



# Monitoring trends in the prevalence of petrol sniffing in selected Australian Aboriginal communities 2011-2014: Final Report

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## Abbreviations

APY Lands	Anangu Pitjantjatjara Yankunytjatjara Lands
CAYLUS	Central Australian Youth Link Up Service
DoHA	Department of Health and Ageing (now Department of Health)
EK or E Kimberley	East Kimberley
FNQ	Far North Queensland
HP	Horsepower
LAF	Low aromatic unleaded fuel
NE Arnhem	North East Arnhem Land
NT	Northern Territory
PULP	Premium Unleaded Petrol
PSPP	Petrol Sniffing Prevention Program
QLD	Queensland
RASAC	Regional Anangu Service Aboriginal Corporation
RJCP	Remote Jobs in Communities Program
RFT	Request for Tender
RULP	Regular Unleaded Petrol
SA	South Australia
WA	Western Australia

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## 2 Executive summary

This report is the final report from a study commissioned by the (then) Australian Government Department of Health and Ageing (DoHA) with a view to monitoring the impact of introducing low aromatic unleaded fuel (LAF) as a means of preventing petrol sniffing in Indigenous communities in remote and regional Australia<sup>1</sup>. The study commenced in 2011, with data collection concluding in December 2014. It included 41 communities, each of which was visited twice in the course of the study. The study was conducted by the Menzies School of Health Research, Darwin, in partnership with Bowchung Pty Ltd, Canberra, under a Consultancy Agreement with the Department.

In the interests of respecting confidentiality and privacy, no specific individuals or communities are identified in this report.

The key conclusion of the study is that the introduction and use of LAF on a regional basis is associated with a continuing decline in numbers of young people in remote communities sniffing petrol. In the 41 communities, the number of people sniffing petrol declined from 289 at the time of the first data collection (2011-12) to 204 at the time of the second data collection (2013-14) – a fall of 29.4%. Over the longer term, the decline in petrol sniffing has been even more marked. In 17 communities from the study sample, comparable data is also available from two earlier studies, conducted in 2005-06 and 2007-08 respectively. In these 17 communities, the number of people sniffing petrol has fallen from 647 in 2005-06 to 78 in 2013-14, a reduction of 87.9%.

In addition to an overall decrease in the prevalence of sniffing, people who do sniff tend to do so less frequently. This is at least partially attributable to the fact that the replacement of regular unleaded petrol (RULP) with LAF makes the former more difficult to obtain. The decrease in the overall numbers of people sniffing, and in frequency of sniffing, suggest that less harm is being caused by petrol sniffing in Australia's remote and rural Indigenous communities than previously.

At the same time, it is clear that many of these communities face serious problems associated with alcohol and cannabis misuse. While there is evidence of an improvement in services available to address petrol sniffing, many of the programs to provide youth, recreation, employment and training opportunities face continuing challenges.

### 2.1 A note on terminology

Throughout this report, we refer to the vehicle fuel developed as a deterrent to petrol sniffing as 'low aromatic unleaded fuel' or LAF. Since its introduction in 2005, LAF has been popularly referred to in the media and elsewhere as 'Opal', the name given to it by

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<sup>1</sup> Under a change of government that followed the 2013 federal election in Australia, responsibility for the project was transferred to the Petrol Sniffing Strategy Section in the Department of the Prime Minister and Cabinet.

BP, the company that initially developed and marketed LAF. Today, however, other companies are also producing LAF, and the name Opal is no longer warranted as a generic label. For this reason, we use the generic term LAF, except when – as on some occasions in Chapter 6 below – we are reporting the comments of respondents who are specifically referring to Opal fuel.

## 2.2 Methods

The study collected both quantitative and qualitative data. The method used for collecting quantitative data builds on earlier studies of prevalence and patterns of petrol sniffing in Indigenous communities conducted from the 1990s by Nganampa Health in the APY Lands of South Australia, and studies of the rollout of LAF in Indigenous communities conducted by d’Abbs and Shaw in 2005-06 and 2007-08. The method involves a systematic use of key informants to derive prevalence estimates.

Qualitative data was gathered by fieldworkers in communities through semi-structured interviews and observations. Topics covered included people’s opinions about the effects and impact of LAF, availability of services to address problems associated with petrol sniffing, availability of programs and opportunities relating to employment, recreation and training, and evidence of other drug use in the community, including alcohol, cannabis and other illicit drugs.

As already stated, the study is based on a sample of 41 communities, each of which was visited twice during the four-year period of the study (2011-2014). In 2013, an additional 12 communities were added to the main sample at the request of the Department of Health and Ageing. This report presents findings from the 41 communities in the original sample. Data collected for the 12 additional communities is included as Appendix Two.

The 17 communities in the main sample for which comparable quantitative data on prevalence and patterns of petrol sniffing are also available from two earlier studies, conducted in 2005-06 and 2007-08 respectively, provide a valuable opportunity to examine trends over a longer period, and are therefore examined in this report as a separate sub-sample.

As a cautionary note, we should point out that, while the communities in this study are drawn from different regions throughout Australia, they do not include all communities in which petrol sniffing is known to occur. The numbers reported here should therefore not be read as a census of the total number of people in communities sniffing petrol or other volatile substances.

In 2011, when the study began, LAF was available in 30 of the 41 communities in the sample (see Table 9-2 in the report). During the course of the study it became available in one more community. Amongst the ten remaining communities that did not stock LAF by 2013-14, seven had no fuel outlet, and the remaining three stocked RULP.

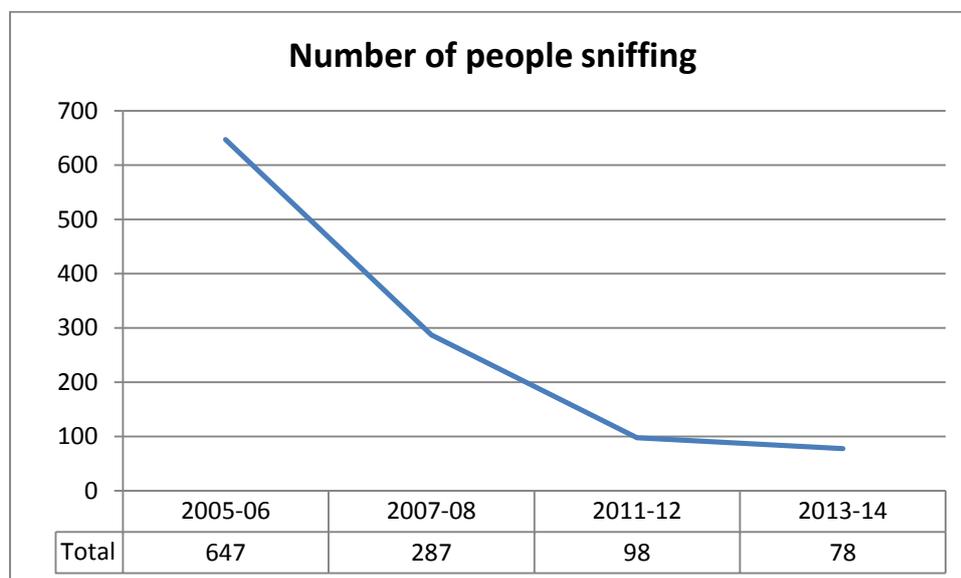
For the purposes of the study, ‘current sniffers’ were defined as people who were believed to have sniffed petrol or other volatile substances within the preceding six months. This category was further subdivided into three: occasional sniffers were those who had sniffed petrol within the last six months, with no evidence of regular use, regular sniffers were those who had sniffed regularly, but did not meet the criterion for the third category – heavy use – which was to have sniffed at least once a week whenever petrol (or other volatile substances) were available.

### 2.3 Prevalence and patterns of sniffing

Prevalence and patterns of sniffing are examined from two perspectives. Firstly, the sub-sample of 17 communities for which data is available at four time-points is used to report on long-term trends in prevalence. Secondly, prevalence and patterns of sniffing in the 41 communities that constituted the present study are described.

The decline in the numbers of people sniffing petrol in the 17 communities for which longer term data are available is shown graphically in Figure 2-1. As the figure shows, the downward trend, although slowing recently, has been sustained over the period covered.

**Figure 2-1: Number of people sniffing in 17 communities 2005-06 to 2013-14**



Trends in individual regions are more varied, reflecting local factors, including the progressive regional rollout of LAF, which commenced in 2005.

In the 41 communities comprising the main sample, the total number of people reported as sniffing declined from 289 in 2011-12 to 204 in 2013-14. Again, these totals are products of several region-specific trends.

At both survey times, three out of four people sniffing were male, with the greatest proportion – a little over half – aged 15-24 years. One cause for concern is evidence of an increase in very young people – 5-9 years – sniffing petrol. Though small in both surveys, the number increased from four in 2011-12 to eight in 2013-14. The reasons for this increase are not apparent, and it could represent a temporary fluctuation rather than a trend, especially as prevalence of petrol sniffing traditionally exhibits short-term fluctuations in many communities. Nonetheless, the issue warrants ongoing monitoring.

A little over half of those sniffing at both survey times did so occasionally. However, between 2011-12 and 2013-14 the proportion of ‘heavy’ sniffers declined from 27.4% to 19.6%, while that of ‘regular’ sniffers rose by a corresponding amount – from 19.2% to 26.5%. This is clearly a welcome development (though again, it may represent fluctuations rather than a trend).

## **2.4 The place of LAF in community responses to petrol sniffing: a qualitative analysis**

The purpose of conducting qualitative interviews and other fieldwork in communities was to gain a greater understanding of the different contexts within which LAF has been introduced, and the ways in which the presence of LAF interacts with other factors – such as recreational and employment opportunities – to affect patterns of petrol sniffing and other drug use.

### **2.4.1 Perceptions of LAF**

In a majority of communities, the introduction of LAF was reported as being widely supported. As one older lady said: ‘Opal fuel? Everyone stopped because of that. It’s really good.’ Another community resident said: ‘Opal fuel – everyone is really happy.’ In some communities, however, support was qualified in one of two ways: frustration caused by the continuing availability of RULP at nearby, accessible outlets, and concerns about the perceived adverse impact of LAF on engines, especially small engines such as outboard motors, motor cycles, lawn-mowers and whipper-snippers. In some communities, no such complaints were voiced, and some people specifically stated that LAF had not harmed their engines. But in others, it was apparent that negative perceptions of LAF had affected its uptake in the community.

### **2.4.2 Use of other inhalants**

The primary focus of the study is petrol sniffing, in part because LAF is a measure designed to prevent petrol sniffing, and in part because, in remote and regional Indigenous communities in Australia - in contrast to urban centres - petrol has been the main volatile substance used as a recreational inhalant. Other volatile substances are, however, often available in communities and, inhalant misuse being an opportunistic activity, are sometimes used. This study produced some anecdotal reports of other volatile substances being used on a small scale, but was not designed to quantify these

patterns. In most communities where sniffing had occurred, several kinds of other inhalant were also mentioned. The most widely used was RULP, with reports of its use in 24 of the 41 communities, followed by deodorants (17 communities), glue (9 communities) and aerosol paints (9 communities). In addition, a range of other inhalants were mentioned between one and three times, including premium unleaded petrol (specifically mentioned in three communities; it is also possible that some of the petrol sniffed and identified as RULP may in fact have been premium). There were also two reports of would-be sniffers adding polystyrene to Opal in the hope of becoming intoxicated.

### **2.4.3 Use of other substances**

In many communities, petrol sniffing and other inhalant use had come to be seen as a less troubling issue than alcohol and cannabis. In 21 of the 41 communities visited, alcohol abuse was described by informants as being a major concern, associated with grog-running, binge-drinking, violence and deaths. Cannabis problems were even more pervasive, being cited in 27 communities (65.9%) as a cause of major problems, including drug-induced psychoses, fighting over scarce supplies, and assaults on old people in search of money to buy cannabis. Concern at the community level with cannabis use appears also to be growing. In our 2007-08 study of the impact of LAF, concerns about cannabis were raised in just three out of the 31 communities studied (i.e. 9.7%). In 2011-12 in the present study, similar concerns were raised in 24 of 41 communities involved (58.5%), and in 2013-14, in 26 communities (63.4%).

In most communities, both alcohol and cannabis are available or accessible. In 14 communities, fieldworkers reported high levels of problems associated with both alcohol and cannabis. In four communities, fieldworkers were told that ice was present in the community. However, in no instances did the fieldworkers encounter first hand evidence of any usage of 'ice'.

The evidence regarding drug substitution was equivocal. In around one-in-three communities, fieldworkers were told that the decline in petrol sniffing appeared to have led to an increase in use of cannabis, alcohol and/or other drugs. A similar proportion reported hearing no evidence of such substitution. In some instances, growth in cannabis use preceded the decline in petrol sniffing. In general, use of alcohol, cannabis and other drugs appeared to be a product of a mix of social, cultural and economic factors, rather than any single cause.

### **2.4.4 Access to services**

In recent years there has been an increase in accessibility of qualified services to address petrol sniffing in communities ('qualified' here referring to persons with training in mental health and/or substance misuse). The proportion of communities with access either to a regular visiting service or an on-site service has risen from less than one quarter in 2007-08 to more than 50% in 2013-14. Similarly, the proportion of

communities showing evidence of having formulated and implemented a strategic approach to petrol sniffing rose from 41.5% in 2011-12 to 51.2% in 2013-14.

The quality of youth programs and services, and/or organised sport and recreational activities, varied across communities, from being virtually non-existent in 2013-14 (4 communities) to apparently adequately funded and satisfactory (9 communities), with the majority (26 communities) falling in between these two extremes. In the latter, programs and some facilities were operational, but beset by problems relating to funding, personnel and/or the facilities themselves.

Similarly with employment and training programs, in most communities in the sample, attempts to generate employment opportunities for young people were in many instances plagued by one or more of the following problems:

- shortage of training programs;
- shortage of employment opportunities;
- where employment opportunities are in principle available – for example, in nearby mines – disqualification of otherwise eligible young people because of issues such as prior drug offences, current drug use, or licence cancellations;
- absence of basic literacy and numeracy skills; and
- lack of motivation on the part of young people.

In short, the fieldwork visits suggested that many communities have benefited significantly as a result of petrol sniffing declining following the introduction of LAF. At the same time, it was also clear that most of these communities face serious problems associated with alcohol and cannabis misuse. While there was evidence of an improvement in services available to address petrol sniffing, programs to provide youth, recreation, employment and training opportunities continue to struggle with a variety of constraints.

### 3 Introduction

This report is the final report from a study commissioned by the (then) Australian Government Department of Health and Ageing (DoHA) with a view to monitoring the impact of introducing low aromatic unleaded fuel (LAF) as a means of preventing petrol sniffing in Indigenous communities in remote and regional Australia<sup>2</sup>. The study commenced in 2011, with data collection concluding in December 2014. It has been conducted by the Menzies School of Health Research, Darwin, in partnership with Bowchung Pty Ltd, Canberra, under a Consultancy Agreement with the Department.

Under the original Request for Tender (RFT) for the project, issued in 2010, the consultants were required to 'develop and implement a data collection tool to collect information on the prevalence of petrol sniffing, including any unintended consequences that may relate to the expanded supply of low aromatic unleaded fuel in Indigenous communities in regional and remote Australia' (Commonwealth Department of Health and Ageing, 2010).

The data collection tool was required to serve the following purposes:

1. Determine the prevalence of petrol sniffing in Indigenous communities in areas where low aromatic unleaded fuel is available;
2. Identify and measure (where possible) any unintended consequences of the rollout of low aromatic fuel, e.g., geographical displacement, substance transference and the trafficking of petrol into communities;
3. Provide information on the extent of individual and community level behavioural change attributed to the availability of low aromatic fuel;
4. Identify and describe the other factors that have contributed to the prevalence of petrol sniffing and any other outcomes e.g. Volatile Substance Abuse Management Plans, youth diversionary activities, night patrols, community leadership and community driven initiatives;
5. Determine the impact of low aromatic unleaded fuel on the prevalence of petrol sniffing and any other outcomes in the selected communities; and
6. Describe the 'key learnings' from each data collection, and discuss the findings and outcomes from the project. (Commonwealth Department of Health and Ageing, 2010).

Preliminary findings from the present study were published in 2013 as [\*Monitoring trends in prevalence of petrol sniffing in selected Aboriginal communities: an interim report\*](#) (d'Abbs & Shaw, 2013). In addition, annual Progress Reports have been prepared by the consultants for the Department, but not for publication, since they contain information about specific identifiable communities. Findings pertaining to specific

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<sup>2</sup> Under a change of government that followed the 2013 federal election in Australia, responsibility for the project was transferred to the Petrol Sniffing Strategy Section in the Department of the Prime Minister and Cabinet.

communities have also been reported back to those communities throughout each phase of the project.

In this report, project details and findings are presented in the following sections:

- Project design and research methods
- Prevalence and patterns of sniffing
- The place of low aromatic unleaded fuel in community responses to petrol sniffing: qualitative analysis
- Conclusions.

In the interests of respecting confidentiality and privacy, no specific individuals or communities are identified in this report.

## 4 Project design and research methods

This study draws on qualitative and quantitative information to describe trends in the prevalence and patterns of petrol sniffing in communities, and in the availability and accessibility of services and opportunities that help to prevent petrol sniffing and other drug use. In this chapter we describe the methods used to collect quantitative and qualitative data, the sampling strategy, and procedures for data analysis. We also compare the sample used for the present study with those adopted for earlier studies of the rollout of LAF, and generate a sub-sample of 17 communities for which comparable data is available at four points in time: 2005-06, 2007-08, 2011-12 and 2013-14.

