



Summary of Findings 2016 - 2019

Clandestine Drug Laboratories in South Australia: Summary of Findings 2019

Health Protection and Licensing Services
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Acronyms and abbreviations

| | |
|---------------------------|---|
| Authorised officer | As defined in division 5 of the <i>South Australian Public Health Act 2011</i> |
| Clan labs | Clandestine drug laboratories |
| EHO | Environmental health officer |
| EPA | Environment Protection Authority (South Australia) |
| HSA | Housing Safety Authority |
| ILs | Investigation levels |
| RAP | Remediation action plan |
| SAPOL | South Australia Police |
| SAILIS | South Australian integrated land information system |
| Suitably qualified expert | Someone with experience in the fields of environmental engineering, environmental science, environmental health or occupational hygiene and who is in possession of tertiary qualifications in one of these disciplines from a recognised educational institution |
| The Act | <i>South Australian Public Health Act 2011</i> |
| The EP Act | <i>Environment Protection Act 1993 (SA)</i> |
| The National Guidelines | National Clandestine Drug Laboratory Remediation Guidelines published by the Australian Government |
| The Policy | South Australian Public Health (Clandestine Drug Laboratories) Policy 2016 |
| The Practice Guideline | Practice Guideline for the Management of Clandestine Drug Laboratories under the <i>South Australian Public Health Act 2011</i> |

Introduction

Clandestine drug laboratories (clan labs) are premises or vehicles in which unlawful manufacture or attempted manufacture of controlled drugs such as methamphetamine have occurred or where chemicals, equipment or waste materials related to unlawful manufacture of a controlled drug have been located. Clan labs have been found in rural, regional and metropolitan locations. The volatile or hazardous nature of many of the chemicals used in clan labs, and the unsafe manufacturing processes, can result in contamination of the surrounding environment including the soil, water and air, posing significant risks to public health (enHealth 2017).

On 6 October 2016, SA Health released the 'South Australian Public Health (Clandestine Drug Laboratories) Policy 2016' (the Policy) and associated 'Practice Guideline for the Management of Clandestine Drug Laboratories under the *South Australia Public Health Act 2011*' (the Practice Guideline). The aim of the Policy and the Practice Guideline is to assist councils to manage the public health risks associated with SA Police (SAPOL) notified clan labs in South Australia.

The purpose of this report is to discuss the findings associated with notified clan labs that have been investigated by councils since the commencement of the Policy and Practice Guideline.

Notifications

From the 6th of October 2016 to 30 September 2019, SAPOL detected 78 clan labs that were referred to South Australian local public health authorities (councils) for investigation. This comprised of nine Category A laboratories (11.4%), 20 Category B laboratories (25.6%), and 49 Category C laboratories (63%). Table 1 provides a short definition of each category (full definitions can be found in the Practice Guideline).

Table 1. Clan lab category definitions.

| Category A | Category B | Category C |
|--|--|--|
| An active clan lab operating at the time of detection with either drug manufacture or precursor production | A non-active clan lab with either drug manufacture or precursor production | A clan lab kit or chemical store that is neither set up nor active but the premises has signs of previous drug manufacture |

*** Public health authorities are only notified of category C discoveries when there is evidence of drug manufacture***

Table 2. Clan lab notifications between 6 October 2016 and 30 September 2019

| Year of Notification | Number of Notifications |
|----------------------|-------------------------|
| 2016 | 10 |
| 2017 | 18 |
| 2018 | 37 |
| 2019 | 13 |
| Total | 78 |

Only clan labs defined as either category A, B, or C with evidence of controlled drug manufacture are referred to South Australian councils. Category C clan labs (excluding those with evidence of controlled drug manufacture) and category D clan labs are not notified by SAPOL as they are not considered to pose a serious risk to public health. Figure 1 shows the number of clan lab notifications by category since the implementation of the policy.

