



Monitoring trends in prevalence of petrol sniffing in selected
Aboriginal communities: an interim report

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Table of Contents

1	Executive summary	3
2	Introduction	5
3	Background: monitoring petrol sniffing –origins and approaches	6
4	Methodological issues entailed in monitoring petrol sniffing prevalence.....	8
5	Methodological approach adopted in present study	10
5.1	Sampling.....	10
5.2	Data collection.....	11
5.2.1	Collecting quantitative data	12
5.3	Summary	14
6	Interim findings	15
6.1	Trends in sniffing prevalence	16
6.2	Transference from petrol to other substances.....	20
6.3	Summary of interim findings	20
7	Appendix 1: Communities in current sample, by region and involvement in earlier studies	22
8	Appendix 2: Instructions to data collectors in the Petrol Sniffing Prevention Program Data Collection Project	23
9	Appendix 3: Interview schedules for the collection of complementary data	27
10	References	33

1 Executive summary

1. This report presents interim findings from a study of petrol sniffing prevalence in a sample of 41 Australian Aboriginal communities. The study was commissioned by the Commonwealth Department of Health and Ageing (DoHA) in order to contribute to monitoring the impact of an ongoing rollout of low aromatic fuel (LAF) in communities beset by petrol sniffing, and is being conducted by Menzies School of Health Research, Darwin, in partnership with Bowchung Pty Ltd, Canberra. The study commenced in 2011 and is scheduled for completion in 2014.
2. The 41 communities are drawn from nine regions located in Northern Territory, South Australia, Western Australia and Queensland. Communities were selected on the basis of meeting one of two criteria: (1) communities suited to monitoring the impact of LAF because they were included either in an earlier baseline study for the LAF rollout, or in a study conducted in 2007-08, or both; (2) communities in which, regardless of whether LAF is available, there is evidence of an emerging or recurring petrol-sniffing problem. In addition to meeting one of these criteria, communities were included in the study only if they consented to participate. Twenty-seven communities were selected on the basis of the first criterion, 14 on the basis of the second criterion. The second criterion is particularly relevant for informing the ongoing development and expansion of a regional approach to rolling out LAF. It should be noted, however, that the 41 communities in the sample do not represent all communities in which petrol sniffing is believed to occur.
3. Under the project plan, each of the 41 communities in the study is to be visited twice in the course of the study, at an interval of two years.
4. Two kinds of data are being collected in the project: quantitative data on prevalence and frequency of sniffing; complementary qualitative data on other factors that may effect the impact of LAF. This interim report presents quantitative findings only.
5. For reasons set out in the report, the data collection strategy adopted for assessing prevalence of petrol sniffing is the so-called 'proxy respondent' method, in which several (usually three) informants in a community are asked to identify current sniffers according to given frequency, age-group and gender categories. Numbers of sniffers are then aggregated for each of these categories. No information about individual people sniffing petrol is recorded. For purposes of the study, a person is considered to be a 'current' sniffer if he or she is believed to have sniffed petrol and/or another inhalant within the six months preceding data collection.
6. The interim findings can be summarized as follows:
 - In the 41 communities in the present survey, a total of 276 current sniffers were found, most of them located in four of the nine regions from which communities were selected, namely Top End, Katherine and Barkly regions of the NT and the Goldfields region of WA. The 19 communities located in the remaining five regions accounted between them for only 47 sniffers.
 - Four out of five sniffers (79.7%) were male, and over half (58.0%) were aged 15-24 years.

- A little over half (51.8%) of the 276 current sniffers were 'occasional', and a little over one quarter (26.5%) were 'heavy' sniffers – that is, they were believed to have sniffed petrol at least weekly over the preceding six months.
 - In 15 of the 41 communities, comparative data are available for the 2005 baseline survey and the 2007-2008 impact survey, as well as the current survey.
 - In these 15 communities, the total number of current sniffers has continued to decline, from 546 in 2005-7 to 160 in 2008, to 97 in 2011-12. The decline, however, has not been uniform. In communities in the Goldfields region of WA the number of sniffers *increased* from 30 in 2008 to 51 in 2011-12, while in the Top End (NT) the rate of decline between 2008 and 2011-12 was much slower than between 2005-7 and 2008. (In two other regions where the number of sniffers in the current survey gave cause for concern – Katherine and Barkly regions in the NT – no comparative data are available from the earlier surveys.)
 - Between 2008 and 2011-12 the numbers of sniffers in the two younger age – groups – 5-9 years and 10-14 years – continued to decline from levels recorded in 2005-07. However, the numbers of current sniffers in the 15-24 years category in these 15 communities increased from 62 in 2008 to 69 in 2011-12 (a change that could, however, reflect random fluctuations rather than the emergence of a new trend).
 - While the number of occasional sniffers in these communities continued to decline, the numbers of heavy sniffers in 14 communities (frequency data were not available for one community) rose from 18 in 2008 to 32 in 2011-12.
7. Taken together, these trends and patterns suggest that, while the rollout of LAF continues to be associated with significantly reduced levels of petrol sniffing compared with baseline levels recorded in 2005-07, there are also signs of continuing and in some cases increasing levels of petrol sniffing. This is particularly apparent in communities that are not yet incorporated into a regional strategy for rolling out LAF.

2 Introduction

This report presents interim findings from a study of petrol sniffing prevalence in a sample of Australian Aboriginal communities that commenced in 2011 and is scheduled for completion in 2014. The study was commissioned by the Commonwealth Department of Health and Ageing in order to contribute to monitoring the impact of an ongoing rollout of low aromatic fuel (LAF) in communities beset by petrol sniffing, and is being conducted by Menzies School of Health Research, Darwin, in partnership with Bowchung Pty Ltd, Canberra.