### 4.1 Data collection

#### 4.1.1 Quantitative data

For many years, attempts to address petrol sniffing in remote Indigenous communities were hampered by a lack of reliable data (Commonwealth of Australia Senate Select Committee on Volatile Substance Fumes, 1985). In principle, two approaches are available for documenting patterns of petrol sniffing at the community level: self-report surveys or methods based on key informants. The survey self-report method has been used successfully in a few studies of petrol sniffing in single communities (e.g. Burns, d'Abbs, & Currie, 1995). However, it is too time-intensive for a more broadly based data collection project, particularly in light of the fact that petrol sniffing is usually a clandestine activity, conducted at night by young people who are often not readily accessible during the day.

Key informant methods can in turn be of two kinds: in the first, informants are asked to give estimates of the numbers of people sniffing, in terms of specified usage levels and/or age and gender groups. For example: how many people are there sniffing at regular levels in this community aged between 10 and 14 years? In the second, informants serve as 'proxy respondents' (Nelson, Longstreth, Koepsell, & van Belle, 1990), who are presented with a list of names of community residents and asked to identify the petrol sniffing status of individuals on the list. The 'key informant estimates' approach is logistically simple and economical, especially when conducted via telephone or email. Anecdotal evidence, however, suggests that in instances where more than one informant is used in a community, the method can yield wildly discrepant estimates, and also tends to result in under-estimates of numbers of people who sniff.

The first rigorous method for monitoring petrol sniffing in remote communities was pioneered in the 1990's by an Aboriginal community-controlled health service - Nganampa Health - using the 'proxy respondents' method. Nganampa's method relied on a data collector sitting down with a population list of people aged 10-39 in each community, and going through each name on the list with informants such as Aboriginal Health Workers. The informant would identify which people sniffed, and how often they

sniffed. This process was repeated with three different informants in each community, and results collated to produce a final list of people who sniffed petrol.

In 2005, in conjunction with the regional rollout of LAF, the authors of the present report were engaged by DoHA to collect baseline data on prevalence of petrol sniffing in 88 communities using or eligible to use LAF, and to devise a data collection method and instruments suitable for ongoing monitoring<sup>3</sup>. In 2008, 20 of these communities were re-visited as part of an evaluation of the impact of LAF<sup>4</sup>. The method developed in the course of these studies was based on the 'proxy respondents' method pioneered by Nganampa Health. However, in conducting these studies we also encountered a number of problems with population lists. In particular, in some communities accurate lists were not available. Secondly, in the case of large communities they can be too long to expect 'proxy respondents' to read right through them. Finally, although the method does not entail recording unit record data, it is seen as problematic by research ethics committees. For all of these reasons, population lists were not used in the present study, and a data collection method that combined elements of both the 'proxy respondents' and the 'key informant estimates' approaches was developed.

In this procedure, fieldworkers began with a series of categories, chosen not only to create mutually exclusive fields, but also to accord with the ways in which people on the ground in communities thought about people's ages. The categories used were as follows:

- Primary school aged girls
- Primary school aged boys
- Young women - high school, too young to go to pub
- Young fellas - high school, too young to go to pub
- Older women - people who can buy grog
- Older men - who can buy grog.

A fieldworker would first ask 'Can you think of any little girls - primary school kids - who sniff? If a person was identified, their initials only were recorded. For any person identified as sniffing, the fieldworker would then ask the informant to identify the person's age and sniffing frequency - using a frequency matrix described below. The fieldworker would also record the first names and initials of identified users in order to compare the list of persons identified with those identified by other informants. Data

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<sup>3</sup> The report of this study, entitled Data Collection for the Petrol Sniffing Prevention Program (d'Abbs & Shaw, 2007), was not published in full because it contained information about specific, identifiable communities. However, a summary report (d'Abbs and Shaw, 2007a) with de-identified data was previously made available on the DoHA website and is now available on the PM&C website. The summary is also reproduced in this report in Appendix One.

<sup>4</sup> The results of this study were reported in d'Abbs and Shaw (2008a). Again, because individual communities could be identified, the report has not been released in full, although a summary of findings was published (d'Abbs and Shaw, 2008b). This summary is also reproduced in Appendix One and is available on the PM&C website.

collectors were instructed that if two or more people identified a person as a person who sniffed petrol, then that identification was considered valid. If only one person identified someone, but they were considered to be in an extremely good position to know – for example a family member – then that identification was also considered valid. The same rules applied for establishing the frequency with which people sniffed.

Once numbers of people sniffing had been computed by this procedure, the data collector aggregated the numbers in each age x gender x frequency category, and entered the aggregates into a table. This was the data taken from the community; sheets with first names and initials were not taken from the community. Instructions issued to fieldworkers are included in this report as Appendix Four.

Sniffing frequency categories used in the present study are the same as those used through all of the recent studies of the LAF rollout, from 2005 onwards, and are adapted from those developed by Nganampa Health in their earlier studies. The categories and associated definitions are shown in Table 4-1. As the table indicates, the basis for categorizing a person is their sniffing-related behaviour over the six months prior to data collection.

**Table 4-1: Definitions of sniffing frequency categories**

<b>Category</b>		<b>Definition</b>
Non-sniffer		Not known to have sniffed petrol or any other inhalant in past 6 months.
Current sniffer	Experimental/occasional	Believed to have sniffed petrol or other inhalant in past 6 months, but no evidence of regular use.
	Regular	Believed to have sniffed petrol or other inhalant regularly over past 6 months, but does not meet criterion of heavy use (i.e. at least once a week).
	Heavy	Has sniffed petrol or other inhalants at least weekly (whenever inhalants are available), over past 6 months.

### 4.1.2 Qualitative data

Qualitative data was collected by fieldworkers' observations and interviews. Topics covered included:

- Community views regarding impact of LAF in the community;
- Anecdotal reports of use of other substances such as marijuana (and any information on individuals who have changed their habits from sniffing petrol to smoking marijuana or other drug use);
- Nature and accessibility of youth, recreation, and alcohol and other drug services; and
- Nature and use of employment and training services.

Information collected was entered into a separate textual file for each interview. The interview schedule used for collecting qualitative data is shown in Appendix Four.

### 4.1.3 Data collection: a note on some practical issues

Data collection in the field rarely conforms to the tidy logic of research reports, and while the procedures outlined above worked well enough, they did not insulate the research team from ambiguities and uncertainties. We think it important to acknowledge these. The following fieldworker's note illustrates one such issue:

*A number of people told me about an incident the previous month when a group of three or four boys aged around seven, and eight boys around eleven and twelve, had got access to fuel, set fire to various things and to themselves, and had been seen sniffing. There were differing reports about where the fuel had come from (some said from a motorbike and a chainsaw), whether or not it was unleaded petrol or Opal and whether kids were actually sniffing or were just mimicking sniffing.'* (Fieldworker's report, 2014)

This incident precipitated a community meeting about sniffing – but no one was perfectly sure that the boys had been sniffing, or just mimicking sniffing. The question that arose for the data collector was whether to count this as 'sniffing', and add those boys to the count for the community. In this case the fieldworker included them because she felt it was better to err on the side of caution. If they had been mimicking, it was nonetheless suggestive of sniffing in the community.

However the same community produced the following feedback:

*Last week a group of girls and boys – eight or nine, aged ten or eleven - kept on getting into a house to get spray paint, maybe sniffing.*

This report was not counted because although it was probably reliable (the source was the school Principal and the house in question belonged to a teacher), the allegation was not corroborated by others, and there was a possibility of double counting, as the youths concerned were in the same age group as those implicated in the first report.

Another data quality problem arose when it proved impossible to obtain sufficient detail on the gender, age and/or frequency of sniffing. This tended to be a factor in earlier data collection periods where some communities had very high numbers of people sniffing, and no community members had sufficient knowledge to account for every person sniffing. As a result of this variability, the tabulation of genders, frequencies and ages of people sniffing are sometimes incomplete.

A third issue that emerged in the course of the project was evidence about the use of volatile substances other than petrol. As Table 4-1 indicates, fieldworkers were asked to gather information on 'petrol or other inhalant' use, without systematically distinguishing between the former and the latter. This was the data collection policy because, in remote Indigenous communities – in contrast to towns and cities – the volatile substance that has historically dominated has been petrol, and LAF has been designed as a deterrent to the use of petrol as an inhalant. Anecdotally, fieldworkers in some communities reported accounts of volatile substances other than petrol being used, and in the latter part of the project we asked fieldworkers to document any such accounts as fully as possible. The results are reported below in Chapter Six. In any future research, we would recommend more systematic monitoring of use of other volatile substances.

## 4.2 Sampling

For analytical purposes, the sampling unit in this study is the community rather than the individual. The initial sample for the present project when it commenced in 2011 comprised 41 communities, selected by officers from DoHA in consultation with ourselves, on the basis of meeting one of two criteria; first, they were suited to monitoring the impact of LAF because 'pre LAF' data on prevalence and patterns of petrol sniffing were available; second, anecdotal evidence suggested that petrol sniffing was an emerging phenomenon in the community.

Under the original study design, each of the 41 communities was to be visited twice in the course of the study: 21 communities in 2011 and 2013, and 20 communities in 2012 and 2014. In 2013, while the study was underway, we were asked by DoHA to add another 15 communities to the sample in order to collect baseline data prior to an anticipated expanded rollout of LAF. In the event, three of the 15 communities declined to participate, leaving an additional 12 communities to be added to the original sample, bringing the total to 53 communities.

Table 4-2 below lists all of the communities in both the initial (N=41) and expanded (N=53) samples, as well as the regions in which they are located.

**Table 4-2: Initial and expanded sample of communities, by region**

Region	Regional ID	Initial sample*	Expanded sample**
Far Nth Qld	1	Aug-11	Oct-13
	2	Oct-12	Aug-14
	3	Oct-12	Aug-14
	4		Sep-13
	5		Sep-13
	6		Sep-13
	7		Sep-13
	8		Sep-13
	9		Oct-13
	10	Nov-12	Jun-14
	11	Oct-11	Aug-13
	12		Sep-13
<b>Total</b>		<b>5</b>	<b>12</b>
NT (Barkly)	1		Aug-13
	2	Oct-12	Jul-14
	3	Oct-12	Jun-14
	4	Oct-12	Jun-14
	5	Oct-11	Oct-13
<b>Total</b>		<b>4</b>	<b>5</b>
NT (Central Aust.)	3	Oct-12	Aug-14
	4		Aug-13
	6	Oct-11	Aug-13
	8	Aug-11	Aug-13
	9	Jun-11	Jun-13
	12	Aug-11	Aug-13
13	Sep-11	Jul-13	
<b>Total</b>		<b>6</b>	<b>7</b>
NT (E. Arnhem)	1	Nov-12	Sep-14
	2	Oct-12	Jul-14
	3	Oct-12	Jul-14
	5	Sep-11	Sep-13
<b>Total</b>		<b>4</b>	<b>4</b>
NT (Katherine reg.)	1	Oct-11	Aug-13
	2	Sep-11	Aug-13
	3	Aug-11	Aug-13
	4	Sep-11	Oct-13
	5		Sep-13
	6	Aug-11	Oct-13
<b>Total</b>		<b>5</b>	<b>6</b>
NT (Top End)	1	Sep-11	Oct-13
	2	Sep-11	Jun-14
	8	Oct-12	Sep-14
<b>Total</b>		<b>3</b>	<b>3</b>
SA	1	Aug-12	Aug-14
	2	Sep-11	Sep-13
	5	Oct-12	Aug-14
	6	Oct-12	Sep-14
<b>Total</b>		<b>4</b>	<b>4</b>
WA (E. Kimberley)	1	Sep-11	Aug-13
	4	Aug-12	Jul-14
	5	Sep-11	Aug-13
	6	Jul-12	Jul-14
<b>Total</b>		<b>4</b>	<b>4</b>

Region	Regional ID	Initial sample*	Expanded sample**
WA (Goldfields)	1	Nov-11	Sep-13
	3		Aug-13
	4		Oct-13
	5	Nov-12	Sep-14
	<b>Total</b>	<b>2</b>	<b>4</b>
WA (Ngaanyatjarra)	1	Sep-11	Oct-13
	2	Sep-12	Jun-14
	3	Aug-11	Oct-13
	9	Sep-12	Sep-14
	<b>Total</b>	<b>4</b>	<b>4</b>
<b>N</b>	<b>41</b>	<b>53</b>	

\* Showing dates of first round of data collection

\*\* Showing dates of second round of data collection in initial sample, first round in expanded sample.

(As a cautionary note, we should point out that, while the 53 communities represent different regions, they do not include all communities in which petrol sniffing is known to occur. The numbers reported here should therefore not be read as a census of the total number of people in communities sniffing petrol or other volatile substances.)

#### 4.2.1 Relationship between current and previous samples

As mentioned earlier, the current study builds on two earlier studies, conducted in 2005-07 and 2007-08 respectively. As a result, in 17 communities, prevalence and patterns of petrol sniffing have been documented on four occasions – twice in the present study, and twice in preceding studies. Table 4-3 lists these communities.

A more detailed table, listing all of the 80 communities that have been included in one or more studies, and the occasions on which data has been collected, is at Appendix Three, Table 9-1. In this report, these 17 communities have been analysed as a sub-sample to examine trends in prevalence of petrol sniffing over the total period covered by the studies<sup>5</sup>.

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<sup>5</sup> In an earlier, Interim Report, we reviewed trends in petrol sniffing prevalence over the four time periods using a sample of 15 communities (d'Abbs & Shaw, 2013), rather than the 17 being used here. The reason for the discrepancy is that in two communities, data is incomplete, however it is adequate for present purposes, so we have now included these two in the sample.

**Table 4-3: Communities for which data is available on four occasions (N=17)**

Region	Community ID
Far Nth Qld	1
	10
	11
NT (Central Aust.)	6
	8
	9
NT (E. Arnhem)	1
	2
NT (Top End)	1
SA	1
	2
	5
	6
WA (E. Kimberley)	1
WA (Ngaanyatjarra)	1
	2
	9

### 4.3 Availability of LAF and RULP in sample communities

In 2011, when this study began, LAF was available in 30 of the 41 communities (73.2%) being studied. By 2013-14, the number had risen to 31 – the net gain of 1 being a result of two communities abandoning LAF in the intervening period and three new ones starting to stock it. Of the two outlets that stopped stocking LAF during the course of the study, one did so because of a perceived commercial disadvantage vis a vis another outlet, while the other case was a response to a belief in the community that LAF was harmful to boat engines.

**Table 4-4: Availability of LAF and RULP in sample communities in 2013-14**

		RULP available		Total
		Yes	No	
LAF available	Yes	2	29	31
	No	3	7	10
Total		5	36	41

As Table 4-4 shows, in two communities where LAF was available in 2013-14, RULP was also sold. By contrast, in seven communities neither LAF nor RULP was available<sup>6</sup>.

#### 4.4 Data analysis

Quantitative data relating to the 41 communities in the original study design were analysed by means of descriptive statistics, using statistical analysis package IBM SPSS Version 22. Qualitative data for the same sample were analysed by means of a combination of *a priori* themes derived from questions included in the Community Report Template – such as ‘Feedback on the impact of Opal fuel on engines’ – and inductive codes generated by examining the data. Qualitative analysis was facilitated by using software HyperResearch Version 3.7.2<sup>7</sup>. The 12 communities that were added to the sample in 2013 (and hence only visited once) have not been included in the analysis; however, quantitative data from these communities is included here in Appendix Two.

As mentioned above, a sub-sample of 17 communities for which data are available for four points in time between 2005-07 and 2013-14, was also analysed to identify trends in prevalence of petrol sniffing.

#### 4.5 Ethics approval

Ethics approval for the project was obtained from the joint Human Research Ethics Committee of the Northern Territory Department of Health and Menzies School of Health Research.

#### 4.6 Summary

The present study builds methodologically on earlier studies of prevalence and patterns of petrol sniffing in Indigenous communities, in particular, surveys of petrol sniffing conducted from the 1990s by Nganampa Health in the APY Lands of South Australia, and studies of the rollout of LAF in Indigenous communities conducted by d’Abbs and Shaw in 2005-06 and 2007-08.

All of these studies have used variants of the ‘proxy respondents’ approach to estimating sniffing prevalence and patterns. This involves asking three or more knowledgeable residents of each community to identify people who are sniffing petrol, either from a list of names or according to given age-and-gender categories. Lists of people sniffing generated through this procedure are used to derive aggregates of the numbers of people sniffing in specified age and gender categories, these aggregates being further broken down into specified categories of sniffing frequency.

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<sup>6</sup> In the 12 communities that were added to the sample in 2013, LAF was available in only two (although it has since been introduced into a third community), reflecting their reason for being added to the sample: to gather baseline data. The 12 communities have been kept separate from the main analysis for purposes of comparability over time.

<sup>7</sup> [www.researchware.com](http://www.researchware.com).

Quantitative estimates of sniffing prevalence and patterns were complemented by qualitative data, collected by fieldworkers from semi-structured interviews and observations in sampled communities, regarding qualitative aspects of LAF (e.g. its acceptability, perceived impact on engines) and aspects of community life relevant to addressing petrol sniffing at a local community level (e.g. accessibility of youth programs and range of activities offered).