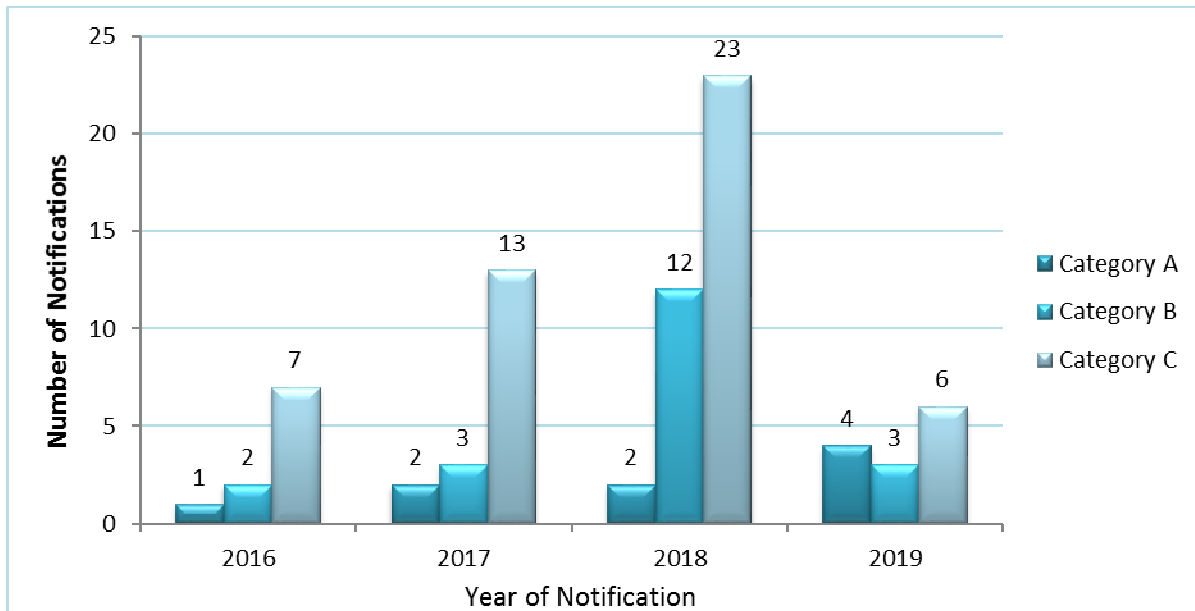


Figure 1. Clan lab notifications by category between October 2016 and September 2019

Clan lab characteristics

SAPOL formally notifies councils of clan lab detections using the notification form contained within the Practice Guideline. The form contains a number of case particulars including property status, suspected controlled drug(s) being manufactured, suspected method of synthesis, site information including potential hazards or threats, and suspected areas of contamination in the internal and external environment.

Property status

As shown in Figure 2, the majority of clan labs were detected in private rental properties (47%), followed by owner occupied properties (26%), public housing (17%), unknown or unspecified (9%) and private rental in commercial areas (1%).

