NHMRC 'Roadmap'. *Australian and New Zealand Journal of Public Health.* 2017;10.1111/1753-6405.12691.

52. Australian Government. *Stronger Futures in the Northern Territory Act 2012*.

53. Australian Human Rights Commission. *Social Justice Report 2007*.

54. Aboriginal Resource and Development Services Aboriginal Corporation. *Staff Training Guide*. 2016:18.

55. Apelberg BJ, Hepp LM, Avila-Tang E, et al. Environmental monitoring of secondhand smoke exposure. *Tobacco Control*. 2013;22:147-55.

56. Braun V, Clarke V. Using thematic analysis in psychology. *Qualitative Research in Psychology*. 2006;3:77-101.

57. Clough AR, MacLaren DJ, Robertson JA, et al. Can we measure daily tobacco consumption in remote indigenous communities? Comparing self-reported tobacco consumption with community-level estimates in an Arnhem Land study. *Drug and Alcohol Review*. 2011;30:166-72.

58. Stevenson LC, Bohanna I, Robertson JA, et al. Aboriginal people in remote communities in Arnhem Land (Northern Territory) restrict their smoking in some environments: Implications for developing and implementing interventions to reduce exposure to environmental tobacco smoke. *Drug and Alcohol Review*. 2013;32:627-30.

59. Semple S, Apsley A, Azmina Ibrahim T, et al. Fine particulate matter concentrations in smoking households: just how much secondhand smoke do you breathe in if you live with a smoker who smokes indoors? *Tobacco Control*. 2015;24:e205-e11.

60. Association RH. *Smoke-free Housing for Property Managers and Condo Associations Washington*: Respiratory Health Association; 2017 [12 July 2017]. Available from: **http://www.lungchicago.org/smoke-free-housing-managers/.**

61. Robertson J, Pointing BS, Stevenson L, et al. "We made the rule, we have to stick to it": towards effective management of environmental tobacco smoke in remote Australian Aboriginal communities. *International Journal of Environmental Research and Public Health*. 2013;10:4944-66.

62. Clough AR, Guyula T, Yunupingu M, et al. Diversity of substance use in eastern Arnhem Land (Australia): patterns and recent changes. *Drug and Alcohol Review*. 2002;21:349-56.

63. Clough AR, Bailie R, Burns CB, et al. Methods: Validity and utility of community health workers' estimation of kava use. *Australian and New Zealand Journal of Public Health*. 2002;26:52-7.

64. Clough AR, D'Abbs P, Cairney S, et al. Emerging patterns of cannabis and other substance use in Aboriginal communities in Arnhem Land, Northern Territory: a study of two communities. *Drug and Alcohol Review*. 2004;23:381-90.

65. Cerbone FG, Larison CL. A bibliographic essay: the relationship between stress and substance use. *Substance Use and Misuse*. 2000;35:757-86.

66. Robertson JA, Conigrave KM, Ivers R, et al. Translation of tobacco policy into practice in disadvantaged and marginalized subpopulations: a study of challenges and opportunities in remote Australian Indigenous communities. *Health Research Policy and Systems*. 2012;10:23.