The study design began with an initial sample of 41 communities, with the four-year study timetable providing for each community in the study to be visited twice during that time. In 2013 DoHA requested that another 15 communities be added to the sample in order to collect baseline data prior to an anticipated expanded rollout of LAF. As a result, 12 additional communities were added to the sample in the final phase of data collection. Quantitative data from these communities are reported separately, in Appendix Two.

## 5 Results: prevalence and patterns of sniffing

In this section, we report on:

- trends in petrol sniffing in 17 communities for which data has been collected at four time points: 2005-06, 2007-08, 2011-12 and 2013-14;
- numbers of people sniffing in the 41 communities sampled in 2011-12 and 2013-14;
- demographic characteristics of people sniffing in 2011-12 and 2013-14; and
- frequency of use among those sniffing in 2011-12 and 2013-14.

Before doing so, however, we discuss the context within which these frequencies and trends should be interpreted.

### 5.1 Understanding petrol sniffing at the community level

Patterns of use of mind-altering substances such as inhalants, and the effects of these patterns, are a product of the interrelated effects of three sets of variables: pharmacological and toxicological properties of the *substances* concerned; attributes of individual *users*, such as their physical health and the objectives and expectations they bring to using drugs; and characteristics of the *environment* in which use takes place, such as availability of the substance, opportunities for other recreational activities, and the presence of police (d'Abbs & MacLean, 2008; Zinberg, 1984)<sup>8</sup>. No single factor, taken by itself, provides an adequate framework for explaining the use and effects of a mind-altering substance on users, their families or their community.

In the case of petrol-sniffing in remote Indigenous communities, the interaction of these sets of factors results in levels of petrol sniffing that often fluctuate quickly and dramatically. An individual might be looking for excitement, responding to peer pressure, or deeply upset, and discover that sniffing petrol is an option, because someone has shown them how to sniff or because they have observed others doing it. For sniffing to occur, a number of factors have to combine: perhaps a funeral or a football carnival brings people together; someone who sniffs comes and shows local young people the practice, and there are one or more volatile substances available (perhaps the visitor has brought unleaded petrol with him, or alerts others to the availability of a deodorant).

Within this local scenario, regional factors come into play in two ways: firstly, if there is sniffing somewhere in the region, the knowledge and desire spreads; secondly, if there is access to RULP within the region, it is likely to find its way into the community in people's vehicles, or sometimes because it is purchased with the express purpose of sniffing. When these factors come together a community experiences sniffing – it could

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<sup>8</sup> In his original, seminal monograph on the subject, Zinberg labeled these three factors as *drug*, *set* and *setting*.

be one person, or twenty. These factors form a constantly changing background in any community, and as a result sniffing tends to ebb and flow.

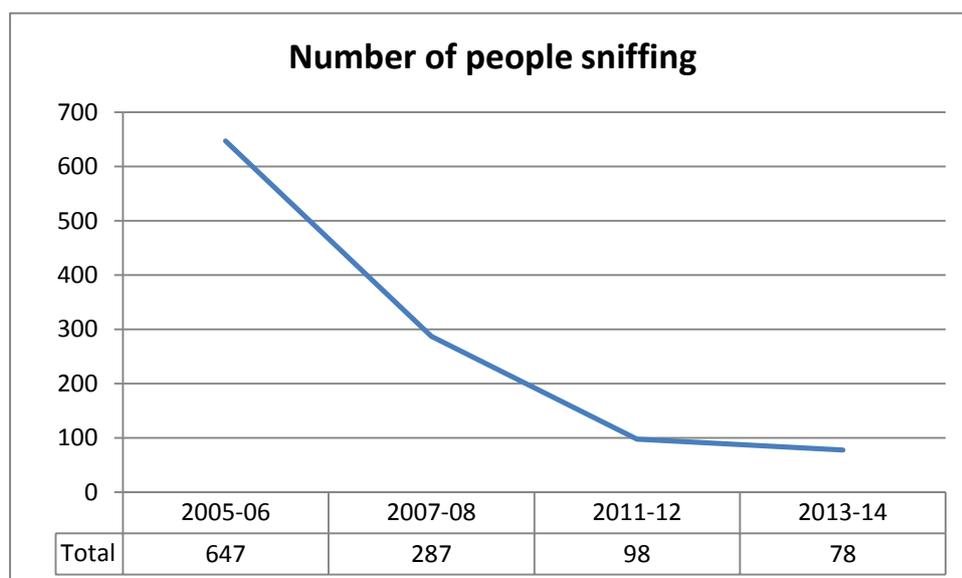
When an outbreak of sniffing occurs, the response of the community and the availability of services are critical to what happens next. If there are alternative youth activities available, and services to work with individual people sniffing and their families, sniffing may decrease or even cease. If not, then it can become entrenched. Earlier studies of the impact of LAF suggest that the availability of LAF and RULP are both significant ingredients in this scenario.

It is against this background that the data collection for this study should be read. Data collectors arrive in communities at different points in what is likely to be a pattern – sometimes, but not always, cyclical – of fluctuating prevalence. This means that prevalence patterns revealed at any one time should therefore be interpreted with caution, and that it may well be impossible to identify any single causal factor behind a particular pattern of sniffing at a given time and place. It also means that long term trend data provide a more robust indicator of the impact of LAF than single ‘snapshots’.

## 5.2 Trends in prevalence of petrol sniffing: 2005-06 to 2013-14

The aim of this section is to assess the impact of the regional rollout of LAF over the nine years following its introduction, based on data from 17 communities. The data collected in 2005-06 was baseline – before the regional rollout of LAF<sup>9</sup>, which means that we can get a good picture of sniffing before and after the regional rollout of LAF.

**Figure 5-1: Total number of people sniffing in 17 communities 2005-06 to 2013-14**



<sup>9</sup> 16 communities have LAF, and 1 has no fuel of any kind.

In the 17 communities under review, the total number of people sniffing declined from 647 in 2005-06 to 287 in 2007-08 (a 55.6% reduction). Between 2007-08 and 2011-12 the number of people sniffing petrol declined again to 98, a reduction of 68.3%. Between 2011-12 and 2013-14, the total fell by another 20.4% to 78. This means that in these 17 communities, between 2005-06 and 2013-14 there has been an 87.9% reduction in the number of people sniffing – strong prima facie evidence of the positive impact of LAF. As these figures, and the trend shown in Figure 5-1 indicate, although the rate of decline slowed toward the end of the period under review, it did not stop.

### 5.2.1 The regional picture

As Table 5-1 below shows, the 17 communities were drawn from most but not all of the regions included in the present study: absent are communities from NT Barkly region, NT Katherine region, and WA Goldfields region.

**Table 5-1: Total number of people sniffing in selected communities, 2005-06, 2007-08, 2011-12 and 2013-14**

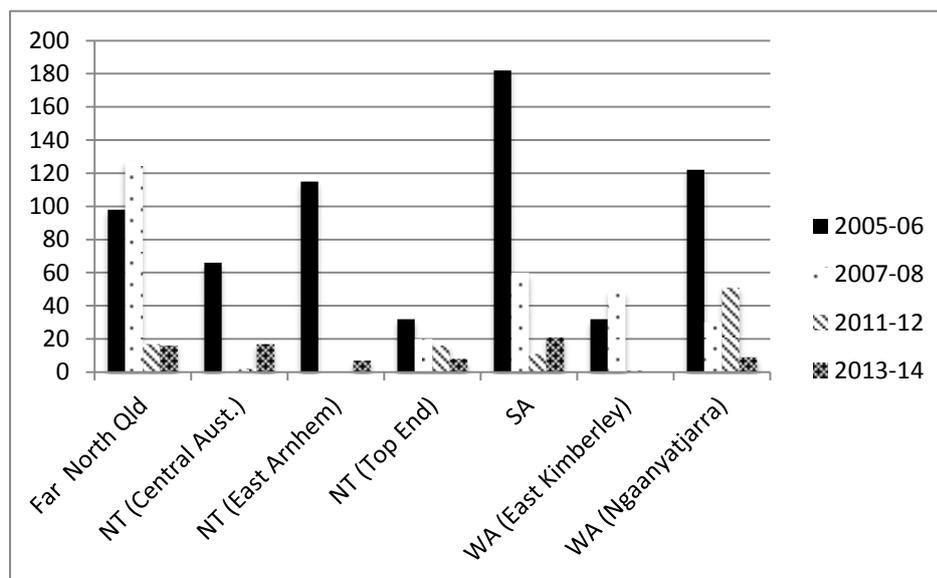
Region	Community ID	2005-06	2007-08	2011-12	2013-14
Far Nth Qld	69	42	0	0	0
	78	21	127	10	0
	79	35	0	7	16
		<b>98</b>	<b>127</b>	<b>17</b>	<b>16</b>
NT (Central Aust.)	36	27	0	1	2
	38	39	1	1	5
	39	0	0	0	10
		<b>66</b>	<b>1</b>	<b>2</b>	<b>17</b>
NT (E. Arnhem)	54	61	0	0	0
	59	54	0	0	7
		<b>115</b>	<b>0</b>	<b>0</b>	<b>7</b>
NT (Top End)	57	32	20	16	8
		<b>32</b>	<b>20</b>	<b>16</b>	<b>8</b>
SA	23	43	22	5	2
	24	33	11	0	3
	27	59	25	2	1
	28	47	2	4	15
		<b>182</b>	<b>60</b>	<b>11</b>	<b>21</b>
WA (E. Kimberley)	15	32	49	1	0
		<b>32</b>	<b>49</b>	<b>1</b>	<b>0</b>
WA (Ngaanyatjarra)	1	83	25	50	9
	2	18	5	0	0
	9	21	0	1	0
		<b>122</b>	<b>30</b>	<b>51</b>	<b>9</b>
<b>Total</b>		<b>647</b>	<b>287</b>	<b>98</b>	<b>78</b>

Table 5-1 and Figure 5-2 chart trends over the period in each of the regions for which long term data are available.

They show that between 2005-06 and 2007-08, the number of people sniffing declined in all but two of the regions, the exceptions being the Gulf region of Queensland, and the East Kimberley region of WA, where an increase in prevalence was recorded. For several regions at this time, the decline in sniffing was very marked (100% decline in NE Arnhem, for instance). For two regions that had previously experienced traumatic and deeply destructive levels of sniffing for many years, the reductions (67% in SA and 75.4% in the Ngaanyatjarra Lands) quite literally changed many families' everyday experience of life.

Between 2007-8 and 2011-12, all regions except the Ngaanyatjarra Lands in WA recorded a decline in prevalence<sup>10</sup>. Between 2011-12 and 2013-14, as Table 5-1 and Figure 5-2 show, the trend was more patchy, with increases in prevalence recorded in five communities.

**Figure 5-2: Trends in total number of people sniffing petrol, by region**



It is not possible to be definitive about the role of LAF in these reductions on a regional level because each region has particular dynamics within it that complicate the picture. For example, Far North Queensland experienced a dramatic reduction between 2007-08 and 2011-12 because one community, which already had LAF, introduced youth programs and other community measures. By contrast, both SA and the Ngaanyatjarra Lands experienced significant falls between 2005-06 and 2007-08 which coincide with the regional rollout of LAF.

<sup>10</sup> Strictly speaking, we should also note that NT Central Australia also recorded a rise at this time, but since it was an increase from 1 sniffer to 2 sniffers, we have excluded the change as trivial for present purposes.

## 5.2.2 Changes in age and frequency

Within the petrol sniffing populations at each of the four time points, there were also changes in the age distribution and in sniffing frequencies (some of which may reflect the kinds of short-term fluctuations mentioned above).

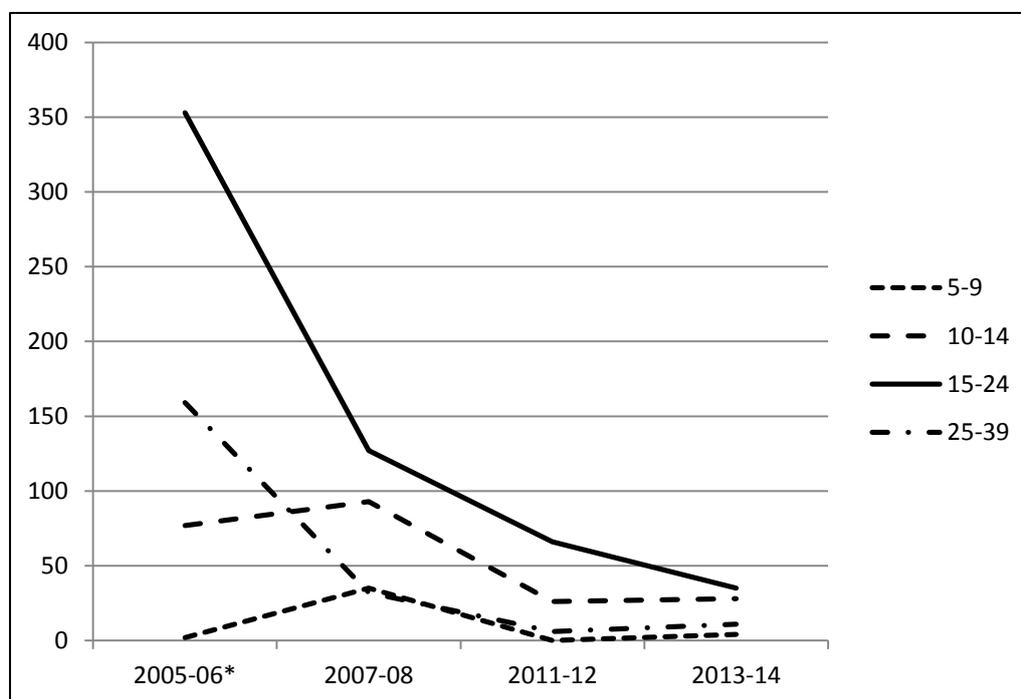
Table 5-2 and Figure 5-3 show trends in sniffing prevalence in the 17 selected communities, categorised by age-group.

**Table 5-2: Total number of people sniffing in selected communities, 2005-06 to 2013-14, by age-group**

Age	2005-06*	2007-08	2011-12	2013-14
5-9	2	35	0	4
10-14	77	93	26	28
15-24	353	127	66	35
25-39	159	32	6	11
<b>Total</b>	<b>591</b>	<b>287</b>	<b>98</b>	<b>78</b>

\*Age-group data missing for 56 identified people sniffing from two communities in 2005-6

**Figure 5-3: Total number of people sniffing in selected communities, 2005-06 to 2013-14, by age-group**



These figures suggest that, between 2005-06 and 2007-08 – a period of sharp overall decrease in sniffing - the number of people sniffing in the two youngest age-groups, 5-9 years and 10-14 years, actually increased. (However, this could be in part an

artefact of the 56 sniffers in 2005-06 for whom age data was missing.) Between 2007-08 and 2011-12, the decline in numbers of people sniffing occurred in all age groups. In the third period, however – between 2011-12 and 2013-14 – only among 15-24 year olds (the cohort with the majority of people who sniff) did the decline continue, from 66 to 35. In the other three age-groups, the numbers either remained steady or grew slightly.

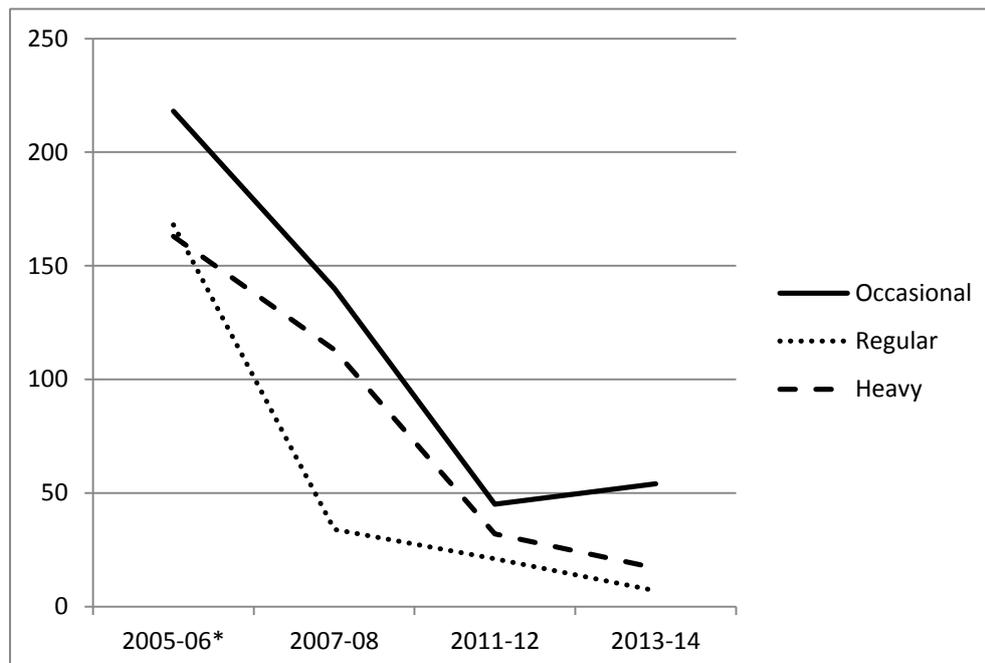
Table 5-3 and Figure 5-4 display trends over the four periods under review for each of the three frequency categories: occasional, regular and heavy. In contrast to changes in the age groups of people sniffing, there was a steady decline across all frequency categories between 2005-06, 2007-08 and 2011-12. Between 2011-12 and 2013-14 the decline continued in the case of regular and heavy sniffing, but the fall here was offset by an increase in the number of people sniffing petrol at ‘occasional’ levels.