Preparation of the report is also a response to a recommendation by the Senate Community Affairs Committee which, in a report of an inquiry into the Low Aromatic Fuel Bill tabled in 2012, stated:

The committee recommends that the Government release an interim report based on the first round of data collection being undertaken by the Menzies School of Health Research.' (Senate Community Affairs Legislation Committee, 2012, Recommendation 1).

The report contains four sections:

1. background to attempts to date to monitor prevalence of petrol sniffing in Australian Aboriginal communities in general and, in particular, to monitor the impact of rolling out LAF;
2. methodological issues entailed in monitoring prevalence of petrol sniffing in communities;
3. the methodology adopted in the present study; and
4. interim findings of the study to date.

3 Background: monitoring petrol sniffing –origins and approaches

There have been calls for systematic and regular data collection on the patterns and prevalence of petrol sniffing for a very long time, which is perhaps not surprising, given the severity of the problem and the extent to which it can de-stabilise communities in which it occurs. In 1985 a Senate Select Committee inquiry on Volatile Substance Fumes described the data available as 'surprisingly inadequate' (Commonwealth of Australia Senate Select Committee on Volatile Substance Fumes, 1985, p.149).

The first rigorous method for monitoring petrol sniffing in remote communities was pioneered by Nganampa Health in the 1990s, when sniffing in the Anangu Pitjantjatjara Yankunytjara communities was at its height. Nganampa's method relied on a data-collector sitting down with a population list of people aged 10-39 in any given 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 reliable list of sniffers. The frequency of sniffing was categorised as 'occasional', 'regular', or 'heavy'. Nganampa Health's approach was facilitated by the fact, as the health service provider in each of the communities concerned, it held the population lists on which the procedure was based. As we show below, this method provided a basis for our own work in this area.

In 2004, d'Abbs and Brady published an analysis of why the policy response to petrol sniffing was so fragmented. In one of their recommendations they called for the evidence-base for interventions into inhalant misuse to be improved by 'funding and directing one or more existing national drug research centres to collate data on inhalant-caused mortality and morbidity, and to conduct or commission research into prevalence patterns, effectiveness of interventions and other gaps in knowledge' (d'Abbs and Brady, 2004, p.259). So far as we know, the first part of this recommendation has never been adopted, but the current data collection project goes some way to addressing the second part of the recommendation.

The introduction of Opal LAF in 2005, initially as a replacement for subsidised aviation fuel hitherto used in several Aboriginal communities as a deterrent to petrol sniffing, generated new demands for monitoring petrol sniffing patterns and trends. In the same year, the authors of the present report were engaged by the Department of Health and Ageing (DOHA) to collect baseline data on prevalence of petrol sniffing in communities using or eligible to use LAF, and to devise a data collection method and instruments suitable for ongoing monitoring. A total of 88 communities, most of them remote, were visited as part of this study, the results of which were presented to DOHA in 2007 in a report entitled Data Collection for the Petrol Sniffing Prevention Program (d'Abbs and Shaw, 2007). The report was not published in full because it contained information about specific, identifiable communities. However, a de-identified summary report was published and is available on DoHA's website (d'Abbs and Shaw, 2008b).

In 2008 we were again engaged by DOHA to conduct a further study, this time to gauge the impact of LAF in communities. For this purpose, 19 communities were selected from the earlier list of 88 communities, selections being made to ensure diversity of regions, which would facilitate a clearer examination of petrol sniffing patterns. 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 on the DoHA website (d'Abbs and Shaw, 2008b).

In 2010, DOHA issued a Request for Tender (RFT) for further work on collecting data to monitor the impact of LAF. The task, as set out in the RFT, was 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 fuel in Indigenous communities in regional and remote Australia.

The data collection tool will provide information on the following objectives:

1. Determine the prevalence of petrol sniffing in Indigenous communities in areas where low aromatic fuel is available;
2. Identify and measure (where possible) any unintended consequences of the roll out 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 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).

The present project is the outcome of a successful tender for the above RFT by the Menzies School of Health Research in partnership with Bowchung Pty Ltd. The project builds on the methods developed in the earlier studies.

4 Methodological issues entailed in monitoring petrol sniffing prevalence

In principle, two approaches are available for documenting patterns of petrol sniffing (or other forms of recreational drug use) 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 et al., 1995). However it is too time intensive for a more broadly based data collection project. Petrol sniffers, as already stated, are difficult populations to reach by conventional survey methods. They tend not to go to school and are often estranged from their families. Petrol sniffing is a clandestine, stigmatised activity that takes place largely at night. Under these circumstances, it would be extremely difficult to identify and interview a random sample of respondents that yielded an acceptable number of sniffers even in a few communities.

Key informant methods can in turn be of two kinds: in the first, informants are asked to give estimates of the numbers of sniffers, in terms of specified usage levels and/or age and gender groups. (e.g. how many regular sniffers are there in this community aged between 10 and 14 years?). In the second, informants serve as 'proxy respondents' (Nelson et al., 1990); they are presented with a list of names of community residents and asked to identify the petrol sniffing status of individuals on the list. Here, we refer to the first of these as the 'key informant estimates' approach, the second, as the 'proxy respondents' approach.

As Nelson et al. note, research designs using proxy respondents are frequently used when people who display a behaviour or condition of interest are either unavailable for direct questioning or when direct questioning is inappropriate (e.g. with subjects suffering from mental disabilities (Nelson et al., 1990). As we have already pointed out, accessing adequate numbers of petrol sniffers for direct questioning would present formidable problems, especially in a large number of communities. Nelson et al. also consider issues of non-response bias and misclassification before concluding that proxy respondents can usually provide reliable information for broadly defined variables (e.g. smoking status) but are likely to be less reliable when asked to provide detailed exposure information (e.g. number of packs per day).

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 sniffers. For example, one of us was present in a Top End community several years ago when members of a Commonwealth Senate Inquiry into VSM visited the community. During the morning, the visitors were told by one local community group that there were no more than 20 regular sniffers in the community. The local school principal, on learning of this meeting, requested a separate meeting with the Senators, at which it was claimed there were around 200 sniffers in the community.