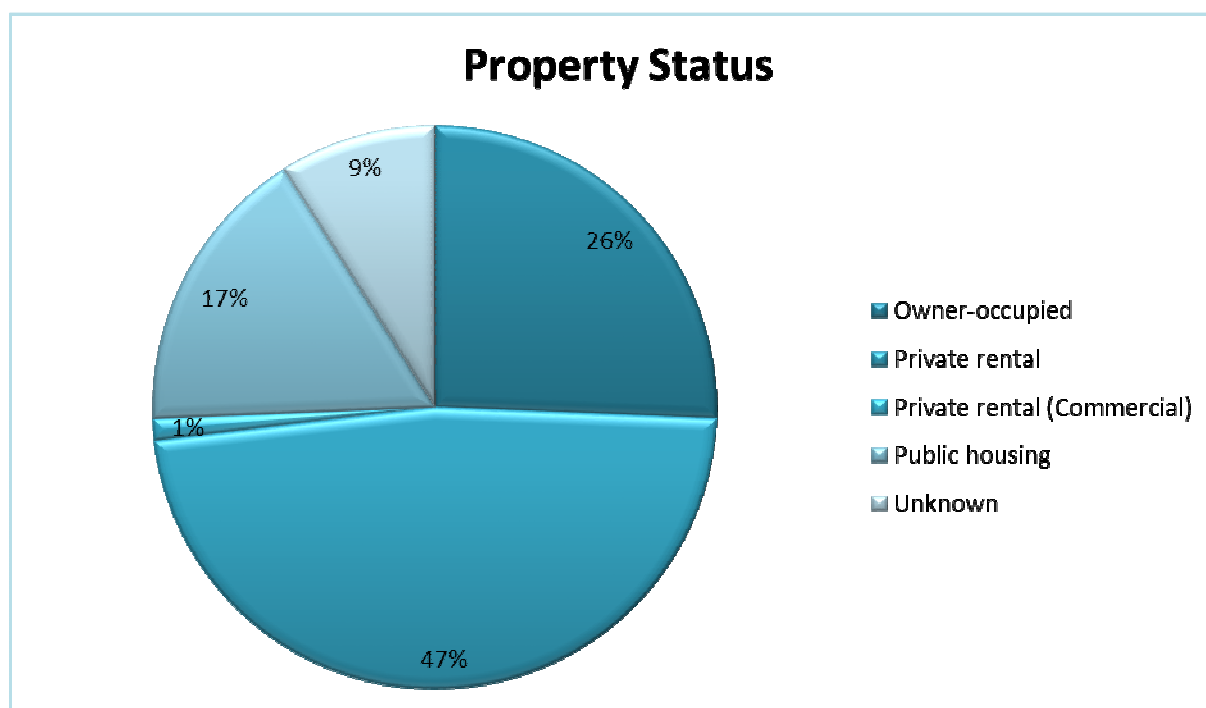


Figure 2. The status of properties used to illegally manufacture controlled drugs.

Manufacturing process

Drug manufacture carried out in clan labs may involve any or all of the following processes:

Extraction - The active chemical ingredients are extracted from a chemical preparation or plant, using a chemical solvent to produce a finished drug or a precursor chemical. Examples of extraction include the extraction of precursor chemicals from pharmaceutical preparations, the extraction of ephedrine from the Ma-Huang plant (*Ephedra sinica*), and the extraction of Cannabidiol (CBD) oil from the *Cannabis sativa* plant (ACIC 2019).

Conversion - A raw or unrefined drug product is changed into a sought-after product by altering the chemical form. Examples include converting cocaine base into cocaine hydrochloride, or methylamphetamine base into crystalline methylamphetamine hydrochloride (ACIC 2019)

Synthesis - Raw materials are combined and reacted under specific conditions to create the finished product through chemical reactions. Synthetic drugs such as methylamphetamine, 3, 4-methylenedioxymethylamphetamine (MDMA) and lysergic acid diethylamide (LSD) are created through this process (ACIC 2019).

Tableting - The final product is converted into dosage units. An example is pressing MDMA powder into tablets (ACIC 2019).

As shown in figure 3 below, drug synthesis is the most common controlled drug manufacturing process in clan labs detected since the implementation of the clan lab policy in 2016; 67% (n=53) of clan labs notified engaged in synthesis, 26% (n=21) engaged in extraction only, 1.3% (n=1) case engaged in tableting, 1.3% (n=1) case engaged in conversion, 1.3% (n=1) engaged in storage of controlled drugs and 1.3% (n=1) engaged in cultivation.