**Table 5-3: Prevalence in selected communities 2005-06 to 2013-14, by frequency**

	2005-06*	2007-08	2011-12	2013-14
<b>Occasional</b>	218	140	45	54
<b>Regular</b>	168	34	21	7
<b>Heavy</b>	163	113	32	17
<b>Total</b>	<b>549</b>	<b>287</b>	<b>98</b>	<b>78</b>

\*Frequency data missing for 98 people who were identified as sniffing from three communities.

**Figure 5-4: Trends in prevalence in selected communities between 2005-06 and 2013-14, by frequency**



\*Frequency data in 2005-06 missing for 98 people sniffing from three communities.

### 5.2.3 Sniffing prevalence in 17 communities between 2005 – 2014: key findings

- Prevalence of sniffing declined by 87.9% in 17 communities over the nine years since 2005 when the regional rollout of LAF commenced.
- The total number of people sniffing petrol has continued to fall over each period of data collection, which suggests that it is important to maintain a long term supply of LAF to get the full benefit at the community level.
- Trends in prevalence at the regional level are less steady because of the influence of individual communities.
- Within the overall decrease in prevalence the proportion of both ‘regular’ and ‘heavy’ sniffing has fallen between 2005 and 2014, while the proportion of ‘occasional’ sniffing has risen. This means that the damage done to individuals who sniff is likely to have lessened.

### 5.3 Sniffing prevalence: 2011-12 and 2013-14

This section presents the results of the data collection that took place between 2011-12 and 2013-14 in the sample of 41 communities.

**Table 5-4: Total number of people reported sniffing 2011-12 and 2013-14 (N=41 communities)**

Region	ID	2011 pop 5-39 years	No. people sniffing 2011-12	% 5-39 pop	Km to nearest RULP 2011-12	No. people sniffing 2013-14	% 5-39 pop	Km to nearest RULP 2013-14
Far Nth Qld	1	764	0	0.0	200	0	0.0	200
	2	334	0	0.0	250	0	0.0	250
	3	532	0	0.0	250	10	1.9	250
	10	748	10	1.3	80	0	0.0	80
	11	643	7	1.1	50	16	2.5	50
<b>Total</b>		<b>3021</b>	<b>17</b>	<b>0.6</b>		<b>26</b>	<b>0.9</b>	
NT (Barkly)	2	141	2	1.4	60	0	0.0	60
	3	257	10	3.9	10	0	0.0	180
	4	273	14	5.1	90	24	8.8	90
	5	979	11	1.1	0	35	3.6	0
<b>Total</b>		<b>1650</b>	<b>37</b>	<b>2.2</b>		<b>59</b>	<b>3.6</b>	
NT (Central Aust.)	3	96	4	4.2	115	1	1.0	115
	6	356	1	0.3	290	2	0.6	290
	8	240	1	0.4	150	5	2.1	150
	9	190	0	0.0	190	10	5.3	190
	12	263	11	4.2	450	4	1.5	450
	13	180	0	0.0	270	5	2.8	270
<b>Total</b>		<b>1325</b>	<b>17</b>	<b>1.3</b>		<b>27</b>	<b>2.0</b>	

Region	ID	2011 pop 5-39 years	No. people sniffing 2011- 12	% 5-39 pop	Km to nearest RULP 2011- 12	No. people sniffing 2013- 14	% 5-39 pop	Km to nearest RULP 2013- 14
NT (E. Arnhem)	1	402	0	0.0	360	0	0.0	360
	2	555	0	0.0	18	7	1.3	18
	3	319	0	0.0	42	6	1.9	42
	5	435	61	14.0	20	7	1.6	275
	<b>Total</b>	<b>1711</b>	<b>61</b>	<b>3.6</b>		<b>20</b>	<b>1.2</b>	
NT (Katherine reg.)	1	321	18	5.6	110	6	1.9	110
	2	176	5	2.8	80	1	0.6	80
	3	315	1	0.3	100	3	1.0	100
	4	679	1	0.1	214	4	0.6	214
	6	180	0	0.0	33	2	1.1	33
<b>Total</b>	<b>1671</b>	<b>25</b>	<b>1.5</b>		<b>16</b>	<b>1.0</b>		
NT (Top End)	1	118	16	13.6	288	8	6.8	288
	2	734	23	3.1	200	9	1.2	200
	8	898	10	1.1	35	1	0.1	Island
<b>Total</b>	<b>1750</b>	<b>49</b>	<b>2.8</b>		<b>18</b>	<b>1.0</b>		
SA	1	184	5	2.7	51	2	1.1	51
	2	203	0	0.0	58	3	1.5	58
	5	291	2	0.7	250	1	0.3	250
	6	309	4	1.3	320	15	4.9	320
<b>Total</b>	<b>987</b>	<b>11</b>	<b>1.1</b>		<b>21</b>	<b>2.1</b>		
WA (E. Kimberley)	1	321	1	0.3	280	0	0.0	280
	4	665	0	0.0	0	0	0.0	0
	5	294	0	0.0	206	0	0.0	0
	6	244	0	0.0	0	0	0.0	0
<b>Total</b>	<b>1524</b>	<b>1</b>	<b>0.1</b>		<b>0</b>	<b>0.0</b>		
WA (Goldfields)	1	93	1	1.1	600	0	0.0	600
	5	178	19	10.7	0	8	4.5	0
<b>Total</b>	<b>271</b>	<b>20</b>	<b>7.4</b>		<b>8</b>	<b>3.0</b>		
WA (Ngaanya- tjarra)	1	268	50	18.7	500	9	3.4	624
	2	100	0	0.0	720	0	0.0	930
	3	72	0	0.0	700	0	0.0	700
	9	137	1	0.7	800	0	0.0	800
<b>Total</b>	<b>577</b>	<b>51</b>	<b>8.8</b>		<b>9</b>	<b>1.6</b>		
<b>TOTAL</b>		<b>14487</b>	<b>289</b>	<b>2.0</b>		<b>204</b>	<b>1.4</b>	

Table 5-4 above shows the numbers of people reported sniffing and these numbers as a percentage of the population aged 5-39 in each community. It also shows the distance of the community to RULP at both data collection periods.

As Table 5-4 shows, the total number of people sniffing in the 41 communities visited fell from 289 in 2011-12 to 204 in 2013-14, a decline of 29.4%.

In order to try and examine the extent of the influence of the availability of LAF on sniffing prevalence at the community level, we have identified communities in which the number of people sniffing changed by ten or more. Seven communities experienced changes that met this criterion. Of these seven, three were communities where the availability of LAF changed. In all of these cases, the number of people sniffing decreased shortly after nearby outlets changed to LAF fuel. Thus it can be seen that, while replacement of RULP with LAF is a factor, it does not explain the entire variability in sniffing prevalence. Petrol sniffing in other words, is a complex phenomenon that is influenced, but not determined solely, by accessibility of LAF and RULP.

### 5.3.1 Regional trends in prevalence

These overall trends are products of several region-specific and community-specific trends. In particular:

1. The regional increase in the number of people reported sniffing between the two sampling periods in Far North Queensland, from 17 to 26, was accounted for by increases in the number of people sniffing at two communities, both of which have relatively easy access to RULP.
2. An increase in the numbers of people reported sniffing in the Barkly region of the NT, from 37 in 2011-12 to 59 in 2013-14, was partly accounted for by a significant increase in the numbers of people reported sniffing in one community, from 11 in 2011-12 to 35 in 2013-14. (An Alice Springs-based service provider with responsibility for this community has claimed that our figure over-estimates the true number of people sniffing petrol there. We note the disagreement here, but have checked and verified our data collection procedures.) Whilst the number of outlets selling LAF in the region has increased during the data collection period, several outlets located close to communities experiencing sniffing continue to sell RULP.
3. An increase in the number of people reported sniffing in the Central Australian region of the NT, from 17 to 27, was accounted for by an increase in the numbers of people sniffing in one community, from 0 in 2011-12 to 10 in 2013-14. There has been no change in the availability of RULP for this community.
4. In the East Arnhem region of the NT, the numbers of people reported sniffing fell from 61 in 2011-12 to 20 in 2013-14 – a result of a sharp decline in numbers reported sniffing in one community, from 61 to seven.
5. In the NT Katherine region there was a fall from 25 people sniffing in 2011-12 to 16 in 2013-14, this was mainly due to a decrease of 12 people sniffing in one community, which was offset by small increases in other communities.
6. In the Top End region of the NT, the numbers of people reported sniffing declined in all three communities in the regional sample, contributing to a regional decline from 49 in 2011-12 to 18 in 2013-14.

7. Among four South Australian communities in both samples, the total number of people sniffing increased from 11 to 21, a change due almost entirely to an increase in the numbers reported sniffing in one community (from four in 2011-12 to 15 in 2013-14). RULP is accessible to this region; however its availability did not change over the data collection period.
8. There was no change (and almost no sniffing reported) in the four East Kimberley communities visited at each data collection period.
9. In the Goldfields region of WA the two communities recorded a decrease in sniffing from 20 in 2011-12 to 8 in 2013-14. This is almost entirely attributable to a decrease of prevalence in one community. RULP was available at this community for the whole data collection period.
10. In the Ngaanyatjarra lands of WA, a sharp decline in the numbers reported sniffing at one community led to a regional decline from 51 in 2011-12 to nine in 2013-14. Between the first and second data collections Laverton, which is close to the Ngaanyatjarra region, changed from selling RULP to LAF.

### 5.3.2 Gender distribution

In general, roughly three out of every four people sniffing in most communities are male. Approximations of this gender-mix were found at both fieldwork periods, as Table 5-5 shows. (Figures for individual communities are shown in Appendix Three, Table 9-3.)

**Table 5-5: Gender distribution of current people sniffing, 2011-12 and 2013-14**

Region	2011-12		2013-14	
	N=	% male	N=	% male
Far Nth Qld	17	76.5	26	76.9
NT Barkly	37	78.4	24	50.0
NT Central Aust	17	88.2	27	88.9
NT E. Arnhem	61	63.9	20	75.0
NT Katherine	25	96.0	16	81.3
NT: Top End	26	96.2	18	100.0
SA	11	90.9	21	90.5
WA: E. Kimberley	1	100.0	0	-
WA: Goldfields	20	95.0	8	25.0
WA: Ngaa.	51	70.6	9	88.9
<b>TOTAL</b>	<b>266*</b>	<b>79.3</b>	<b>169**</b>	<b>77.5</b>

\*Gender missing for 23 identified people sniffing in one Top End community in 2011-12.

\*\*Gender missing for identified 35 people sniffing in one NT Barkly community in 2013-14.

### 5.3.3 Age distribution

The ages of people sniffing tends to indicate where individuals are up to in their 'sniffing career'. This information is important because it is an indicator of what sort of strategies in addition to LAF may be most successfully used to decrease sniffing in any

given community. Obviously younger people have not been sniffing for very long – and are therefore most likely to be successfully diverted onto other activities through the provision of youth programs. The opposite is true for older people sniffing, who tend to have been sniffing for many years, and are very entrenched in their ways. These people are more likely to need sustained treatment from drug and alcohol services.

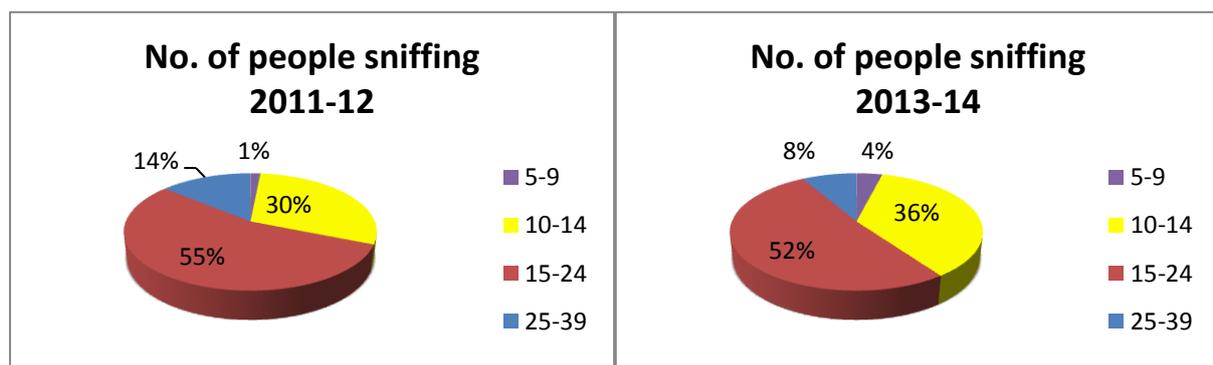
More than half of all people sniffing are in the 15 – 24 age group. As Table 5-6 and Figure 5-5 show, this is consistent over both periods of data collection. Beyond this, the changes between 2011-12 and 2013-14 were, firstly, an increase in the number of very young people sniffing petrol (5-9 years) from four to eight – not a large absolute increase, but some cause for concern, particularly given the implications for brain development. The second youngest age-group (10-14 years) showed a proportional but not an absolute increase in the numbers sniffing petrol. Finally, the number of older people sniffing petrol (25-39 years), declined both absolutely and as a proportion of the total, from 37 people to 17 people.

**Table 5-6: Age distribution of people sniffing petrol**

Age-group	2011-12		2013-14	
	No.	%	No.	%
5-9	4	1.5	8	3.9
10-14	79	29.7	74	36.3
15-24	146	54.9	105	51.5
25-39	37	13.9	17	8.3
Total	266*	100.0	204	100.0

\*Age data missing for 23 people sniffing in one NT Top End community.

**Figure 5-5: Age distribution of people sniffing petrol, 2011-12 and 2013-14**



The age distributions of people sniffing petrol in each of the 41 communities are shown in Appendix Three, Tables 9-4 (2011-12) and 9-5 (2013-14). However, caution should be exercised in interpreting these figures, as the numbers are small.

### 5.3.4 Frequency of sniffing

The frequency with which people sniff is an important indicator of the level of both personal and community harm. People who sniff at ‘regular’ and ‘heavy’ levels are likely to be sustaining physical harm as well as causing stress within their families, and disruption to their communities. This applies particularly strongly for people categorized as ‘heavy’ users, who sniff at least once a week – and many of whom sniff every day.

As noted earlier, ‘occasional’ users are those who are believed to have sniffed petrol or some other volatile substance at some time in the past six months, but without evidence of regular use. It is common for data collectors to find that a given community has had one or two ‘outbreaks’ in the previous six months. These can last from a few days to a few weeks, and generally stop when the instigators leave town, or the community mounts a cohesive and effective response. It is people who are involved in these ‘outbreaks’ that comprise most of the ‘occasional’ group.

Regular users – that is, those who are believed to have sniffed petrol or another inhalant regularly over the previous six months, without meeting the criterion for ‘heavy’ use, that is, at least once a week – were often drawn from those who may have started sniffing in an ‘outbreak’ situation, and then continued to sniff.

Table 5-7 and Figure 5-6 show the distribution of sniffing frequencies at each of the two data collection times. (Details for individual communities are shown in Appendix Three, Tables 9-6. and 9-7.)

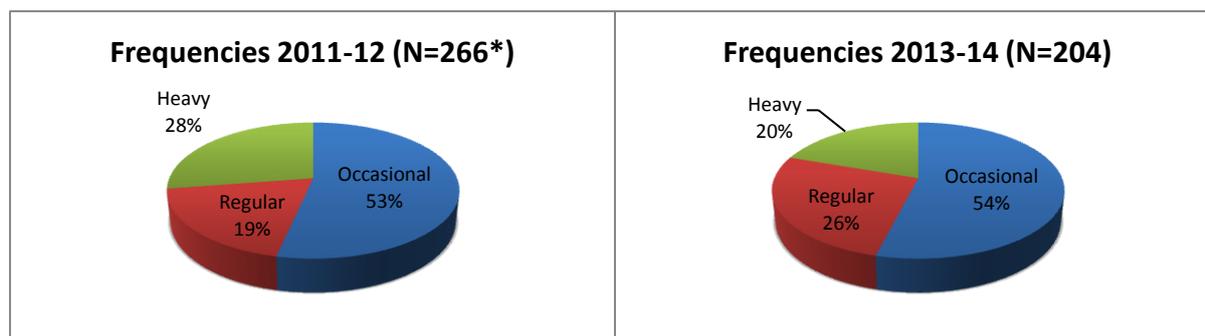
**Table 5-7: Frequency of sniffing, 2011-12 and 2013-14**

Frequency of use	2011-12		2013-14	
	No.	%	No.	%
Occasional	142	53.4	110	53.9
Regular	51	19.2	54	26.5
Heavy	73	27.4	40	19.6
Total	266*	100.0	204	100.0

\*Data on frequencies missing for 23 people sniffing in one NT Top End community.

As Table 5-7 and Figure 5-6 show, just over half of those who sniffed petrol did so ‘occasionally’ according to the definitions used in this report, both in 2011-12 and 2013-14. Between one-fifth and one-quarter of users did so regularly, with the numbers showing a proportional but not an absolute increase between the two time periods. The one major change in frequencies between 2011-12 and 2013-14 was a decline in both the number and proportion of ‘heavy’ users – from 73 in 2011-12 to 40 in 2013-14, a change brought about largely by declines in numbers of heavy users in the East Arnhem and Top End regions of the NT and the Ngaanyatjarra Lands of WA.