For these reasons, and in light of the data collection method developed and successfully used by Nganampa Health, we consider the 'proxy respondents' approach to be the most suitable option for collecting petrol sniffing prevalence and frequency data from a large group of communities.

5 Methodological approach adopted in present study

5.1 Sampling

Analytically, the sampling unit in this study is communities rather than individuals. The sample for the present project comprises 41 communities, selected by DoHA in consultation with ourselves, on the basis of meeting one of two criteria; first, communities suited to monitoring the impact of LAF; second, communities in which there is evidence indicating that petrol-sniffing is an emerging phenomenon.

Communities selected for monitoring the impact of LAF were chosen from among those for which there is baseline data that enables comparison between a 'pre' and 'post' intervention. As mentioned above, the initial baseline study conducted between 2005 and 2007 collected data on numbers of people sniffing, and sniffing frequencies, from 88 communities across remote Australia. Data in the baseline study was collected as closely as possible to commencement of Opal availability. (However for many communities in the sample the notion of 'baseline' is problematic, as these communities had previously used Avgas as an alternative to unleaded petrol, and Opal fuel was simply a replacement for Avgas.)

For the 2008 study of the impact of Opal fuel, as already mentioned, a sub-set of 19 communities was selected from the original 88 for follow up data collection in order to compare baseline rates of sniffing with rates at the time of follow-up. The 19 communities were selected in order to ensure diversity of geographic regions, prevalence of sniffing and history of sniffing (d'Abbs and Shaw, 2008a). During the course of the 2008 study a twentieth community was added to the sample because of apparent high levels of sniffing, and because the community was close to a pastoral station that was continuing to sell regular unleaded fuel.

The sample for the present study includes 15 of the 20 communities that made up the 2008 study, plus another 12 communities for which baseline data (in most cases going back to 2005-2007) is available. The remaining 14 communities in the present study were selected on the basis of the second criterion, that is, in order to keep track of sniffing as it emerges in new regions, or recurs in communities in which it has been absent for some time. Information on communities reported to be struggling with sniffing was gathered from a range of sources, including:

- Volatile Substance Use Regional Coordinators
- The Petrol Sniffing Strategy Unit
- DoHA low aromatic fuel rollout officers
- Data collectors visiting communities for this project.

In some, but not all, of these 14 communities LAF is available. Some of the communities do not have any local fuel outlet and are therefore dependent upon other centres. The distribution of

LAF availability is summarised below in Table 1, while the geographical distribution of sample communities among the regions is shown in Table 2. A more detailed list, showing the numbers of communities comprising the present sample that were also included in the 2005-07 baseline study and the 2008 impact study, is at Appendix 1.

Table 1: Availability of LAF, by community, 2012

LAF status	Number of communities
LAF only	30
RULP, no LAF	2
LAF and RULP	2
No fuel outlet in community	7
TOTAL	41

Table 2: Communities selected by region, present study

State	Region	Number of communities
Northern Territory	Top End	6
	Katherine	6
	Barkly Tablelands	4
	Central Australia	6
South Australia	Western South Australia	4
Western Australia	Goldfields	6
	Kimberley	4
Queensland	Cape York	3
	Gulf	2
Total		41

The present project commenced in 2011 and will extend over a four-year period to 2014, during which each of the 41 communities in the sample will be visited twice, at two-year intervals. As of April 2013, each community had been visited once, with the second round of data collection scheduled to commence in August 2013. This aspect of the data collection structure was developed by DOHA and formed part of the tender brief, in order to ensure that the study would document trends in petrol sniffing prevalence over time rather than provide single snapshots of each community.

On a cautionary note, we should point out that, while the 41 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.

5.2 Data collection

The data collection strategy has two components: (1) quantitative data on prevalence and frequency of sniffing through a procedure that can be replicated in all communities in the sample; (2) complementary data on aspects of the community that can be expected to impact on the quality of life for young people. This information is more qualitative in nature, and is gathered through interviews with a range of community members and service providers on the following:

- Anecdotal reports of use of other substances such as marijuana (and any anecdotal information on individuals who have changed their habits from sniffing petrol to smoking marijuana or other drug use);
- Investigating the extent (if any) of people leaving the community in order to be able to sniff in other locations;
- Accessibility of youth services;
- Accessibility of substance use rehabilitation services, and
- Extent of support delivered through the network of Volatile Substance Use Regional Coordinators.

Information collected on complementary aspects of sniffing is recorded and entered into a separate file for each interview. The data collector then synthesises this data to provide a written report on each community to Menzies School of Health Research. Interview schedules used for collecting complementary data are shown in Appendix 3.

Note that this interim report does not present any findings from the complementary data collection. These will be presented in later reports.

5.2.1 Collecting quantitative data

In 2005 when the need to collect baseline data across a much larger number of communities arose, it was decided to adapt the Nganampa Health methodology mentioned earlier. The use of population lists and the frequency categories were continued. Because we were using multiple data collectors, formal definitions were developed for each frequency category. They were (and remain) as follows:

Table 3: 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/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.

In addition rules were developed on how to correlate data between informants. Data collectors were instructed that if two (or more) people identified a person as a 'sniffer', 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.

In using the 'Nganampa Health methodology' on a larger group of communities a range of other problems became evident. The first of these was that the population list approach was too cumbersome for large communities. Informants do not appreciate sitting down with a population that is 60 pages long! Not only that, but it is unrealistic to expect anyone to have accurate information about everyone in a large community. On the other end of the spectrum, in communities in which not very many people sniff it does not make intuitive sense to identify them by going through a list when anyone could give you their names.

The second was that access to population lists proved to be extremely problematic. Some communities did not have such a list; others had lists, but of very poor quality, and still others had the list, but did not want to give access to it.