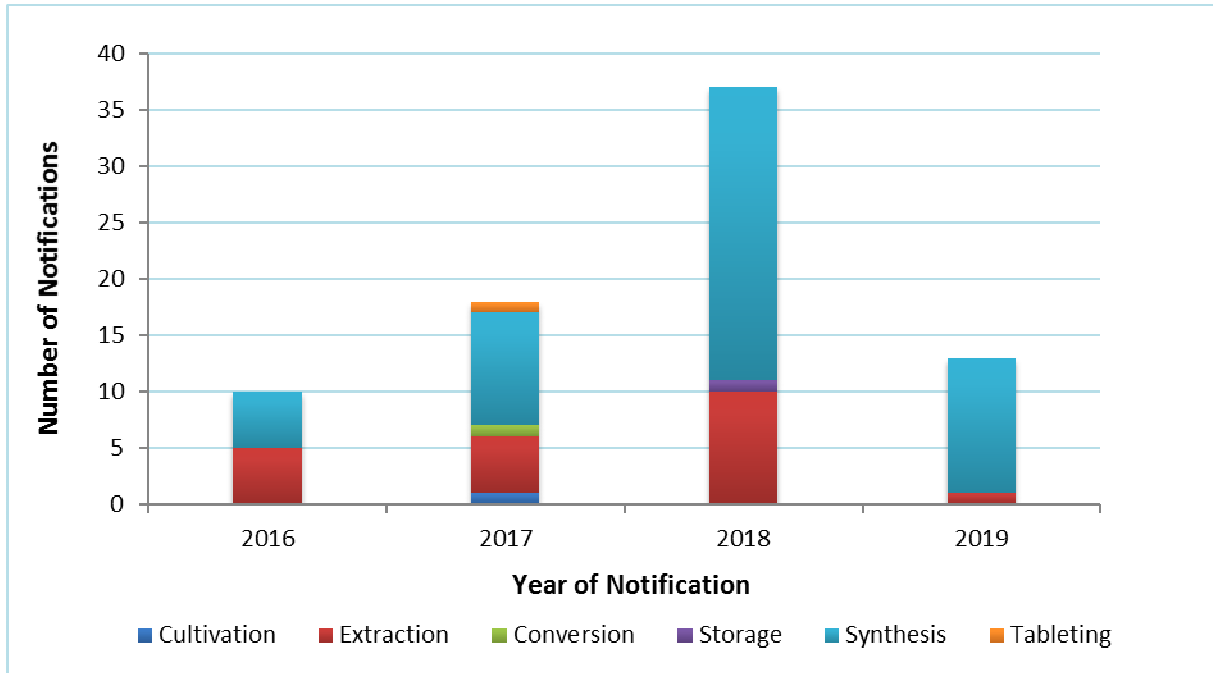


Figure 3. Clan lab notifications by manufacturing process between October 2016 and September 2019.

Drug types and methods of production

Clandestine laboratories manufacturing amphetamine-type stimulants (ATS) continue to account for the greatest proportion of detections. Methamphetamine remains the main drug produced (85%) followed by cannabis oil (12%), gamma-hydroxybutyrate (GHB or Fantasy) (6%), MDMA (Ecstasy) (4%), and DMT (N,N-Dimethyltryptamine), ephedrine, psilocybin (mycelium) mushrooms (3%) of all clan labs detected.

Nearly 86% (n=67/78) of all clan labs notified from October 2016 manufactured ATS of which methamphetamine accounted for 98% (n=66/67). Figure 4 below shows the types of controlled drug manufactured in notified clan labs since the implementation of the policy.