**Figure 5-6: Frequencies of sniffing**



\*Frequencies missing for 23 people sniffing in 2011-12.

#### 5.4 Prevalence and patterns of sniffing: key findings

- The total number of people sniffing in the 41 communities declined from 289 in 2011-12 to 204 in 2013-14, a drop of 29.4%.
- Within the overall decrease in prevalence between 2011 and 2014 trends vary across regions, with surveyed communities in four regions increasing and in five regions decreasing.
- A little over half of people who sniff are aged between 15 and 24 years.
- Approximately three quarters of people who sniff are male and this has not changed between 2011 and 2014.
- There has been a small rise in the number of 5 – 9 year olds who are sniffing, which is a cause for concern.
- A little over half of all sniffing is done on an 'occasional' basis, and this has not changed between 2011 and 2014.
- The numbers of 'heavy' users declined from 73 in 2011-12 to 40 in 2013-2014.

## **6 Results: the place of low aromatic unleaded fuel in community responses to petrol sniffing: a qualitative analysis**

### **6.1 Introduction**

In this section we draw on fieldworkers' observations and interviews with community residents and other stakeholders to examine some of the broader issues associated with petrol sniffing in communities and the impact of LAF. Most of the information presented here is qualitative, and much of it consists of people's perceptions about such matters as the impact of LAF on engines or the adequacy of recreational services in a community. In reporting these perceptions, we are not necessarily endorsing them. Still less do we attempt to judge them against some sort of objective reality. To do so would not only, in many instances, be impossible, it would also miss the point of gathering this kind of data in the first place. For example, if enough key people in a community believe that LAF is bad for boat engines to cause that community to stop using LAF (as happened in one community in the study), then what matters is the presence of and support for the belief, rather than – or at least as much as – its accuracy.

Happily, most of the perceptions our fieldworkers encountered struck a more positive note than the above example. The evidence gathered suggests that many communities have benefited significantly as a result of petrol sniffing declining following the introduction of LAF. At the same time, it is also clear that many communities face serious problems associated with alcohol and cannabis misuse. While there is evidence of an improvement in services available to address petrol sniffing, programs to provide youth, recreation, employment and training opportunities continue to struggle with a variety of constraints.

The findings reported here are based on the same 41 communities that make up the main sample for the quantitative analysis, and are presented in three parts: (1) the perceived impact and acceptability of LAF in communities, and factors shaping acceptability; (2) evidence about use of alcohol and other drugs, and the extent to which declines in petrol sniffing may have led to substitution with other drugs; and (3) community responses to petrol sniffing, and the resources available for responding.

### **6.2 Acceptability and impact of LAF in communities**

In most communities where LAF had been introduced, it was described as having had a beneficial impact (26 communities or 63.4%) and as being widely accepted. In one community, LAF was described as having 'saved' the community from an onslaught of petrol sniffing. In some communities, it was described as being so embedded in the community that many younger people were probably not aware that it was any different from RULP, or that the community was even using LAF. Even in these communities, however, older people at least remained aware that, should RULP be reintroduced, petrol sniffing could quickly flare up once more.

In three communities, support for LAF was qualified in two ways: firstly, by frustration caused by the continuing availability of RULP from other outlets; secondly, by some people's unwillingness to use LAF in their own small engines, as a consequence of which, while expressing support for LAF in the community, they would continue to bring in RULP for their own use. Beliefs about the deleterious effects of LAF on boat engines also appeared to be behind the one instance where widespread dissatisfaction with LAF was encountered. Appreciation of the perceived benefits of LAF was to some extent offset by widely shared beliefs about its adverse effects on engines, especially small engines such as outboard motors, motor cycles, lawn-mowers and whipper-snippers. In more than half of communities visited (21 communities), fieldworkers were told about the damage that LAF was believed to inflict on engines.

One of the most widely shared criticisms concerned boat motors. While one person interviewed told of using Opal exclusively in his 30 HP Yamaha outboard motor, at least once a month, for the past six years without any ill effects, others claimed that Opal reduced both performance and engine life. One young woman, who supported the use of Opal in the community because of its impact on petrol sniffing, nevertheless stated categorically that it 'takes 100,000 km off the life of your boat engine'<sup>11</sup>. In one community, the use of LAF was abandoned shortly before fieldwork for this project was conducted in 2013, reportedly following complaints by boat owners, while in another, boat owners claimed that they had been advised by dealers not to use LAF in their engines.

A more qualified assessment came from some boat owners and mechanics who claimed that using LAF in small engines meant that one had to be more attentive to maintenance and even, according to some, use additives. One criticism was that Opal, when stored, became 'sticky' or 'all mucky'.

While outboard motors were a major preoccupation in criticisms of LAF, complaints and allegations were also voiced about the impact of LAF on vehicle engines – several people complained of damage to fuel pumps – and on small engines such as motorbikes, lawnmowers and whipper-snippers. Police in one community claimed that, in their training, they had been told that Opal was 'death to small engines'.

Such allegations, however, did not necessarily translate into opposition to the use of LAF. Several people who firmly believed that it damaged engines considered that such costs were less important than the benefits in reducing petrol sniffing. As one woman, who claimed to have had to replace her fuel pump three times because of Opal, put it: 'it's just a car; we're talking about lives'. She had seen the effects of sniffing on two uncles who now 'walk wobbly'.

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<sup>11</sup>Throughout most of this report we use the term low aromatic unleaded fuel (LAF). Here, however, we have used the specific term 'Opal', since the comments and views being reported here refer specifically to Opal fuel.

In some communities, no complaints were made about the effects of LAF on engines of any sort, and in a few cases a contrary view was offered. Some interviewees suggested that allegations about Opal-related harms may in fact have been due to dirt getting into engines (or rust, stirred up in old storage tanks), rather than the fuel itself. In one community, the chairperson of the community told the fieldworker that 'Opal helps the car, it cleans it out'. He added that people from other communities in the region had expressed interest to him about also getting LAF, as they had heard it was better for their vehicles.

Notwithstanding these positive accounts, it is clear from our fieldwork that LAF is widely seen as a damaging fuel, especially in small engines. Perception, in such a context, is no less significant in its potential consequences than objective reality.

### **6.3 Use of other inhalants, alcohol and other drugs in communities**

#### **6.3.1 Other inhalants**

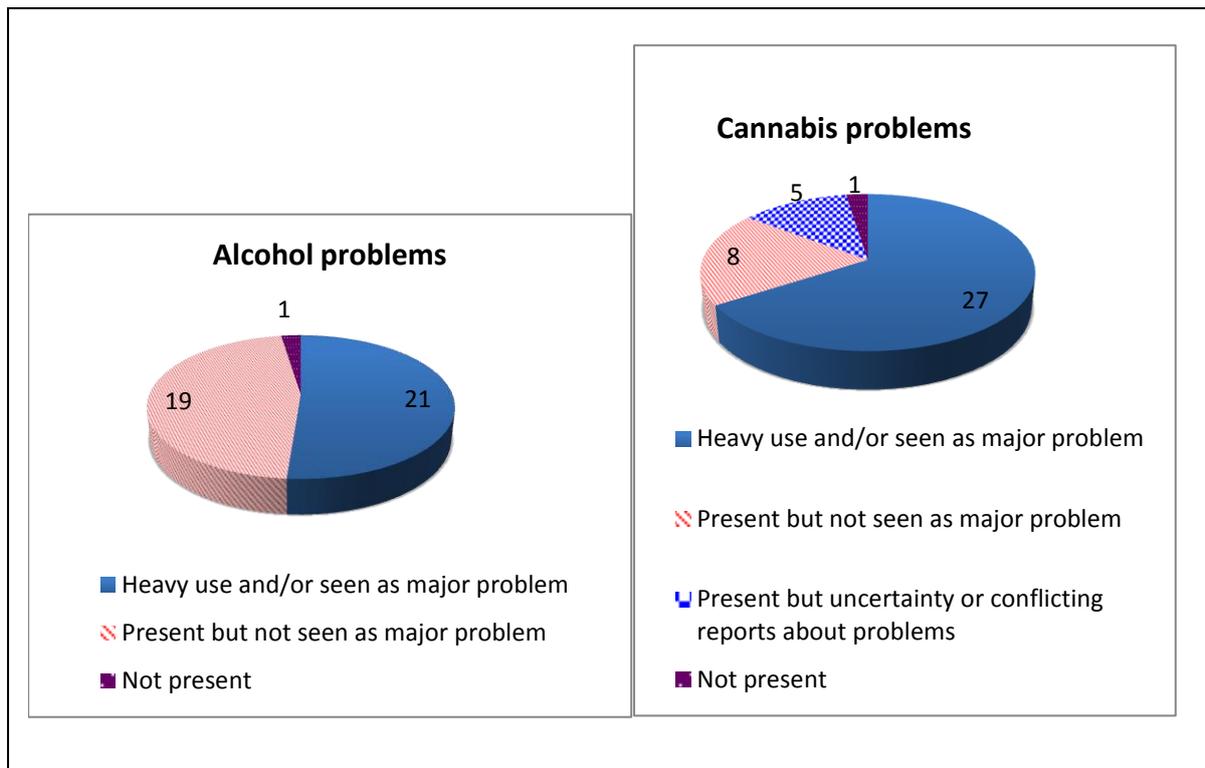
In most communities where petrol sniffing occurred, inhalants other than petrol were also mentioned. As explained above in Chapter 3, this study was not designed to collect systematic, quantitative data on use of volatile substances other than petrol (since LAF is intended as a deterrent to petrol sniffing). Fieldworkers were, however, asked to collect qualitative data on all forms of drug use. The results of their inquiries are necessarily anecdotal, and should not be read as quantitatively rigorous; nonetheless, they serve a useful purpose in locating petrol sniffing within a context often driven by opportunistic use of a variety of substances.

The most widely used volatile substance, as one would expect, was RULP, with reports of its use in 24 communities. RULP was followed in popularity by deodorants (17 communities), glue (9 communities) and aerosol paints (9 communities). In addition, a range of other inhalants were mentioned between one and three times: cooking gas, fly spray, 'foaming product to block holes in walls', hair spray, lighter fluid, nail polish, and premium unleaded petrol (specifically mentioned in three communities; it is also possible that some of the petrol sniffed and identified as RULP may in fact have been premium). There were also two reports of would-be users adding polystyrene to LAF in the hope of becoming intoxicated.

#### **6.3.2 Use of alcohol and cannabis (gunja)**

Disturbing as some of the incidents may have been to residents of the communities involved, the concerns generated were minor compared with the widespread worries voiced in regard to current patterns of alcohol and cannabis use in communities. Figure 6-1 enumerates these; it shows that in more than half of the communities, alcohol use was reported as heavy and/or a source of major problems, while the corresponding proportion regarding cannabis was even higher, at 65.9% of communities.

**Figure 6-1: Perceptions regarding alcohol and cannabis problems in communities**



Alcohol was implicated in binge drinking, grog running, family violence, injury and deaths. The following account, taken from a fieldworker’s report on a visit to a NT community, testifies to the burden heavy drinking imposes:

*Alcohol is a big problem amongst adults in the community. It is smuggled in via the back roads from . . . , and I was told that there had been a binge for a few days before I arrived. There is a fresh grave in the cemetery, that of a young woman who was run over recently by a truck at a drinking spot on the ... Highway.*

Cannabis was similarly pervasive in communities visited, and associated with drug-induced psychoses, fighting and property damage. In only one of the 41 communities visited were there no reports of recent cannabis use. In eight communities, cannabis was said to be present but not a cause of major problems. In another five communities, fieldworkers were told conflicting stories about the prevalence of cannabis and/or encountered uncertainty as to whether or not it should be seen as a problem. In the remaining 27 communities, current cannabis use was reported to be heavy and/or causing serious problems in the community. The comments below come from just one of several people in one community who told a similar story of cannabis-related violence and dysfunction:

*'Young people hassle old people to get money for gunja and they steal baskets to sell. Young people get cranky with older family members when there’s no gunja.*

*I was told by an old lady recently that she was pushed over by young people wanting food and money'.*

Concern at the community level with cannabis use appears also to be growing. In our 2007-08 study of the impact of LAF, concerns about cannabis were raised in just three out of the 31 communities studied (i.e. 9.7%). In 2011-12 in the present study, similar concerns were raised in 24 of 41 communities involved (58.5%), and in 2013-14, in 26 communities (63.4%).

In many communities, both alcohol and cannabis are available or accessible, and in 14 communities (34.1%), fieldworkers reported high levels of problems associated with both alcohol and cannabis.

The present project predates the rise of political and public concern about an alleged 'ice epidemic'. In four communities, fieldworkers were told anecdotal accounts indicating that ice may have been present. Kava was also mentioned in one community, while tobacco was specifically mentioned in three communities (but, obviously, used in many more, where it is presumably so normalised that it doesn't attract comment). In none of these cases, however, did the fieldworker herself or himself encounter first hand evidence of any of the illicit drugs mentioned being used.

### **6.3.3 Substitution from petrol to other substances**

The decline in petrol sniffing, together with evidence of high levels of cannabis use and alcohol, raise a question of whether or not some people who used to sniff petrol might have switched to cannabis, alcohol and/or other drugs. Fieldworkers were asked to pose this question in the communities they visited. Their findings are of course far from definitive, being based on the assessments of their key informants.

In 14 communities (34.1%), fieldworkers were told that the decline in petrol sniffing appeared to have led to an increase in use of cannabis, alcohol, or other drugs more generally. Few observers, however, drew a direct causal link. In some instances, the growth in cannabis use preceded the decline in petrol sniffing. In general, increasing cannabis use was attributed to a number of interconnected factors, including its ready availability thanks to dealer networks, its social acceptability in the community, and the boredom of many young people. In another six communities, informants told fieldworkers that, in general, alcohol, cannabis and petrol (and, sometimes, other drugs) were regarded as interchangeable; if you could not access one, you would find another.

As a young person in one community put it:

*All the kids I sniffed with stopped but they are smoking gunja now... When I left petrol I was smoking gunja, when I left gunja I was drinking.*

Informants in one community raised concerns about home brewing.

In 17 communities, fieldworkers reported that they heard of no evidence to suggest that cessation or a decline in petrol sniffing had led to substitution with cannabis, alcohol or any other drugs. In three of these communities, informants described a reverse pattern: that is, some young people were said to sniff petrol only when they could not obtain any gunja (cannabis). Smoking gunja and drinking alcohol, an informant in one community observed, were not a response to the absence of RULP, but rather a behaviour modelled by parents and elder siblings.

In short, while a decline in accessibility of RULP may have fed into the desire for gunja, alcohol and other drugs among young people in some communities, the demand for these drugs, and the supply networks feeding this demand, have their own social, cultural and economic drivers, many of which were in place before the reductions in petrol sniffing occurred.

## **6.4 Community responses and resources**

Over the decades there has been much debate over the role of governments and communities in addressing petrol sniffing in Indigenous communities. Throughout the 1980s and early 1990s, governments insisted that it was a ‘community’ issue, and contributed little more than one-off, usually short-term grants to local non-government agencies attempting to implement programs (d’Abbs, MacLean, & Brady, 2008). In the late 1990s, the introduction by the Commonwealth government of a subsidy to support the use of aviation fuel in some communities as a deterrent to sniffing marked an expansion of government involvement (Shaw et al., 2004), and paved the way for a similar approach to the rollout of LAF from 2005. In 2006, Commonwealth and state/territory governments committed themselves to supporting a broader, strategic approach known as the Petrol Sniffing Strategy (PSS), which included both the continuing rollout of LAF and support for community initiatives.

Today, a range of agencies and services deliver professional help to individuals, families and communities experiencing sniffing. Some of this assistance is provided by visiting services, some by local staff. The formation, coordination and implementation of community responses to sniffing among families, residents and agencies also constitute important elements in addressing petrol sniffing at a community level. In this report, we examine evidence gathered by fieldworkers about the accessibility of qualified support services in communities, and about community responses to sniffing. We also consider fieldworkers’ reports on the state of youth, sport and recreation programs, and employment and training activities.

### **6.4.1 Perceptions about the availability of qualified assistance for people who sniff**

For the purposes of this analysis ‘qualified’ assistance has been judged to be that delivered by a person with mental health or substance use qualifications. Table 6-1 summarises the kinds of services available in communities visited in the 2007-08 study

(d'Abbs & Shaw, 2008a, 2008b), as well as in the present study. The summaries are based on fieldworkers' observations, and service providers' and community residents' perceptions of the assistance available. While the information is of good quality, it should not be regarded as a formal census of services.

**Table 6-1: Reported availability of qualified services in communities for addressing petrol sniffing**

<b>Service</b>	<b>2007-08</b>	<b>2011-12</b>	<b>2013-14</b>
	% (N=20)	% (N=41)	% (N=41)
No service	25.0	12.2	4.9
Off-site, no clear referral pathways	10.0	4.9	4.9
Off-site, accessible	35.0	43.9	39.0
Regular visiting service	5.0	9.8	9.8
On-site service	25.0	29.3	41.5
<b>Total</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>

The table suggests that, overall, accessibility of qualified services has improved significantly, with a decline in the proportion of communities with no access to qualified services, and an increase in the numbers served by either a regular visiting service or an on-site service. In particular, the proportion of communities with access either to a regular visiting service or an on-site service has risen from less than one quarter in 2007-08 to more than 50% in 2013-14.