In recognition of these problems the data collection methodology was changed for the 2007 data collection for the evaluation of the impact of Opal fuel. It was decided that the population list approach would only be used in cases where the community was smaller than 700 people, and where the data collector assessed that there were more than ten people sniffing. Luckily no community involved in the sample for the evaluation data collection had more than 700 people.

In preparing the data collection strategy for the present study, potential practical difficulties associated with gaining access to accurate population lists in some communities were compounded by concerns raised by the Human Research Ethics Committee, auspiced jointly by the NT Department of Health and Menzies School of Health Research, and also by the Commonwealth Department of Health and Ageing's own Departmental Ethics Committee.

In light of these concerns and the practical constraints, we decided not to use population lists for the present study. Instead of taking informants through each name on a population list, data collectors were asked to refer to subdivisions of the population. Subdivisions were chosen not only to create mutually exclusive categories, but also to accord with the ways in which people on the ground in communities thought about people's ages. For example they would first ask 'Can you think of any little girls – primary school kids – who sniff? If a person is identified, their initials only are recorded. The subdivisions used are as follows:

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

For any person identified as a sniffer, the data collector would then ask the informant to identify the person's age and sniffing frequency. The data collector would also record the initials of identified users in order to compare the list of persons identified with those identified by other informants. Once numbers of sniffers have been computed by this procedure, the data collector aggregates the numbers of sniffers in each age x gender x frequency category, and enters the aggregates into a table. This is the data taken from the community; sheets with initials are not

taken from the community. Instructions issued to data collections are included in this report as Appendix 2.

This methodology was used for data collection in 2012. The age x gender subdivisions worked well, and we are confident that lists compiled from each key informant accurately represents their knowledge of sniffers in their community. However recording the initials of each person identified as sniffing was not a success. Key informants often did not recognise initials, and probed by asking “Do you mean John Smith?” (or whatever the name in question was). The researcher then had to remember who the initials actually did stand for – otherwise they couldn’t answer the question, and couldn’t be sure that they weren’t double counting. The only way around this issue was to record the first names of sniffers. If there were two sniffers with the same first name we recorded the first initial of their surname.

By writing down the first name of users we can be confident that we are not double counting, and this improves the accuracy of the data we collect.

One issue that has emerged in the course of fieldwork is the use of volatile substances other than petrol. As Table 2 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 of course LAF has been designed as a deterrent to use of petrol as an inhalant. Anecdotally, fieldworkers in some communities have reported accounts of volatile substances other than petrol being used, and we have recently asked fieldworkers to document any such accounts as fully as possible. This should enable us in future to gauge the degree to which declines in petrol sniffing are being offset by increasing use of other volatile substances.

5.3 Summary

Data collection on petrol sniffing is difficult. The development and evolution of this methodology between the 1990s and 2012 has met three key criteria:

- Enabling the collection of reasonably accurate data about a sensitive topic
- Using methods that will facilitate the collection of accurate data when used in a range of communities, and by a range of data collectors
- Respecting people’s right to privacy.

At the same time, petrol sniffing is usually a clandestine activity, the prevalence of which can fluctuate rapidly. It is a largely peer driven activity which, for most people, comes and goes in fads. It is therefore possible to find very low levels of sniffing in one month, but three months later find a quadrupling of the number of people involved.

The 41 communities in the sample have been selected to represent patterns in different regions but, for reasons stated above, the numbers of petrol sniffers should not be interpreted as a census of the total number of people sniffing in communities.

6 Interim findings

The total number of people identified as sniffing across the 41 communities in 2011-12 was 276. As Table 4 shows, the greater number of these (58.0%) were in the 15-24 age-group. Males outnumbered females in all age categories, and accounted for more than three quarters (79.7%) of the total. Almost half of all of the identified sniffers (45.3%), as Table 4 shows, were males aged 15-24.

Table 4: Total numbers of people reported as sniffing petrol in 2011-12, by age-group and gender (percentages in brackets)

Age-group	Male	Female	Total
5-9	3 (1.1%)	1 (0.4%)	4(1.4%)
10-14	60 (21.7%)	14(5.1%)	74(26.8%)
15-24	125 (45.3%)	35 (12.7%)	160(58.0%)
25+	32 (11.6%)	6 (2.2%)	38(13.7%)
Total	220(79.7%)	56(20.3%)	276 (100.0%)

More than half of all sniffers in these 41 communities (158 people, 57.2%) were located in the Top End, Katherine region or Barkly Tablelands regions of the Northern Territory, while a little over one quarter (71 sniffers, 25.7%) were in communities in the Goldfields region of WA. The regional distribution of sniffers is shown in Table 5. In the remaining regions, the numbers of sniffers were low.

Table 5: Numbers of sniffers by region, 2011-12 survey

State	Region	Number of communities in sample	Number of people sniffing	% of all sniffers
NT	Top End	6	110	39.9
	Katherine	6	13	4.7
	Barkly	4	35	12.7
	Central Australia	6	17	6.2
SA	Western SA	4	12	4.3
WA	Goldfields	6	71	25.7
	Kimberley	4	1	0.4
QLD	Cape York	3	0	0.0
	Gulf	2	17	6.2
Total		41	276	100.0

In none of these four regions, in contrast to most other regions in the study, has LAF been rolled out on a regional rather than community-by-community basis, with a result that in all of them alternative sources of regular unleaded petrol (RULP) are available.

A little over half of sniffers (51.8%) were categorised as 'occasional' but, as Table 6 shows, over one quarter (26.5%) were categorised as 'heavy' sniffers.

Table 6: Sniffers by sniffing category, 2011-12 survey

Sniffing category	Male	Female	Total	% total
Occasional	88	43	131	51.8
Regular	51	4	55	21.7
Heavy	58	9	67	26.5
Total	197	56	253*	100.0

* Data missing for 23 sniffers.