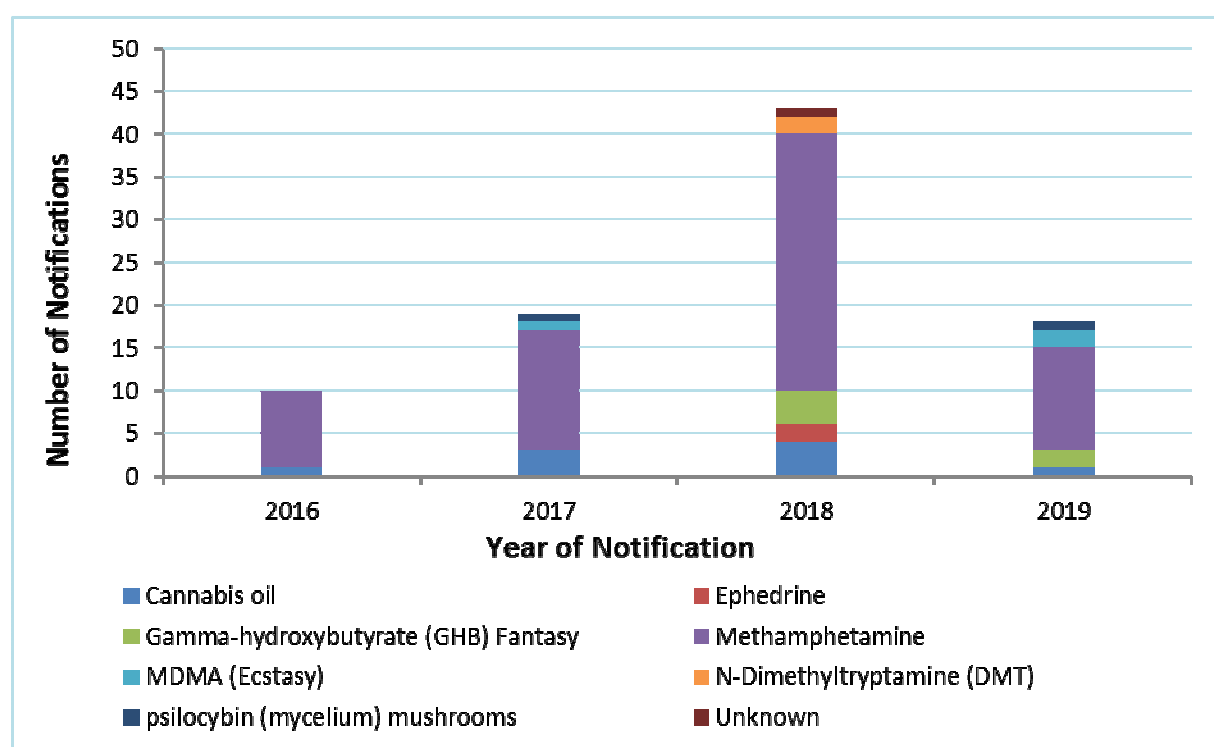


Figure 4. Controlled drug manufactured in notified clan labs between October 2016 and September 2019.

Note: 12 notifications involved the manufacture of more than one controlled drug including methamphetamine.

Methamphetamine synthesis methods

In South Australia, a total of 49 clan labs were notified with suspected methamphetamine synthesis. There are four main methods that have been identified in Australia in relation to methamphetamine synthesis (ACIC 2019). These include:

Hypophosphorus (or Hypo) method - This is a variation of the red phosphorous method where ephedrine or pseudoephedrine is reduced using iodine and hypophosphorus acid. This is the most common method of methamphetamine manufacture in Australia (ACIC 2018, ACIC 2019), accounting for 58% (n=28) of all notified clandestine laboratories manufacturing ATS.

Birch reduction method (or Nazi) method - Ephedrine or pseudoephedrine is reduced in a chemical process using anhydrous ammonia and lithium or sodium metal to yield methamphetamine. This method accounted for 4% (n=2) of all notified clandestine laboratories manufacturing ATS.

Phenyl-2-propanone (or P2P) method - Rather than ephedrine or pseudoephedrine, the basis for the manufacture of methamphetamine using the P2P method is methylamine and phenyl-2-

propanoane. This involves the reduction of P2P using methylamine. This method accounted for 2% (n=1) of all notified clandestine laboratories manufacturing ATS.

Red phosphorous (or RP) method - Ephedrine or pseudoephedrine is reduced using red phosphorous and hydriodic acid. This method accounted for 16% (n=8) of all notified clandestine laboratories manufacturing ATS.

The synthesis method of 22% (n=11) of notified clan labs is currently unknown and more than one synthesis method was used in 18% (n=9) of notified clan labs. Figure 5 shows the synthesis methods used in the manufacture of methamphetamine in notified clan labs since the implementation of the policy.