#### **6.4.2 Coordination of community response to sniffing**

Communities exhibit varying levels of engagement regarding community issues. In the past, sniffing has flourished in places where there has been no cohesive response – often because the magnitude of the problem was just too daunting. However, there are now numerous reports of communities cooperating to provide a quick response to sniffing, for example:

*When some kids were caught last year the services got together to stop access to fuel - the car was removed and they made sure that the mechanics didn't have any fuel on their premises as there had been a couple of break-ins.*

Table 6-2 summarises the evidence gathered by fieldworkers in 2011-12 and 2013-14 about the formation and implementation of community-level responses to petrol sniffing. It shows that by 2013-14, more than half of the communities had not only formulated a community response but also implemented it.

**Table 6-2: Community responses to petrol sniffing**

Response	2011-12		2013-14	
	No.	%	No.	%
Not applicable (No VSA)	7	17.1	8	19.5
No evidence of a community-based response	13	31.7	7	17.1
Evidence of community response being developed, but no evidence of implementation	4	9.8	5	12.2
Evidence of community response developed & implemented	17	41.5	21	51.2
<b>TOTAL</b>	<b>41</b>	<b>100.0</b>	<b>41</b>	<b>100.0</b>

Apart from adopting LAF, two measures were particularly widely used. First, in 23 communities, retail outlets had removed inhalants from open access. Second, in 14 communities, visiting contractors had been asked either not to bring RULP or other inhalants into the community, or to lock up any such materials securely while in the community. For example, in one central Australian community the store committee had directed the store to keep most aerosols off the shelves and locked up, while the store manager had enlisted help from the Central Australian Youth Link Up Service (CAYLUS) to source suitable lockable cabinets for deodorants and other aerosols. Shire supervisors had also issued strict instructions to visiting tradespeople to keep any aerosols or other inhalants safely secured.

## 6.5 Youth, sport and recreation programs

The provision of youth services has long been an important part of the response to sniffing and other youth issues in remote communities. Youth services can come in many forms – the ‘sport and rec’ approach, which, as its name suggests, focuses on the provision of sporting activities – most often football for men, and sometimes softball for women. Another approach is less sport-focused, with youth workers operating, for example, an after school style program with a range of sports and arts activities. These programs tend to focus on school-aged people. Still other programs focus on engaging post school young people in a broad range of activities – often held at night.

In their discussions with informants, fieldworkers were asked to gather information on the nature and state of current youth, sport and recreational activities and facilities. The findings should not be regarded as an audit; they are more impressionistic and anecdotal, and fieldworkers had little opportunity to verify observations and claims made by individuals, other than by considering them alongside comparable statements by other individuals. Nonetheless, the reports help to describe important aspects of the contexts within which petrol sniffing sometimes takes hold.

Youth programs and services, and/or organised sport and recreational activities in communities, ranged from being virtually non-existent (4 communities) to apparently adequately funded and satisfactory (9 communities), with the majority (26 communities) falling in between these two extremes. That is, programs and some facilities in these latter communities were operational, but beset by problems relating to funding, personnel and/or facilities. In two communities insufficient information was collected to allow for any assessment of the programs.

In communities without functioning programs, their absence was seen as a major problem, as the following remarks by a night patrol worker in one community indicate:

*'We need that Sport and Rec to be running. Nothing much happening. Had a big meeting a couple of months ago because the bloke running it was not doing the right thing. He was just doing disco, the only sport was basketball in the rec hall, not even football outside or volleyball. If they get a person who can run it properly it'd make a big difference – probably stop young people sniffing. All they have to do [at the moment] is play in the playground [indicating kids playing next to the Shire office].'*

At the other end of the spectrum were the programs that appeared to be running well.

*The Shire now has a manager of the Youth Program on the Lands and there are two experienced youth workers in W..... running the local program. There are activities every day after school times utilising the basketball court, rec hall, drop in centre, gym, oval and pool (in summer). There are movie nights and discos a couple of evenings a week.*

The fieldworker went on to document a range of activities offered under the program, including an arts centre, gym and a hip hop program.

In 26 communities (63.4%), some sort of youth program and/or organised sport and recreation activities were in place, but struggling in the face of problems with ongoing funding, facilities or, in a few cases, bureaucratically imposed eligibility criteria. The following report, from a very remote community of about 350 people located north-east of Alice Springs, illustrates some of these issues:

*There is no dedicated youth centre building. The basketball court is the centre of activity. The toilets don't work properly. The youth worker has renovated an air-conditioned shipping container as an art and craft space for little kids. The kitchen is currently unusable and he cooks at home. He is trying to renovate the complex so that at the end of the year it is in a fit condition for his next year or the next person. He is very tired, working 70-hour weeks and has no phone or internet at home. He feels very supported by CAYLUS [Central Australian Youth Link-up Service, based in Alice Springs] but feels that the Shire is very unsupportive.*

Several communities in Cape York, in Far North Queensland, had been adversely affected by changes in staffing arrangements, as reported below from one such community.

*There is no formal youth program in P..... There was a sport and rec worker provided by PCYC (Police Citizens Youth Club). There used to be sport and rec officers in each community but a few years ago this funding was given to PCYC in Cairns, and they now send out fly-in-fly-out staff. There was a PCYC worker travelling to [the community] until recently; this person resigned and hasn't been replaced yet.*

This community has a fully equipped sport and recreation building, which was closed at the time of the fieldworker's visit in 2014 because of lack of staff. The fieldworker reported that it had also been closed at the time of a previous visit in 2012. In another community in Western Australia the fieldworker was told that new funding arrangements through the Attorney General's Department had resulted in a new model, under which a young person could see the youth worker only if they had had prior contact with police. Youth workers were also not permitted to work with anyone less than 10 years old or over 25 years.

## **6.6 Training and employment opportunities**

The relationship between employment and training in remote Indigenous communities, on the one hand, and patterns of drug use on the other, is a complex one that extends beyond the scope of this report. As in the case of youth, sport and recreational opportunities, however, fieldworkers were asked to gather information on the kinds of programs and opportunities that existed in communities visited. Again, it is important not to read these reports as an audit, but rather as an attempt to understand more about the contexts in which petrol sniffing and other drug use arise – or do not arise.

With a few exceptions, in almost all of the communities in the sample, attempts to generate employment opportunities for young people were found to be plagued by one or more of the following problems:

- dearth of training programs;
- dearth of employment opportunities;
- where employment opportunities are in principle available – for example, in nearby mines – disqualification of otherwise eligible young people because of issues such as prior drug offences, current drug use, or licence cancellations;
- absence of basic literacy and numeracy skills; and
- lack of motivation on the part of young people.

By way of comparison, here is a report from one of the exceptional communities, located in Far North Queensland, evoking achievement and energy:

*There was a continued sense of things happening - there were locals employed in*

*various roles in the agencies and the shop. [One program] had 325 on the books and 47 in jobs aged 16-60 yrs. Training run in last 12 months included Cert 2 in tourism, Cert 2 in Indigenous Housing and Cert 2 in Hospitality.*

*There was a particular emphasis on a group of young people aged 16-25, and 13 had travelled to Tully for leadership training – ten of these were regular attenders and there were plans that included work with Elders recording stories and catering, repairing a damaged park, a youth newsletter, development camps and designing their own uniform. It is planned that this group will be the core of the Youth Hub. The program is now more compliance-based (Centrelink) and if people don't work they don't get paid. Most people have to do 20 hours per week with some up to 30.*

The fieldworker reported that plans to build a kitchen in 2012 had been achieved. Future plans included a café, pizza service and coffee shop. Even here, however, barriers were reported, in particular, low literacy and numeracy levels, and alcohol and cannabis use. Literacy and numeracy were built into all training, but participation rates were said to decline to less than 50% on the Wednesday and Thursday of pension week.

More typical, unfortunately, was the situation described in another community:

*There are not many job opportunities at A.... RASAC (Regional Anangu Service Aboriginal Corporation) employs half a dozen community members and the store, clinic, school, aged care, Catholic Care, Money Mob, the internet centre and the Well Being Centre also employ people. Skill Hire, the RJCP provider, has 150 people on their books. They cannot provide work for everyone for 20hrs/week so they give them activities - women have been picking up tyres from the tip, painting them and using them as garden beds, the men have recently completed landscaping at the school and now are cleaning up the yards. Skill Hire organizes training for workers in connection with the activities they undertake. As one of the Skill Hire coordinators put it 'they get trained to death - they have bobcat certificates, excavator tickets - but nowhere to use them'.*

In some communities, fieldworkers' reports hint at the insidious ways in which drug use – especially gunja – works its way into an already depressed environment. In one community the fieldworker remarked that there was work available at a nearby mine and in associated businesses, but 'many young people can't pass the drug and alcohol tests or obtain criminal clearances or obtain driving licences'. In another community, a Project Officer reported that he had a team of six men who worked with him spasmodically, their attendance governed largely by the availability or otherwise of gunja. On the day of the fieldworker's interview the Project Officer was working by himself, as one team member was away and the rest were allegedly 'stoned'.

## 6.7 The place of LAF in community responses to petrol sniffing: summary

It is clear that LAF is widely regarded as having had a positive impact in communities by contributing to a decline in petrol sniffing. As one older lady said: 'Opal fuel? Everyone stopped because of that. It's really good.' Another community resident said: 'Opal fuel – everyone is really happy.' The perceived benefits are, however, qualified in several ways: firstly, in a few cases, by frustrations generated by the continuing accessibility of RULP; secondly, and more widely, by a pervasive belief that LAF harms engines, especially boat and other small engines. Some of the engine problems experienced may well have been wrongly attributed to LAF. The perceptions about harmful effects were not universally shared, with some people expressing a counter view that LAF either had no impact on engines, or even a positive impact. Overall, however, it appears that beliefs about the harmful effects of LAF on small engines have generated resistance in some quarters, which may take the form of declining to use LAF or retaining access to RULP alongside it.

While declines in petrol sniffing associated with LAF have been accompanied by high levels of alcohol and cannabis use in some communities, we found no evidence of a simple causal relationship between declining petrol sniffing and increasing alcohol and/or cannabis use. In many communities, the growth of cannabis use pre-dates the introduction of LAF and, in any case, use of these and other drugs is driven by a complex mix of supply and demand factors, rather than by any single cause. Both alcohol and cannabis are widely seen as now posing more serious problems than petrol sniffing.

The availability of qualified services to address petrol sniffing in communities has improved in recent years. In 2007-08 fewer than one-in-four communities surveyed at that time had either a regular visiting or an on-site qualified service; by 2013-14 more than half of the communities surveyed did so. The capacity of communities to implement their own responses to outbreaks of petrol sniffing also appears to have improved.

Similarly, the provision of youth, sport and recreation services in communities has improved in recent years. However, in the majority of communities these services continued to be hampered by shortfalls in funding, staffing and/or facilities. Another important factor shaping the context of petrol sniffing and other drug use is the availability of training and employment opportunities in communities. While some communities showed high levels of activity, in most communities efforts to provide training and employment for young people continued to be compromised by one or more of five factors: limited training programs; shortage of employment opportunities; disqualification from available opportunities as a result of prior drug or other offences, current drug use and/or licence cancellations; lack of literacy and numeracy skills; and lack of motivation on the part of some young people.

In sum, recent years have witnessed important gains, while major challenges remain.

## 6.8 The place of LAF in community responses to petrol sniffing: key findings

- In most communities where LAF has been introduced, it was described as being beneficial and widely accepted.
- Support, however, was qualified in two ways: firstly, by frustration arising from continuing availability of RULP from other outlets (in three communities); and secondly, by a belief that LAF harmed engines, especially small engines such as outboard motors, motor cycles, lawn-mowers and whipper-snippers. These beliefs are in some places contested. It is possible that engine problems are in some instances wrongly attributed to LAF but, regardless of the objective validity or otherwise of the complaints, they continue to influence the take-up of LAF and/or willingness to cease storing RULP.
- In most communities visited, levels of petrol sniffing were reported to have declined in the two years prior to being visited, or to have disappeared altogether. In a small number of communities levels were said to have remained the same or increased.
- More than half of communities were reported to be experiencing serious problems with alcohol and/or cannabis.
- The availability of qualified staff for addressing petrol sniffing in communities, and of youth programs and sport and recreation programs, have all improved in recent years, but in many cases face continuing problems with funding, staffing and/or facilities.
- Training programs and employment opportunities also continue to face challenging constraints.

## **7 Appendix One: Summaries of two previous studies of LAF**

As explained in Chapter 4, in 2005 and again in 2008 the authors of the present study were engaged by the then Department of Health and Ageing (DoHA) to conduct studies relating to the introduction and rollout of LAF. The first study was designed to obtain baseline data on prevalence of petrol sniffing in 88 Indigenous communities. The second study was an initial attempt to assess the impact of LAF in 20 communities.

Because both of these studies contained information about identified communities, neither was published. However, DoHA made summaries of both studies available on the departmental website at the time. These are now available on the PM&C website and are reproduced in this Appendix.

## 7.1 Data Collection (2005-2007) for the Petrol Sniffing Prevention Program: A Report for the Commonwealth Department of Health and Ageing (2007): Report Summary

### Introduction

The Data Collection for the Petrol Sniffing Prevention Program report undertaken by James Cook University intended to meet the following objectives:

- formulate a set of indicators for use as a minimum dataset in monitoring petrol sniffing prevalence and effects;
- to use these indicators to collect 'baseline' health and social outcomes data relating to petrol sniffing in 74 remote Indigenous communities throughout Australia that have begun using Opal fuel; and
- make recommendations relating to ongoing future monitoring of the impact of Opal fuel.

### Background

The Petrol Sniffing Prevention Program (PSPP) administered by the Department of Health and Ageing (DoHA) includes the provision of subsidised Opal, an unleaded fuel that contains lower levels of aromatics than regular unleaded petrol. The lower aromatic content reduces the long term effect of petrol sniffing on an individual.

The evaluation of the Comgas Scheme in 2004 recommended the need for improved data on petrol sniffing and more broadly substance use among Indigenous Australians.

### Methodology

**Table 7-1: Definitions of sniffing frequency categories**

Category		Definition
Non sniffer		Not known to have sniffed petrol or any other inhalant in past 6 months.
Current sniffer	Experimental	Believed to have sniffed petrol or other inhalant in past 6 months, but no evidence of regular use.
	Regular	Believed to have sniffed petrol or other inhalant regularly over past 6 months, but does not meet criterion of heavy use (i.e. at least once a week).
	Heavy	Has sniffed petrol or other inhalants at least weekly (whenever inhalants are available), over past 6 months.

The data collection instrument, used to measure prevalence, utilised community population lists from clinical registers and included all residents aged between

5-40 years inclusive. People in the population lists were categorised by gender, quinquennial age-group, and categories of use shown in Table 7-1.

The instrument used in this study was based on one developed by Nganampa Health Service used for conducting annual surveys of petrol sniffing in communities in the Anangu Pitjantjatjara Yankunytjatjara (APY) Lands of South Australia.

The project was approved by the James Cook University Human Research Ethics Committee. Permission was sought from each community in the study prior to visits taking place. Wherever possible, data collection was carried out by fieldworkers already known in the community concerned.

The fact that individual communities switched to using Opal at different times, and that some communities had previously been supplying Comgas (subsidised Avgas), means that the data collected for this project should not be viewed as true baseline (that is pre-Opal) data. It should be instead viewed as a series of snapshots in time that provide a reference point for future comparisons.

## Results

### *Prevalence*

- 74 communities were approached to participate in the data collection activities;
- in 47 cases the consultants were given direct access to the communities and relevant data;
- in 8 cases the consultants utilised alternative sources of data, these included utilising the Nganampa Health Survey for 7 communities on the APY Lands and the other case was where the Central Australian Youth Link Up Service (CAYLUS) had just completed data collection;
- in 12 cases, communities denied access on the grounds of no petrol sniffing in the community. In these cases, the consultants spoke to at least two key informants via phone to confirm the no sniffing status;
- in one case the community identified 1 user but would not allow further access to the community;
- in two cases, the regional health board would not allow access to the population lists;
- in two cases the consultants were unable to make contact with the communities due to remoteness and very small populations; and
- in the remaining two cases the consultants were unable to make arrangements to visit the communities.

The following table provides a snapshot of the prevalence and the frequency of petrol sniffing across regions in Australia where baseline data has been collected. For the purpose of this summary, data has been reported at the regional level only. This is due to the sensitive nature of data relating to petrol sniffing and ensures the privacy of individual communities is maintained.

**Table 7-2: Prevalence of sniffing in communities at the time of data collection, by region**

<b>Region</b>	<b>Pop. 5 - 40 yrs</b>	<b>No. of users</b>	<b>% users</b>	<b>Date of collection</b>
APY Lands	1969 (10 - 40 yrs)	219	11.1	Sept 05
Central Australia	4418	244	5.5	Nov 05 - Feb 06 (1 community Feb 07)
East Kimberley	547	32	5.8	Jan 06
Eastern Goldfields	92	5	5.4	Nov 06
Far North Queensland	1861	96	5.2	Feb - May 06
Ngaanyatjarra Lands (WA)	1035	145	13.9	Nov 05 - 06
Northern Central Australia sub region	2188	1	.05	Oct 06
Southern Central Australia sub region	619	102	16.4	Nov - Dec 05
Top End*	12985	266	2	Sept 06 - Feb 07
Western Central Australia sub region	1195	141	11.8	Dec 05 - Feb 06

\*This figure may be artificially low due to a lack of data from 4 communities.