6.1 Trends in sniffing prevalence

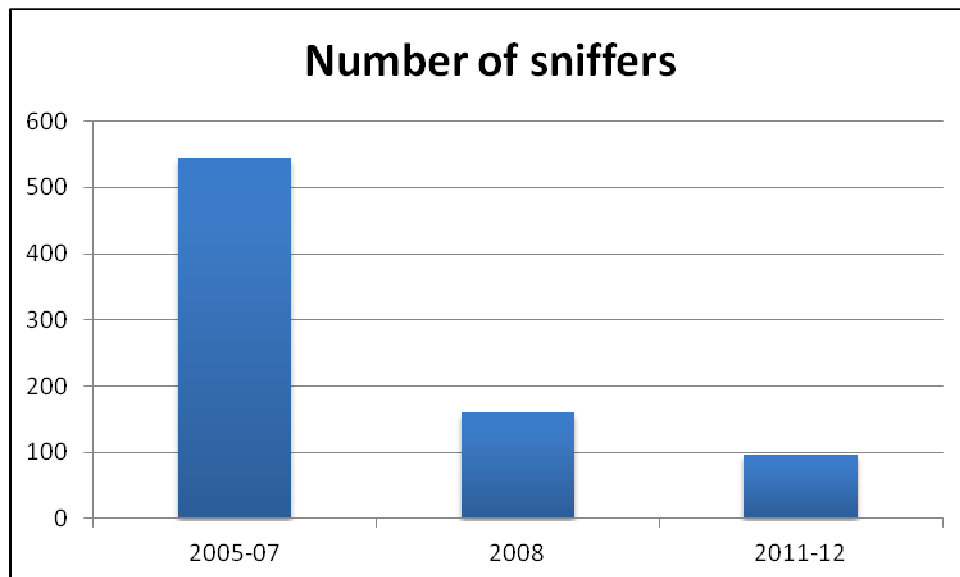
As stated above, a total of 15 communities have had data collected at all three rounds of data collection – baseline (2005-7); impact (2008) and the current round (2011-12). It is therefore possible to compare prevalence and patterns of sniffing in these 15 communities over the entire period. These communities, as Table 7 shows, are drawn from all of the regions in the current study.

Table 7: Regional distribution of the 15 communities included in three studies: 2005-07, 2007-08, 2011-12

Region	Number of communities
Cape York (QLD)	1
Gulf (QLD)	2
South Australia	3
Goldfields (WA)	3
Central Australia (NT)	2
Top End (NT)	3
Kimberley (WA)	1
Total	15

The total number of sniffers in these 15 communities has continued to decline, from 546 in the 2005-07 study, to 160 in 2008, to 97 in 2011-12.

Figure 1: Numbers of sniffers recorded in 15 communities for which data is available in three studies

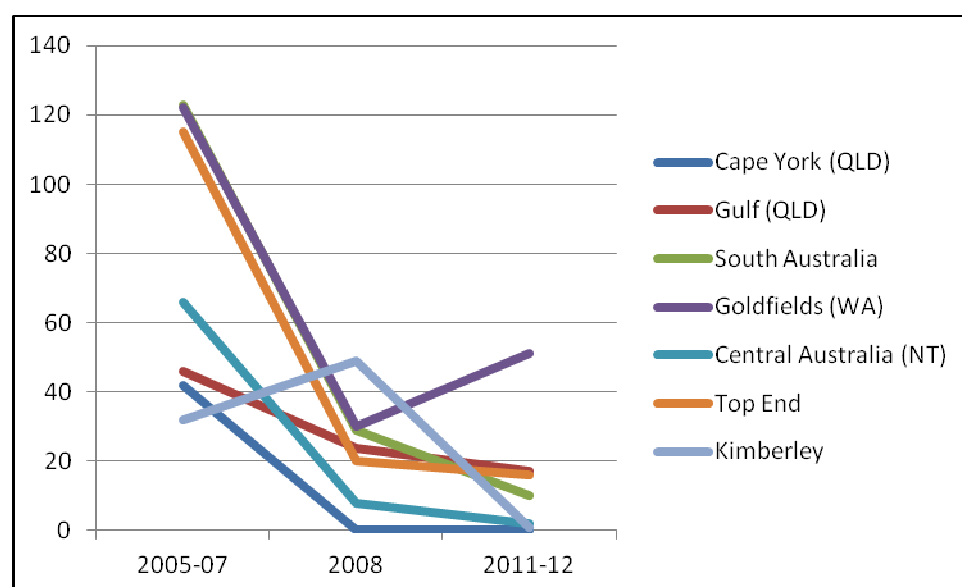


While caution is called for in interpreting these trends, the most significant factor contributing to them would appear to be the introduction of a regional approach to rolling out LAF. At the time of the 2005-07 baseline data collection, seven of the 15 communities in this sub-sample were already using Avgas – the low aromatic fuel that preceded Opal. However the use of Avgas covered only a small percentage of the total number of communities in any region, so regular unleaded petrol (RULP) was often relatively easy to obtain by a short trip to a nearby community. However by 2008, when the data was collected for the impact evaluation of Opal fuel, a regional strategy had been implemented in several regions, and RULP was not easily obtainable over large areas. The sharp decline in numbers of sniffers in the 2008 study testifies to the impact of this policy shift. Since then, the regional rollout of LAF fuel has been further extended, and the total number of sniffers in the 15 communities has continued to decline. However, neither the regional rollout nor the downward trend are universal: as Table 8 and Figure 2 show, in one region (Goldfields, WA) the number of sniffers in communities in the sub-sample was higher in 2011-12 than it had been in 2008, while in other areas – especially the Top End NT and the Gulf region in Far North Queensland, the rate of decline between 2008 and 2011-12 was small. (The increase in the WA Goldfields was in fact attributable largely to an increase in a single community, where it was accounted for in part by use of other volatile substances besides petrol. In addition, at the time of data collection, residents of this community also had access to an outlet selling RULP.) If we consider also those communities that have been added to the present study for the first time, in part because reported levels of sniffing in them have caused concerns, it is apparent that most of the petrol sniffing that continues to occur takes place in areas where a regional rollout has not yet been implemented, and where sources of RULP are consequently relatively accessible.