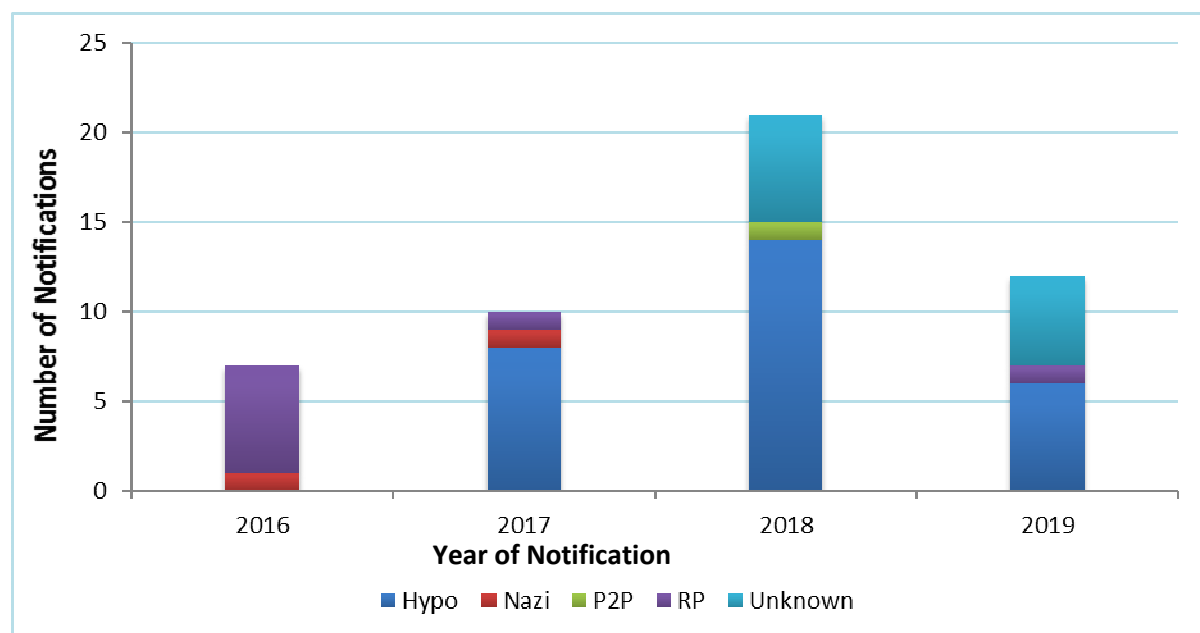


Figure 5. Synthesis method of methamphetamine manufactured in notified clan labs between October 2016 and September 2019

Sampling and methamphetamine contamination

Due to potential health risks associated with chemical contamination following the drug manufacturing processes, the National Clandestine Drug Laboratory Remediation Guidelines (National Guidelines) recommends performing a site assessment to determine the extent of the contamination. This assessment involves a number of steps including analysing methamphetamine concentration from at least five surfaces from inside the premises. The current National Guidelines Investigation Levels (ILs) for methamphetamine on indoor surfaces is 0.5 µg/100cm².

SA Health received sampling results from 45 of the 72 notified clan labs (excluding notified clan labs that engaged in cannabis oil extraction or psilocybin (magic mushroom) cultivation). Approximately 73% (n=33) of notified clan lab assessors obtained a minimum of five samples. Methamphetamine synthesis was suspected to have occurred in 42 cases. Methamphetamine concentrations in 88% (n=37) of notified clan labs were shown to be greater than the current National Guidelines ILs and 12% (n=5) reported below ILs. A total of 24 cases tested for more than methamphetamine (pseudo/ephedrine/amphetamine) resulting in one notified clan lab above ILs for pseudo, two above ILs for ephedrine and one above ILs for amphetamine.