*Note: The Central Australian region has been broken down into three distinct sub regions - Northern Central Australia, Southern Central Australia and Western Central Australia - in order to highlight more local variations. Alice Springs is not included in this data.*

#### *Health and social effect data*

To measure the health effect indicator, data was collected on the number of presentations to a health clinic as a result of petrol sniffing. The low rate of presentations confirmed the observations of many health centre staff that sniffers tend not to present at the clinic.

The indicator chosen for social impact was juvenile charges by community. Data was only able to be obtained for communities in South Australia. The results of the South Australian data indicated no direct relationship between the number of offences

and the number of inhalant users. The most sensitive indicator of the social impact of inhalant use appears to be, not the overall prevalence rate, but the rate of regular heavy use.

## Recommendations

The report outlined the following recommendations:

- The population list' method for data collection worked well and should be used where the following conditions were met: fieldworker was known in the community, and had pre-existing relationships there; an accurate population list was available; and community population size did not exceed 700 people.
- In communities of 1000+, data should be collected from key informant estimates rather than population lists to maximise the quality of data.
- Due to the limited reliability of the data collected for the health effect and public-order indicators, it is suggested that future data is collected for the prevalence of petrol sniffing indicator only.
- For future data collection, the regions used for the study should be consistent with those identified in this report.
- A lower cost alternative to monitoring all communities where Opal fuel is present is to select sentinel sites for monitoring.

## Conclusion

The Department of Health and Ageing is currently conducting an impact evaluation of Opal fuel with the final report expected in October 2008. This evaluation will assess the impact of the roll-out of Opal fuel in contributing to the changes in prevalence of petrol sniffing by comparing a second round of data collection to the baseline data presented in this report.

The recommendations that have been made in the baseline data collection report will be included in the Opal Impact Evaluation.

The outcomes of the Opal fuel impact evaluation will link closely to an overall evaluation of the Petrol Sniffing Strategy (Eight Point Plan) being conducted by the Department of Families, Housing, Community Services and Indigenous Affairs.

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*This is a summary of a report written by Peter d'Abbs (James Cook University) and Gillian Shaw (Bowchung Pty Ltd) for the Commonwealth Department of Health and Ageing (d'Abbs and Shaw, 2007).*

## **7.2 Evaluation of the Impact of Opal fuel: A report for the Commonwealth Department of Health and Ageing (2008): Executive Summary**

This study has been commissioned by the Petrol Sniffing Prevention Team of the Office of Aboriginal and Torres Strait Islander Health in the Commonwealth Department of Health and Ageing. Fieldwork for the project has been conducted between March and May 2008. The aim of the project is to:

1. Measure the prevalence of petrol sniffing in selected communities;
2. Determine the impact that Opal fuel had on the prevalence of petrol sniffing and other outcomes in selected communities;
3. Identify and briefly describe other factors that have contributed to the prevalence of petrol sniffing and other outcomes e.g. youth diversionary activities, night patrols, consistent legislation across jurisdictions, community leadership and community driven initiatives etc;
4. Identify and measure (where possible) any unintended consequences of the rollout of Opal fuel, for example geographical displacement, substance substitution, trafficking of petrol into communities; and
5. Develop conclusions and make recommendations based on the findings of the impact evaluation.

This study follows on from a baseline study conducted by the same authors between 2005 and 2006. In the baseline study 74 communities from all over remote Australia that were currently using, or shortly to begin using Opal fuel, were surveyed to establish an accurate count of the prevalence and frequency of petrol sniffing. This impact study re-visited 20 of the initial 74 sites and once again gathered prevalence and frequency data. In addition qualitative data was gathered on youth programs, and other factors that may have influenced sniffing levels.

### **Methodology**

The methodology used was essentially the same as that used for the baseline study, which, in turn, was based on the population list method developed by Nganampa Health to establish accurate counts of the prevalence and frequency of sniffing in the Anangu Pitjantjatjara lands in South Australia. Data collectors visited each of the 20 sites and gathered quantitative data on the prevalence and frequency of sniffing, and qualitative data on the perception of the impact of Opal fuel, and the funding, operation and quality of youth services in each site.

This study encountered methodological challenges associated with establishing prevalence and frequency in situations where sniffing is sporadic, and often at very low

levels. To counter these difficulties a key informant methodology was used in sites where sniffing levels were less than 10 people. The labelling of categories of petrol sniffing was also modified from that used in the baseline study, in that those who were believed to have sniffed petrol within the preceding six months, but not to have engaged in regular use, were defined as 'occasional' sniffers rather than 'experimental' sniffers. The reason for the change is that, in a context where availability of RULP has been reduced or eliminated, sporadic petrol sniffing is as likely to be a product of reduced availability rather than youthful experimentation.

## Results

This study allows us to make a number of clear statements about the change in levels of sniffing in the communities in the sample:

- the prevalence of sniffing has declined in 17 out of the 20 communities in the study;
- across the whole sample there has been a decrease of 431 (70%) in the number of people sniffing between baseline and follow up;
- in nine communities in the sample there was no sniffing at the time of follow up data collection, compared with two communities at baseline;
- in three communities in the sample the prevalence of sniffing has risen. In two of these cases there appear to be particular supply related factors at work, and RULP is easily available. In the third site there is substantial sniffing of aerosols, not petrol;
- Central Australia and the APY Lands are the regions with the largest decreases in prevalence of sniffing, with 94% and 93% decreases respectively;
- the number of people sniffing has dropped substantially across all frequency groups, with a fall of 60% in the number of people sniffing at occasional levels, of 85% at regular light levels, and of 90% at regular heavy levels;
- the substantial drop in the number of people sniffing at regular heavy levels indicates a comparable substantial decrease in the negative social impact caused by sniffing in communities in the sample, this is supported by qualitative feedback;
- we found no reports of individuals accessing substance use services to help with the move away from sniffing;
- there is a statistically significant relationship between the distance from each community to the nearest ULP outlet, and the size of the decrease in the prevalence of sniffing at each community, which indicates that the use of Opal fuel has had a significant role in the decrease in the prevalence of sniffing; and

- qualitative feedback indicates that most residents of the communities who have experienced a decline in sniffing attribute the cause of that decline, at least in part, to the introduction of Opal fuel.

These conclusions point to a positive change in the number of people sniffing, and the frequency with which they sniff in most communities in the sample. This change cannot be solely attributed to the use of Opal fuel, as two communities who have experienced no change in the availability of petrol also recorded decreases in prevalence between baseline and follow up. However, as noted, many residents of the sample communities believed that Opal fuel had played a significant role in the reduction of sniffing in their community.

Conclusions can also be drawn about the provision of youth services in communities within the sample:

- 14 communities in the sample had a youth program at the time of follow up data collection and 6 did not;
- 8 out of 20 communities experienced an increase in the availability of youth services between baseline and follow up;
- 7 out of 20 communities experienced no change in the availability of youth services between baseline and follow up (3 of which had none at either point in time);
- 2 out of 20 communities experienced a decrease in the availability of youth services between baseline and follow up;
- there has been no coordination between the provision of Opal fuel and access to youth services in communities in the sample;
- the quality and size of the youth programs varied substantially across the sample; and
- youth services were more consistent and of better quality in regions where centralised support was available.

In summary the access to and quality of youth services were patchy, and the funding sources for youth services were widely varied. There was no correlation between the provision of youth services and the size of the decrease in the prevalence of sniffing. However, given the variation in the quality of the youth programs available, this is not unexpected.

In addition to these summary conclusions, we feel that it is appropriate to issue site alerts for three communities in the sample (*identities of communities removed*).

## Recommendations

The recommendations cover three areas – the need for, proposed design and implementation of ongoing monitoring, the need for youth services and a proposal for the best system to improve the quality of existing youth services, and the need for research into the impact of Opal fuel on the engines of boats.

### 1. Monitoring

The initial recommendation regarding monitoring is that it is essential that an ongoing bureaucratic presence on volatile inhalants is maintained. This presence can function to maintain monitoring, and respond to changes in sniffing levels in particular locations and on a national level if necessary. The authors urge ongoing monitoring of levels of sniffing of all volatiles. We propose a design of re-visiting the sites in this sample every 2 years, and the use of the methodology used in this study.

### 2. Youth Services

Additional funding is needed in the six sites with no youth services in order to enable youth services to be successfully run. In addition both the Top End and Far North Queensland regions would benefit from the establishment of a centralised agency that provides support to youth workers in the communities of the region.

### 3. The impact of Opal fuel on the engines of boats

An investigation needs to be made into the impact of Opal fuel on the engines of boats.

### 4. Reminders to Councils to stipulate that contractors use Opal fuel

Feedback indicates that contractor's equipment is a common source of ULP used for sniffing. We recommend that educative material and verbal reminders given by staff working with communities experiencing sniffing stress the need for Councils and other employers to stipulate that contractors must use Opal fuel, and lock away any volatile substances such as glues that they use.

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*This is a summary of a report written by Peter d'Abbs (James Cook University) and Gillian Shaw (Bowchung Pty Ltd) for the Commonwealth Department of Health and Ageing (d'Abbs and Shaw 2008a).*

## 8 Appendix Two: Baseline data for 12 communities visited in 2013

As described in the Methods section (section 2.2), 12 communities were added to the sample in 2013. The Department wanted baseline data collected from these communities to help inform and scope any possible future rollout of LAF in these regions. This Appendix presents the prevalence data from these 12 communities.

**Table 8-1: Total number of people reported sniffing, 12 communities, by community, % population, and distance from RULP**

Region	Regional ID	2011 Pop 5 - 39 yrs	No. people sniffing 2013-14	% 5-39 pop	Kms to nearest RULP
WA (Goldfields)	4	292	11	3.8	100
WA (Goldfields)	3	414	12	2.9	0
NT (Katherine)	5	180	5	2.8	230
NT (Barkly)	1	342	17	5.0	40
NT (Central Australia)	4	107	1	0.9	1
Far North Queensland	9	526	9	1.7	2
Far North Queensland	4	644	0	0.0	0
Far North Queensland	6	176	7	4.0	5
Far North Queensland	7	99	2	2.0	5
Far North Queensland	5	271	0	0.0	5
Far North Queensland	8	271	0	0.0	5
Far North Queensland	12	1425	53	3.7	0

Otherwise all communities came from regions that were already represented in the study. Table 8-1 above presents the number of people sniffing in each community, the

proportion of the population aged between 5 and 39 years that are sniffing, and the distance of the community from RULP. (Note here that this distance was correct in 2013 when the data was collected. Since then a number of communities have received LAF.)

As would be expected for a baseline data collection, several of the communities were experiencing high levels of sniffing, and all communities were situated very close to RULP outlets.

Table 8-2 presents the gender distribution of people sniffing in the 12 communities.

**Table 8-2: Gender of people sniffing, 12 communities, by community, 2013**

Regional ID	Males	Females	% male
4	6	5	54.5
3	10	2	83.3
5	3	2	60.0
1	13	4	76.5
4	1	0	100
9	6	3	66.7
4	0	0	-
6	7	0	100
7	2	0	100
5	0	0	-
8	0	0	-
12	31	22	58.5
	<b>79</b>	<b>38</b>	<b>67.5</b>

This gender distribution reinforces the findings from other communities – that approximately 75% of people who sniff are males.

Table 8-3 presents the age distribution of people sniffing for the 12 communities.

The age distribution of people sniffing in these 12 communities is slightly different to communities that have had access to LAF. The proportion of 15 – 24 year olds is smaller (49%), and the proportion of 10 – 14 year olds (47%) is much higher.

**Table 8-3: Age distribution of people sniffing, 12 communities, by community, 2013**

Regional ID	5-9		10-14		15-24		25-39		Total	
	No.	%	No.	%	No.	%	No.	%	No.	%
4	0	0	8	72.7	3	27.2	0	0.0	11	100.0
3	1	8.3	10	83.3	1	8.3	0	0.0	12	100.0
5	0	0	3	60.0	2	40.0	0	0.0	5	100.0
1	0	0	3	17.6	13	76.5	1	5.8	17	100.0
4	0	0	1	100.0	0	0.0	0	0.0	1	100.0
9	0	0	5	55.5	3	33.3	1	11.1	9	100.0
4	0	0	0	0.0	0	0.0	0	0.0	0	100.0
6	1	14.3	0	0.0	6	85.7	0	0.0	7	100.0
7	0	0.0	0	0	2	100.0	0	0.0	2	100.0
5	0	0.0	0	0	0	0.0	0	0.0	0	100.0
8	0	0.0	0	0	0	0.0	0	0.0	0	100.0
12	2	3.8	24	45.3	27	50.9	0	0.0	53	100.0
	<b>4</b>	<b>3.4</b>	<b>54</b>	<b>46.2</b>	<b>57</b>	<b>49</b>	<b>2</b>	<b>1.7</b>	<b>117</b>	<b>100.0</b>

Finally, Table 8-4 presents the frequency of sniffing by community.

This distribution is markedly different to communities with access to LAF. In those communities there is a higher proportion of occasional and regular sniffing, and a lower proportion of heavy sniffing. However the data in the table below is very skewed by one community, where there were 51 people sniffing at heavy levels.

**Table 8-4: Frequency of sniffing 12 communities, by community, 2013**

<b>Regional ID</b>	<b>Occasional</b>		<b>Regular</b>		<b>Heavy</b>		<b>Total</b>	
	<b>No.</b>	<b>%</b>	<b>No.</b>	<b>%</b>	<b>No.</b>	<b>%</b>	<b>No.</b>	<b>%</b>
4	7	63.6	4	36.4	0	0.0	11	100.0
3	8	66.7	4	33.3	0	0.0	12	100.0
5	1	20.0	4	80.0	0	0.0	5	100.0
1	8	47.1	9	52.9	0	0.0	17	100.0
4	1	100.0	0	0.0	0	0.0	1	100.0
9	9	100.0	0	0.0	0	0.0	9	100.0
4	0	0.0	0	0.0	0	0.0	0	100.0
6	7	100.0	0	0.0	0	0.0	7	100.0
7	0	0.0	0	0.0	2	100.0	2	100.0
5	0	0.0	0	0.0	0	0.0	0	100.0
8	0	0.0	0	0.0	0	0.0	0	100.0
12	2	3.8	0	0.0	51	96.2	53	100.0
	<b>43</b>	<b>37</b>	<b>21</b>	<b>18</b>	<b>53</b>	<b>45</b>	<b>117</b>	<b>100.0</b>

## 9 Appendix Three: Additional Tables

**Table 9-1: Communities included in current and previous studies of LAF rollout**

Region	Regional ID	2005-07	2007-08	2011-12	2013-14
Far Nth Qld	1	•	•	•	•
	2			•	•
	3			•	•
	4				•
	5				•
	6				•
	7				•
	8				•
	9				•
	10	•	•	•	•
	11	•	•	•	•
	12				•
NT (Barkly)	1	•			•
	2			•	•
	3	•		•	•
	4			•	•
	5			•	•
NT (Central Aust.)	1	•	•		
	2	•	•		
	3	•		•	•
	4	•	•		•
	5	•			
	6	•	•	•	•
	7	•			
	8	•	•	•	•
	9	•		•	•
	10	•			
	11	•			
	12	•		•	•
	13	•		•	•
	14	•	•		
NT (E. Arnhem)	1	•	•	•	•
	2	•	•	•	•
	3	•		•	•
	4	•			

Region	Regional ID	2005-07	2007-08	2011-12	2013-14
	5			•	•
NT (Katherine reg.)	1			•	•
	2			•	•
	3			•	•
	4	•		•	•
	5				•
	6			•	•
NT (Top End)	1	•	•	•	•
	2			•	•
	3	•			
	4	•			
	5	•			
	6	•			
	7	•			
	8			•	•
SA	1	•	•	•	•
	2	•	•	•	•
	3	•			
	4	•			
	5	•		•	•
	6	•	•	•	•
	7	•			
	8	•			
WA (E. Kimberley)	1	•	•	•	•
	2	•			
	3	•			
	4			•	•
	5			•	•
	6			•	•
	7				
	8				
WA (Goldfields)	1	•		•	•
	2	•	•		
	3				•
	4				•
	5			•	•

Region	Regional ID	2005-07	2007-08	2011-12	2013-14
WA (Ngaanyatjarra)	1	•	•	•	•
	2	•	•	•	•
	3	•		•	•
	4	•			
	5	•			
	6	•			
	7	•			
	8	•			
	9	•	•	•	•
<b>Total</b>	<b>N</b>	<b>52</b>	<b>20</b>	<b>41</b>	<b>53</b>

NB: Communities in shaded rows have had data collected four times, and are included in the analysis of change in prevalence over the last ten years.