Table 8: Trends in numbers of sniffers in 15 communities, by region

Region	No of communities	No. sniffers 2005-07	No. sniffers 2008	No. sniffers 2011-12
Cape York (QLD)	1	42	0	0
Gulf (QLD)	2	46	24	17
South Australia	3	123	29	10
Goldfields (WA)	3	122	30	51
Central Australia (NT)	2	66	8	2
Top End	3	115	20	16
Kimberley	1	32	49	1
Total	15	546	160	97

Figure 2: Trends in numbers of sniffers, 15 communities



Similarly, the downward trend in recent years is not found across all age groups. Table 9 shows the numbers of sniffers in each of four age-groups in the 15 communities at the three points in time. Whereas between baseline and 2008 the sharpest declines were found amongst older sniffers, since 2008 – at least in these 15 communities – the total number in the two older categories has levelled off, while it has continued to decline in the two younger age groups. Figure 3 shows the trends graphically.

Table 9: Numbers of sniffers in 15 communities, by age-group and survey

Age group	2005/7	2008	2011/12
5 – 9 years	14	12	0
10 – 14 years	88	77	24
15 – 24 years	330	62	69
25+ years	114	9	4
Total	546	160	97

Figure 3: Numbers of sniffers by age-group and survey, 15 communities

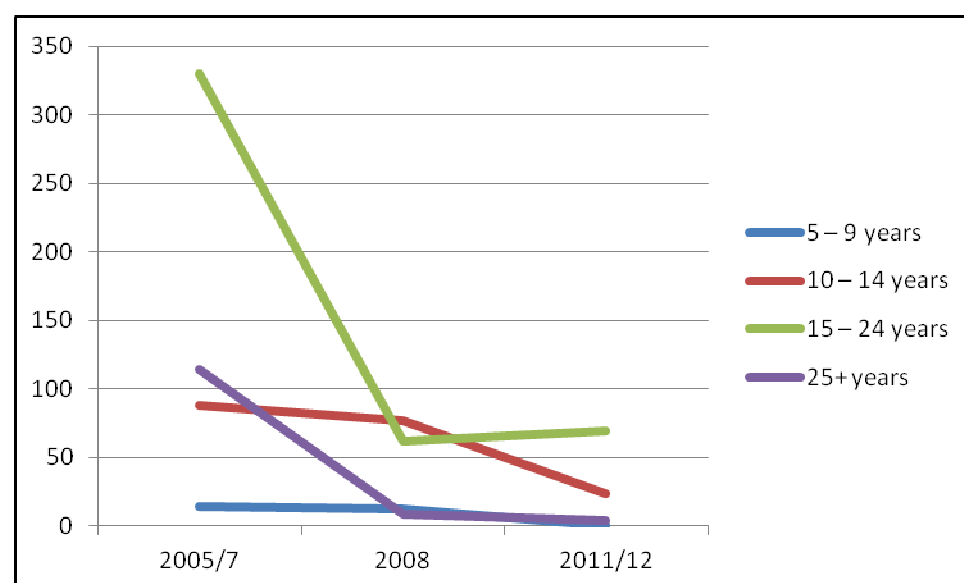


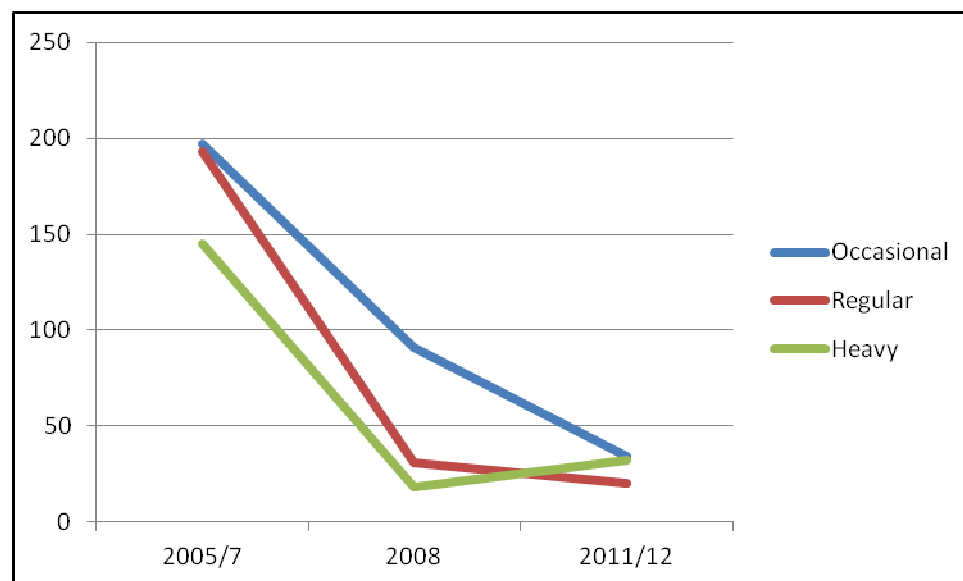
Table 10 shows the numbers of sniffers in the various frequency categories in each of the three studies, while Figure 4 plots the changes graphically. As both Table and Figure show, between baseline and 2008, the numbers of sniffers in all categories declined. Since then, however, while the number of ‘occasional’ and ‘regular’ sniffers has continued to decline, there has been an increase of 77.8% (from 18 to 32) in the number of ‘heavy’ sniffers in the communities concerned. At this stage we are unable to comment further on possible reasons behind the change, but have flagged it for further examination.