Eight notified clan labs were tested for volatile organic compounds (VOCs) with positive detections in two. Soil sampling was conducted for two notified clan labs, both with contamination levels below ILs.

The highest and lowest concentrations of methamphetamine were both detected in Category A clan labs with detections of 88µg/100cm² and 0.02µg/100cm² respectively. Analysis showed approximately 90% of all category B and C clan labs, and 80% of category A clan labs manufacturing

methamphetamine had methamphetamine contamination above ILs. Table 3 summarises these findings.

Methamphetamine contamination within assessed properties was widespread with contamination often extending well beyond the areas where equipment was stored, or manufacture was believed to have taken place.

Table 3. Clan lab notification sample results by category between October 2016 and September 2019.

| Laboratory Category | Number of cases sampled for Meth. contamination | Number of cases <0.5µg/100 cm ² | Number of cases >0.5µg/100 cm ² | Highest concentration on a single sample (µg/100cm ²) | Range of concentration (µg/100cm ²) |
|---------------------|---|--|--|---|---|
| A | 5 | 1 | 4 | 88 | 0.02 - 88 |
| B | 11 | 1 | 10 | 20 | 0.27 - 20 |
| C | 29 | 3 | 26 | 81 | <0.5 - 81 |

Geographic locations

Clan labs were notified from Whyalla to Mount Gambier, with the majority of notifications for clan labs falling within metropolitan Adelaide. Of the notifications for clan labs within metropolitan Adelaide, most were located in the western and northern suburbs (see Figure 6).