**Table 9-2: Availability of LAF and RULP in communities in 2011-12 and 2013-14**

Region	Regional ID	LAF 2011-12	LAF 2013-14	RULP 2011-12	RULP 2013-14
Far Nth Qld	1	Yes	Yes	No	No
	2	Yes	Yes	No	No
	3	Yes	Yes	No	No
	4		No		Yes
	5		No		No
	6		No		No
	7		No		No
	8		No		No
	9		No		No
	10	Yes	Yes	No	No
	11	Yes	Yes	No	No
	12		Yes		No
NT (Barkly)	1		Yes		No
	2	Yes	Yes	No	No
	3	No	Yes	Yes	No
	4	Yes	Yes	No	No
	5	No	Yes	Yes	Yes
NT (Central Aust.)	3	Yes	Yes	No	No
	4		Yes		No
	6	Yes	Yes	No	No
	8	Yes	Yes	No	No
	9	No	No	No	No
	12	Yes	Yes	No	No
NT (E. Arnhem)	1	Yes	Yes	No	No
	2	Yes	Yes	No	No

Region	Regional ID	LAF 2011-12	LAF 2013-14	RULP 2011-12	RULP 2013-14
	3	Yes	Yes	No	No
	5	No	No	No	No
NT (Katherine reg.)	1	No	No	No	No
	2	No	No	No	No
	3	No	No	No	No
	4	Yes	Yes	No	No
	5		Yes		No
	6	No	No	No	No
NT (Top End)	1	Yes	Yes	No	No
	2	Yes	Yes	No	No
	8	Yes	Yes	No	No
SA	1	No	No	No	No
	2	Yes	Yes	No	No
	5	Yes	Yes	No	No
	6	Yes	Yes	No	No
WA (E. Kimberley)	1	Yes	Yes	No	No
	4	No	Yes	Yes	Yes
	5	Yes	No	No	Yes
	6	No	No	Yes	Yes
WA (Goldfields)	1	Yes	Yes	No	No
	3		No		Yes
	4		Yes		No
	5	Yes	No	Yes	Yes
WA (Ngaanyatjarra)	1	Yes	Yes	No	No
	2	Yes	Yes	No	No
	3	Yes	Yes	No	No
	9	Yes	Yes	No	No
Total	N	41	53	41	53

**Table 9-3: Gender distribution of people sniffing petrol, by community, 2011-12 and 2013-14**

Region	ID	Total male 2011-12	Total female 2011-12	Total sniffing 2011-12	Total male 2013-14	Total female 2013-14	Total sniffing 2013-14
Far Nth Qld	1	0	0	0	0	0	0
	2	0	0	0	0	0	0
	3	0	0	0	6	4	10
	10	6	4	10	0	0	0
	11	7	0	7	14	2	16
NT (Barkly)	2	2	0	2	0	0	0
	3	8	2	10	0	0	0

Region	ID	Total male 2011-12	Total female 2011-12	Total sniffing 2011-12	Total male 2013-14	Total female 2013-14	Total sniffing 2013-14
	4	14	0	14	12	12	24
	5**	5	6	11	-	-	35
NT (Central Aust.)	3	2	2	4	1	0	1
	6	1	0	1	1	1	2
	8	1	0	1	5	0	5
	9	0	0	0	10	0	10
	12	11	0	11	4	0	4
	13	0	0	0	3	2	5
NT (E. Arnhem)	1	0	0	0	0	0	0
	2	0	0	0	4	3	7
	3	0	0	0	6	0	6
	5	39	22	61	5	2	7
NT (Katherine reg.)	1	17	1	18	4	2	6
	2	5	0	5	0	1	1
	3	1	0	1	3	0	3
	4	1	0	1	4	0	4
	6	0	0	0	2	0	2
NT (Top End)	1	15	1	16	8	0	8
	2*	-	-	23	9	0	9
	8	10	0	10	1	0	1
SA	1	5	0	5	2	0	2
	2	0	0	0	2	1	3
	5	2	0	2	1	0	1
	6	3	1	4	14	1	15
WA (E. Kimberley)	1	1	0	1	0	0	0
	4	0	0	0	0	0	0
	5	0	0	0	0	0	0
	6	0	0	0	0	0	0
WA (Goldfields)	1	1	0	1	0	0	0
	5	18	1	19	2	6	8
WA (Ngaanyatjarra)	9	1	0	1	0	0	0
	2	0	0	0	0	0	0
	1	35	15	50	8	1	9
	3	0	0	0	0	0	0
<b>Total</b>		<b>211</b>	<b>55</b>	<b>289</b>	<b>131</b>	<b>38</b>	<b>204</b>

\*Gender missing for 23 identified people sniffing in one Top End community in 2011-12.

\*\*Gender missing for identified 35 people sniffing in one NT Barkly community in 2013-14.

**Table 9-4: Age distribution of people sniffing petrol, 2011-12, by community**

Region	ID	5-9	10-14	15-24	25-39	Total
Far Nth Qld	1	0	0	0	0	0
	2	0	0	0	0	0
	3	0	0	0	0	0
	10	0	0	10	0	10
	11	0	0	7	0	7
NT (Barkly)	2	0	0	2	0	2
	3	0	3	7	0	10
	4	0	1	13	0	14
	5	0	9	2	0	11
NT (Central Aust.)	3	0	0	1	3	4
	6	0	1	0	0	1
	8	0	0	1	0	1
	9	0	0	0	0	0
	12	2	8	1	0	11
	13	0	0	0	0	0
NT (E. Arnhem)	1	0	0	0	0	0
	2	0	0	0	0	0
	3	0	0	0	0	0
	5	0	7	30	24	61
NT (Katherine reg.)	1	0	6	10	2	18
	2	0	0	4	1	5
	3	0	0	1	0	1
	4	0	0	1	0	1
	6	0	0	0	0	0
NT (Top End)	1	0	2	13	1	16
	2*	.	-	-	-	23
	8	0	5	5	0	10
SA	1	0	4	1	0	5
	2	0	0	0	0	0
	5	0	2	0	0	2
	6	0	0	0	4	4
WA (E. Kimberley)	1	0	0	1	0	1
	4	0	0	0	0	0
	5	0	0	0	0	0
	6	0	0	0	0	0
WA (Goldfields)	1	0	0	0	1	1
	5	2	14	3	0	19

Region	ID	5-9	10-14	15-24	25-39	Total
WA (Ngaanyatjarra)	9	0	0	1	0	1
	2	0	0	0	0	0
	1	0	17	32	1	50
	3	0	0	0	0	0
<b>TOTAL</b>		<b>4</b>	<b>79</b>	<b>146</b>	<b>37</b>	<b>289*</b>

\*Age data missing for one Top End community in 2011-12

**Table 9-5: Age distribution of people sniffing petrol, 2013-14, by community**

Region	ID	5-9	10-14	15-24	25-39	Total
Far Nth Qld	1	0	0	0	0	0
	2	0	0	0	0	0
	3	0	5	5	0	10
	10	0	0	0	0	0
	11	1	8	7	0	16
NT (Barkly)	2	0	0	0	0	0
	3	0	0	0	0	0
	4	0	10	14	0	24
	5	4	6	21	4	35
NT (Central Aust.)	3	0	0	1	0	1
	6	0	1	1	0	2
	8	0	0	4	1	5
	9	0	2	8	0	10
	12	0	3	1	0	4
	13	0	2	3	0	5
NT (E. Arnhem)	1	0	0	0	0	0
	2	0	7	0	0	7
	3	0	5	1	0	6
	5	0	5	2	0	7
NT (Katherine reg.)	1	0	1	5	0	6
	2	0	0	1	0	1
	3	0	0	3	0	3
	4	0	0	4	0	4
	6	0	0	1	1	2
NT (Top End)	1	0	1	6	1	8
	2	0	5	3	1	9
	8	0	1	0	0	1
SA	1	0	0	0	2	2
	2	0	0	1	2	3
	5	0	0	0	1	1
	6	3	8	0	4	15

Region	ID	5-9	10-14	15-24	25-39	Total
WA (E. Kimberley)	1	0	0	0	0	0
	4	0	0	0	0	0
	5	0	0	0	0	0
	6	0	0	0	0	0
WA (Goldfields)	1	0	0	0	0	0
	5	0	3	5	0	8
WA (Ngaanyatjarra)	9	0	0	0	0	0
	2	0	0	0	0	0
	1	0	1	8	0	9
	3	0	0	0	0	0
<b>TOTAL</b>		<b>8</b>	<b>74</b>	<b>105</b>	<b>17</b>	<b>204</b>

**Table 9-6: Frequencies of sniffing, 2011-12, by community**

Region	ID	Occasional	Regular	Heavy	Total
Far Nth Qld	1	0	0	0	0
	2	0	0	0	0
	3	0	0	0	0
	10	9	1	0	10
	11	1	5	1	7
NT (Barkly)	2	0	1	1	2
	3	6	2	2	10
	4	4	6	4	14
	5	9	2	0	11
NT (Central Aust.)	3	0	0	4	4
	6	1	0	0	1
	8	0	1	0	1
	9	0	0	0	0
	12	11	0	0	11
	13	0	0	0	0
NT (E.Arnheim)	1	0	0	0	0
	2	0	0	0	0
	3	0	0	0	0
	5	43	3	15	61
NT (Katherine reg.)	1	8	4	6	18
	2	4	0	1	5
	3	0	0	1	1
	4	1	0	0	1
	6	0	0	0	0
	NT (Top End)	1	6	0	10
2(a)		-	-	-	23

	8	9	0	1	10
SA	1	4	1	0	5
	2	0	0	0	0
	5	1	1	0	2
	6	4	0	0	4
WA (E.Kimberley)	1	1	0	0	1
	4	0	0	0	0
	5	0	0	0	0
	6	0	0	0	0
WA (Goldfields)	1	0	1	0	1
	5	2	11	6	19
WA (Ngaanyatjarra)	9	1	0	0	1
	2	0	0	0	0
	1	17	12	21	50
	3	0	0	0	0
<b>Total</b>		<b>142</b>	<b>51</b>	<b>73</b>	<b>289</b>

(a) Frequencies missing for one Top End community in 2011-12.

**Table 9-7: Frequencies of sniffing 2013-14, by community**

Region	ID	Occasional	Regular	Heavy	Total
Far Nth Qld	1	0	0	0	0
	2	0	0	0	0
	3	10	0	0	10
	10	0	0	0	0
	11	8	4	4	16
NT (Barkly)	2	0	0	0	0
	3	0	0	0	0
	4	9	5	10	24
	5	0	31	4	35
NT (Central Aust.)	3	1	0	0	1
	6	2	0	0	2
	8	5	0	0	5
	9	0	0	10	10
	12	4	0	0	4
	13	5	0	0	5
NT (E. Arnhem)	1	0	0	0	0
	2	7	0	0	7
	3	6	0	0	6
	5	5	2	0	7
NT (Katherine reg.)	1	2	4	0	6
	2	0	0	1	1
	3	2	0	1	3

Region	ID	Occasional	Regular	Heavy	Total
	4	4	0	0	4
	6	1	1	0	2
NT (Top End)	1	8	0	0	8
	2	4	0	5	9
	8	1	0	0	1
SA	1	0	2	0	2
	2	0	0	3	3
	5	1	0	0	1
	6	14	1	0	15
WA (E. Kimberley)	1	0	0	0	0
	4	0	0	0	0
	5	0	0	0	0
	6	0	0	0	0
WA (Goldfields)	1	0	0	0	0
	5	2	4	2	8
WA (Ngaanyatjarra)	9	0	0	0	0
	2	0	0	0	0
	1	9	0	0	9
	3	0	0	0	0
<b>Total</b>		<b>110</b>	<b>54</b>	<b>40</b>	<b>204</b>

## 10 Appendix Four: Community Report template

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<p><i>discovery for a healthy tomorrow</i></p>	

### Petrol Sniffing Prevention Program Community Report Template

Please use this template to write your report for the community.

Please make sure that you answer each area with as much detail as possible.

The text boxes will show scroll bars if you are writing more than will fit into the text box.

Community:

Date of fieldwork:

Data Collector:

## Frequency and Prevalence

5. No. of **community members** aged 5 to 39 years:

Age	5-9	10-14	15-24	25-39	Total
Male					
Female					
Total					

No. of **non-sniffers** (5 to 39) by age category:

Age	5-9	10-14	15-24	25-39	Total
Male					
Female					
Total					

No. of **occasional sniffers** (5 to 39) by age category:

Age	5-9	10-14	15-24	25-39	Total
Male					
Female					
Total					

No. of **regular sniffers** (5 to 39) by age category:

Age	5-9	10-14	15-24	25-39	Total
Male					
Female					
Total					

No. of **regular heavy sniffers** (5 to 39) by age category:

Age	5-9	10-14	15-24	25-39	Total
Male					
Female					
Total					

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## Information on current sniffing

6. Perception of change over the last 2 years:

7. Description of any single incident type sniffing - what it might indicate:

8. What is being sniffed

9. Where is it from:

10. Is there any community response to limit access to volatiles such as glues and aerosols?

11. Damage to the community from sniffers - eg break ins, morale:

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## Perception of the impact of Opal

12. Impact of Opal:

13. Feedback on the mechanical impact of Opal (ie on cars, whipper snippers etc)

14. Impressions of the acceptance of Opal - grudging, satisfied etc

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## Information on other drug use by young people

15. Commonly used other substances:

16. Extent of the problem:

17. Is there a perception that individuals have replaced sniffing petrol with other substances:

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## If there is sniffing, how does the community/services respond

### 18. Details of what happens when people sniff

Who helps - services that people are referred to

--

Strengths

--

Barriers

--

Support available

--

Support needed

--

Police action

--

School action

--

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19. Any support provided through the Petrol Sniffing Strategy Unit or through the Regional Coordinators

**What lifestyle, employment and training options are available for young people?**

20. Employment and training

Details, usage,  
staffing, popularity

21. Youth Programs

Details, usage,  
staffing, popularity

Opening hours

22. Others

## 11 Appendix Five: Instructions to fieldworkers

### 11.1 Administrative details

If necessary, you should have a permit before you travel.

### 11.2 Local research assistants

It would also be good to use your contacts to organise for someone to be your research assistant. Each community has a budget for 3 days of local research assistance at \$62.50/hour. The maximum payment is \$1500 per community. Work out the tax status of the money with your contact. If they have a job already they will need to sort out the tax themselves. If they don't you need to get your research assistant to sign a hobbyist tax form so that they do not get taxed on the money. Keep the tax form and put it in with your report. If you haven't used a tax form, please get them to sign a receipt to say they have received the money.

Please don't pay people for more time than they have worked.

### 11.3 Data Collection

It is important that everyone use exactly the same methods when collecting and summarising the data.

### 11.4 Determining a person's sniffing status

As of 2012 we are not using population lists to determine the number of people sniffing in a community. We could not get access to the lists, or the proposal through ethics committees, so we are using a different methodology.

You need to sit with your key informants and go through subdivisions of the population instead of an actual population list. For example you would first ask 'Can you think of any little girls – primary school kids – who sniff? If a person is identified, you record *their initials only*. (You also need to record the first two letters of their bush name (or another identifier that works) so that you can check that you are not double counting people with the same initials.)The same question is then asked about little boys from primary school and so on. **Don't remove the list of initials generated through this process from the community.**

The sub-divisions of the population to use are as follows:

- Primary school aged girls (little kids)
- Primary school aged boys
- Young women - high school to 'too young to go to pub'
- Youngfellas – high school to 'too young to go to pub'
- Older women –women who can buy grog
- Older men - men who can buy grog

We have chosen these population groupings and descriptions in order to try to create mutually exclusive categories, and thereby avoid possible double counting.

You need to talk with three different people to determine someone’s sniffing status. If 3/3 or 2/3 of the key informants agree that a person is sniffing, then you record that person as a sniffer. If only one person identifies someone as a sniffer, you need to judge the strength of their assertion. For example if the person in question is a family member of your key informant, and they are well placed to know of their sniffing habits, then record that person as a sniffer, despite the fact that they have only been identified by one person. However if the single key informant is unsure, then do not mark that person as a sniffer.

### 11.5 Determining a person’s sniffing frequency

Once a person has been identified as a sniffer during the process of going through the population list, you need to ask how often they sniff. Use the following definitions – they are also provided in the interview guide.

**Table 11-1: Definitions of sniffing frequency categories**

Category	Frequency	Definition
Non-sniffer		Not known to have sniffed petrol or any other inhalant in past 6 months.
Current sniffer	Experimental/occasional	Believed to have sniffed petrol or other inhalant in past 6 months, but no evidence of regular use.
	Regular	Believed to have sniffed petrol or other inhalant regularly over past 6 months, but does not meet criterion of heavy use (i.e. at least once a week).
	Heavy	Has sniffed petrol or other inhalants at least weekly (whenever inhalants are available), over past 6 months.

It is likely that key informants will vary on their assessment of how often someone sniffs. Use the same system described above to determine how you describe them in your summary for each community. However if you have three different ratings from the three different key informants, then you need to decide which of the key informants is better placed to be knowledgeable about the person’s sniffing habits, and record their assessment in your data tables.

## 11.6 Interviews

There are two aims of this section of the research. The first is to find out about Opal in the community – its history, people’s perception of its impact on sniffing, and also on individuals’ lives.

The second is to get a picture of the factors that are impacting on young people in the community, and whether the community can offer its young people options for a reasonably quality of life. The thinking behind this is that often sniffing can be interpreted as symptomatic of underlying issues, and we need to be able to provide evidence of what services are in each community that help young people deal with any of the underlying issues, and whether or not these services have any impact on sniffing.

There are two interview guides, one for community members, and the other for service providers. You need to interview a minimum of three community members, but please try to interview all people who worry for young people’s issues. You also need to interview **all** service providers who have a role in service delivery to young people.

You will need to speak with the following services:

- Police
  - Focus particularly on supply issues and the behaviour of young people – do they see much sniffing related offending
- School staff
  - Focus particularly on the impact of youth programs on school attendance, young people’s behaviour.
- Youth services
- Shire/Council staff
- Anyone else who has been consistently raised as someone who is knowledgeable

## 11.7 Report

You will need to provide a report that has the frequency and prevalence tables filled out, and that provides a summary of the findings of your community member and service provider interviews. You will need to write this during your time in the community, as there is no budget for additional report writing time – so schedule your community time accordingly.

## 12 References

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