Table 10: Trends in numbers of sniffers in different categories (14 communities)*

Frequency	2005-7	2008	2011-12
Occasional	197	91	34
Regular	193	31	20
Heavy	145	18	32
Total	535	140	86

*Frequency data missing for one of the 15 communities.

Figure 4: Trends in numbers of sniffers in different frequency categories



6.2 Transference from petrol to other substances

As indicated above, data collectors were not initially directed to distinguish systematically between use of petrol and other inhalants, but more recently been asked to do so. Anecdotal reports indicate that in some communities other volatile substances such as paint and glue have partially supplanted petrol, but at this stage we are not in a position to quantify any such shifts.

Many communities also reported anecdotally on high levels of use of marijuana use, and in some cases marijuana use now appears to be a greater cause for concern than petrol sniffing. However, this study was not designed to establish the prevalence of marijuana use, or to identify instances of individuals ceasing to sniff petrol and taking up marijuana. An earlier study reported increases in marijuana use in some communities following the replacement of RULP by Avgas in the mid-1990s (Roper and Shaw, 1996).

6.3 Summary of interim findings

The analysis above is a preliminary analysis of interim data. The main point that emerge are:

1. In the 41 communities in the present (2011-12) survey, a total of 276 current sniffers were found, most of them located in four of the nine regions from which communities were selected, namely Top End, Katherine and Barkly regions of the NT and the Goldfields region of WA. The 19 communities located in the remaining five regions accounted between them for only 47 sniffers.
2. Four out of five sniffers (79.7%) were male, and over half (58.0%) were aged 15-24 years.

3. A little over half (51.8%) of the 276 current sniffers were 'occasional', and a little over one quarter (26.5%) were 'heavy' sniffers.
4. In 15 of the 41 communities, comparative data are available for the 2005 baseline survey and the 2008 impact survey, as well as the 2011-12 survey.
5. In these 15 communities, the total number of current sniffers has continued to decline, from 546 in 2005-7 to 160 in 2008, to 97 in 2011-12. The decline, however, has not been uniform. In communities in the Goldfields region of WA the number of sniffers *increased* from 30 in 2008 to 51 in 2011-12, while in the Top End (NT) the rate of decline between 2008 and 2011-12 was much slower than between 2005-7 and 2008. (In two other regions where the number of sniffers in the 2011-12 survey gave cause for concern – Katherine and Barkly regions in the NT – no comparative data are available from the earlier surveys.)
6. Between 2008 and 2011-12 the numbers of sniffers in the two younger age-groups – 5-9 years and 10-14 years – continued to decline from levels recorded in 2005-07. However, the numbers of current sniffers in the 15-24 years category in these 15 communities increased from 62 in 2008 to 69 in 2011-12 (a change that could, however, reflect random fluctuations rather than the emergence of a new trend).
7. While the number of occasional sniffers in these communities continued to decline, the numbers of heavy sniffers in 14 communities (frequency data were not available for one community) rose from 18 in 2008 to 32 in 2011-12.
8. Taken together, these trends and patterns suggest that, while the rollout of LAF continues to be associated with significantly reduced levels of petrol sniffing compared with baseline levels recorded in 2005-07, there are also signs of continuing and in some cases increasing levels of petrol sniffing. This is particularly important in communities that are not incorporated into a regional strategy for rolling out LAF.

7 Appendix 1: Communities in current sample, by region and involvement in earlier studies

Table 11: Communities in current sample, showing whether or not they were also in 2005-07 baseline study and 2008 impact study

Region	Community (current sample)	2005 – 7 (Baseline)	2008 (Impact)
Kimberley	1.	✓	-
	2.	-	-
	3.	-	-
	4.	✓	✓
Top End	5.	-	-
	6.	✓	✓
	7.	-	-
	8.	✓	✓
	9.	✓	-
	10.	✓	-
Katherine	11.	✓	-
	12.	✓	✓
	13.	-	-
	14.	-	-
	15.	-	-
	16.	-	-
Barkly	17.	-	-
	18.	-	-
	19.	✓	-
	20.	-	-
Central	21.	✓	-
	22.	✓	✓
	23.	✓	-
	24.	✓	✓
	25.	✓	-
	26.	✓	-
Goldfields	27.	✓	✓
	28.	✓	✓
	29.	✓	-
	30.	✓	✓
	31.	✓	-
	32.	-	-
South Australia	33.	✓	✓
	34.	✓	-
	35.	✓	✓
	36.	✓	✓
Gulf	37.	✓	✓
	38.	✓	✓
Cape York	39.	✓	✓
	40.	-	-
	41.	-	-

Total		27	15
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8 Appendix 2: Instructions to data collectors in the Petrol Sniffing Prevention Program Data Collection Project

Administrative details

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

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.

Data Collection

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

Determining a person's sniffing status

As of 2012 we are not using population lists to determine the number of sniffers 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.

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.

Category		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.

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 reasonable 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
 - o Focus particularly on supply issues and the behaviour of young people – do they see much sniffing related offending
- School staff
 - o 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.

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.

9 Appendix 3: Interview schedules for the collection of complementary data

Interview Guide for service providers

Please make informants aware that their identity will not be revealed in any reports resulting from the interview, except with their permission.

Please also make informants aware that data collected on the prevalence of sniffing will be provided to the Commonwealth government – but not in any way that people can be identified.

Informant's name:

Service.....

Position

Community

Length of time resident in community: ..

Informant's phone no: Informant's email address

Interviewer's name:

Date of interview: Place of interview:

Level of sniffing in the community

1. Are you aware of sniffing in the community?
2. Would call it constant, intermittent or very occasional?
3. What impact do you think sniffing has on the community?
4. Roughly how many people do you think are involved?

5. What are the main volatile substances used? Where are they getting the substance(s) from?
6. If the substance(s) is the store or contractors, are you aware of any action to control access to those supplies? *(Ask only if the store or contractors are mentioned)*
7. Do you think sniffing has increased or decreased over the last two years?
8. What do you think has driven the change (if any)?

Impact of sniffing on your job, and the community

9. How often do you come across sniffing in your job?
10. What do you do when (if) you do come across sniffing?
11. What other services are there in this community to help when sniffing occurs? How effective are they? *(Explore the strengths and weaknesses of the response to sniffing in the community)*
12. what is the best way to reduce trouble involving young people in your community
13. Has your community received help from the Petrol Sniffing Strategy Unit in Alice Springs, or any of the Regional Coordinators? What help have they provided?
14. How effective do you think the various services below are in either preventing or managing sniffing, and why?
 - School
 - Clinic
 - Police
 - Youth and recreation programs
 - Any other programs
15. How do you think these services and/or the general response to sniffing could be improved?

Interview guide for community members

The questions listed below are intended as guidelines for semi-structured interviews with key informants, rather than as standardized survey questions. That is, they constitute a resource to be used by the fieldworker in what should be a guided conversation with the informant. Please don't allow the questions to restrict your interview. Feel free to explore any of the issues further if the informant raises additional relevant issues, experiences or observations. If, in order to fit in with the 'flow' of the conversation, you need to alter the sequence of questions, that's OK. At the same time, you should use the questions as a checklist. We would like all of the questions answered, or reasons given why they are not appropriate for the community.

Informants should be made to feel that their experiences, opinions and observations are respected. At the same time, we are only interested in the informant's own observations or experiences, not in rumours or hearsay. If an informant claims, for example, that there has been an increase in cannabis or some other drug use since the introduction of Opal, you should inquire as to the basis of the claim. If it's just a general impression unsupported by evidence, please make this clear in the interview schedule.

Please make informants aware that their identity will not be revealed in any reports resulting from the interview, except with their permission.

Please also make informants aware that data collected on the prevalence of sniffing will be provided to the Commonwealth government – but not in any way that people can be identified.

Informant's name:

Position

Community

Length of time resident in community: ..

Informant's phone no: Informant's email address

Interviewer's name:

Date of interview: Place of interview:

Information about Opal fuel

1. Do you have Opal fuel here? Is there always Opal fuel, or is it sometimes unleaded? (If it isn't Opal, get the reasons why and whether any attempt has been made to get Opal.)
2. Do you have either regular or premium unleaded fuel as well, or is Opal the only fuel used?
3. How long has it been used here?
4. Are you aware of any opposition in the community to the use of Opal fuel?

If yes, From what you've heard, on what is this opposition based?

5. Are you aware of people going elsewhere and buying unleaded fuel instead of Opal?

History of sniffing in the community

6. In your opinion, has the amount of sniffing in the community changed over the last couple of years? Has it got better or worse? (Ask for the extent of any changes)
7. Why do you think it has changed?

OR

8. Why do you think it hasn't changed?

Information on current sniffing – what is sniffed, and where is the substance from?

Only ask this question if there is sniffing

9. We won't ask you about exactly how many people sniff, as we do that with a separate form, but can you tell me about sniffing here.
10. Do you know where petrol being sniffed in this community comes from? (And if so, ask interviewee to identify the source.)
11. Are you aware of people sniffing other things like deodorants or paint?
12. (If yes) What things other than petrol do people sniff? Do you know where they get those products from?
13. Are these other substances used as widely as petrol, or is petrol still the main inhalant used?

14. From your observations, do most families of sniffers try to stop their young members from sniffing and (if so) how do they do so?
15. Are you aware of sniffing leading to break ins and buildings being damaged? How often? (What is the impact of sniffers on the community?)

Information on other drug use by young people

16. Are you aware of young people in this community using gunja in this community?
17. (IF yes) Do you have any evidence of gunja being substituted for petrol as a drug in this community? (If yes, ask respondent to elaborate on evidence)
18. Are you aware of young people in this community using alcohol in this community?
19. (IF yes) Do you have any evidence of alcohol being substituted for petrol as a drug in this community? (If yes, ask respondent to elaborate on evidence)
20. Are you aware of young people in this community using any other drugs in this community?
21. (IF yes) Do you have any evidence of any other drugs being substituted for petrol as a drug in this community? (If yes, ask respondent to elaborate on evidence)
22. Are you aware of any young people who have stopped using drugs (including alcohol) altogether as a result of the introduction of Opal fuel?
23. On balance, how would you assess the overall impact of Opal in this community? (Probe for both positive and negative impacts)

How the community responds to sniffing

24. Since the introduction of Opal fuel, have there been any changes that you've observed in the way that the community deals with petrol sniffing or other drug use by young people? (Then ask respondent to elaborate.)
25. If there is a change, what do you think has happened that has changed the way people respond?
26. Are there things that you think the community *should* be doing in response to petrol sniffing or other drug use, but that it doesn't do? (Ask respondent to elaborate.)

27. (If appropriate) What is stopping the community from being more active in responding to sniffing?

Life for young people in your community

28. Are there employment and training programs for young people to join if they want to? What? Do you think it is a good program? Why? Why not?
29. *(Ask if there is a youth program)* Do you think that the youth program makes a difference to the way young people live their lives – how they behave, whether or not they go to school or go on to a job, whether or not they get married really early,?
30. What is the best way to reduce trouble involving young people in your community?

Help for sniffers

30. Does anyone help sniffers if they want to stop, or if they are getting sick? Who?
31. Do you know if anybody been sent to any programs or been given help by the clinic or a drug and alcohol worker
32. Does the youth program get involved with young people who sniff?
33. What do the police do about sniffing? Do you think they are helpful with sniffing? Why? (Or why not). Do you think there is something that they could do better? What?
34. What does the school do about sniffing? Do you think they are helpful with sniffing/ Do you think there is something that they could do better? What?

Wrap Up

35. Finally, do you have any other comments you'd like to add to what we've discussed?

THANK YOU VERY MUCH FOR YOUR TIME AND THOUGHTS

For further information, please contact:

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