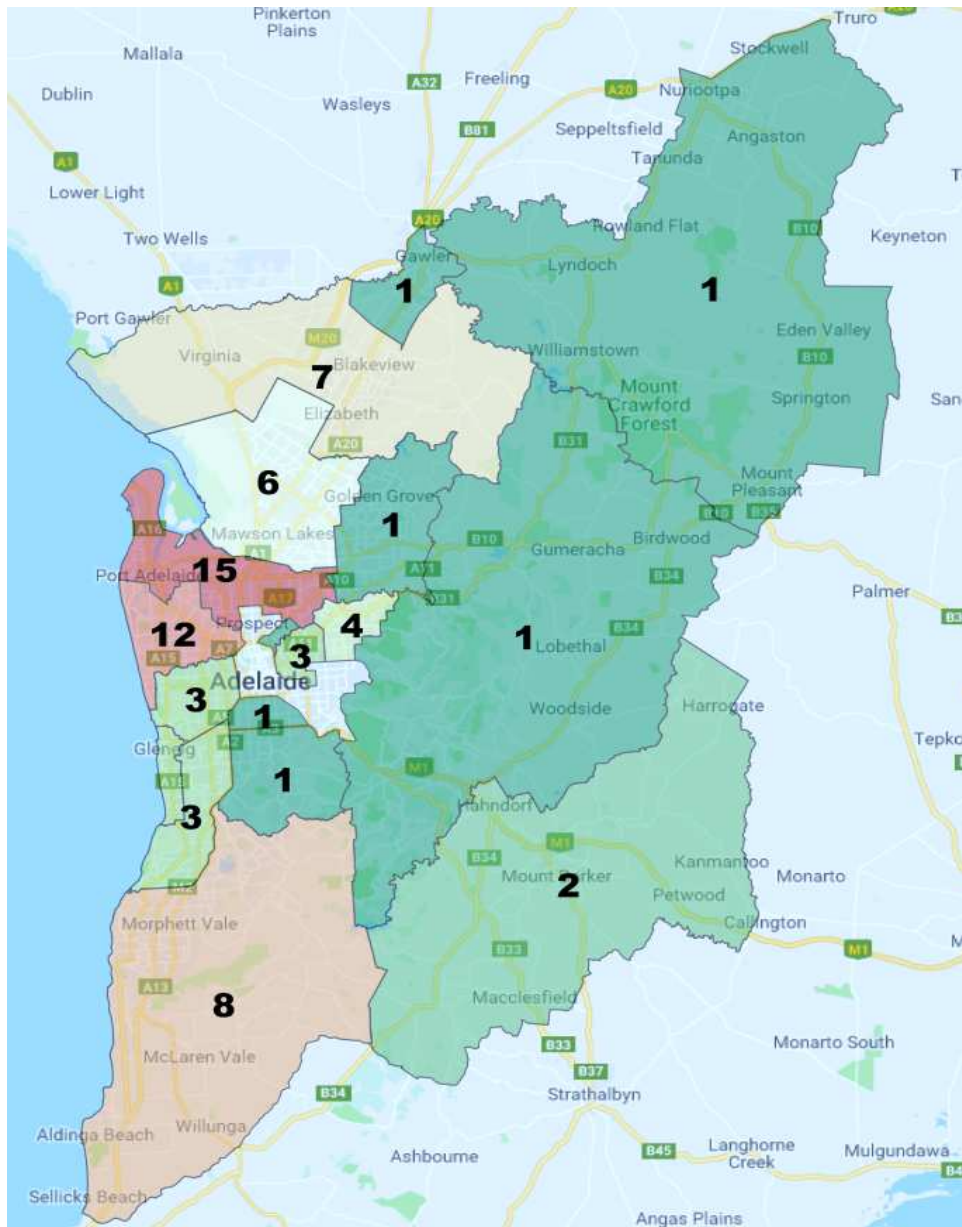


Figure 6. Geographic distribution of notified clan labs in greater metropolitan Adelaide by council area between October 2016 and September 2019.

Since the implementation of the Policy in October 2016, 78 Clan labs have been notified across 23 councils. Table 4 and figure 7 summarise the number of clan labs notified in each council by category and controlled drug manufactured.

Table 4. Clan lab notifications by council, category and controlled drug between October 2016 and September 2019.

| Council | Total Notification | Category | | | Controlled Drug Manufactured | | | | | | | |
|------------------------------|--------------------|------------|------------|------------|------------------------------|-----------|---------------|-----------------|----------------|-----|------------|---------|
| | | Category A | Category B | Category C | Cannabis Oil | Ephedrine | GHB (Fantasy) | Methamphetamine | MDMA (Ecstasy) | DMT | Psilocybin | Unknown |
| Adelaide Hills | 1 | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 |
| Barossa | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 |
| Campbelltown | 4 | 0 | 0 | 1 | 1 | 1 | 0 | 3 | 0 | 0 | 0 | 0 |
| Charles Sturt | 12 | 2 | 4 | 6 | 0 | 0 | 1 | 11 | 0 | 0 | 0 | 0 |
| Coorong | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 |
| Gawler | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 |
| Holdfast Bay | 3 | 0 | 2 | 1 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 |
| Marion | 3 | 0 | 1 | 2 | 0 | 1 | 1 | 2 | 0 | 0 | 0 | 0 |
| Mitcham | 1 | 0 | 1 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 |
| Mount Barker | 2 | 0 | 0 | 2 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 |
| Mount Gambier | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 |
| Norwood Payneham & St Peters | 3 | 1 | 0 | 2 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 |
| Onkaparinga | 8 | 1 | 1 | 6 | 2 | 0 | 1 | 6 | 1 | 0 | 0 | 0 |
| Playford | 7 | 0 | 1 | 6 | 2 | 0 | 0 | 5 | 0 | 0 | 0 | 0 |
| Port Adelaide Enfield | 15 | 4 | 3 | 8 | 2 | 0 | 1 | 14 | 2 | 1 | 0 | 0 |
| Salisbury | 6 | 0 | 4 | 2 | 0 | 0 | 0 | 6 | 0 | 0 | 0 | 0 |
| Tea Tree Gully | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 |
| Unley | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 |
| Victor Harbor | 1 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 |
| Walkerville | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 |
| West Torrens | 3 | 0 | 0 | 3 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 1 |
| Whyalla | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 |
| Yorke Peninsula | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 |

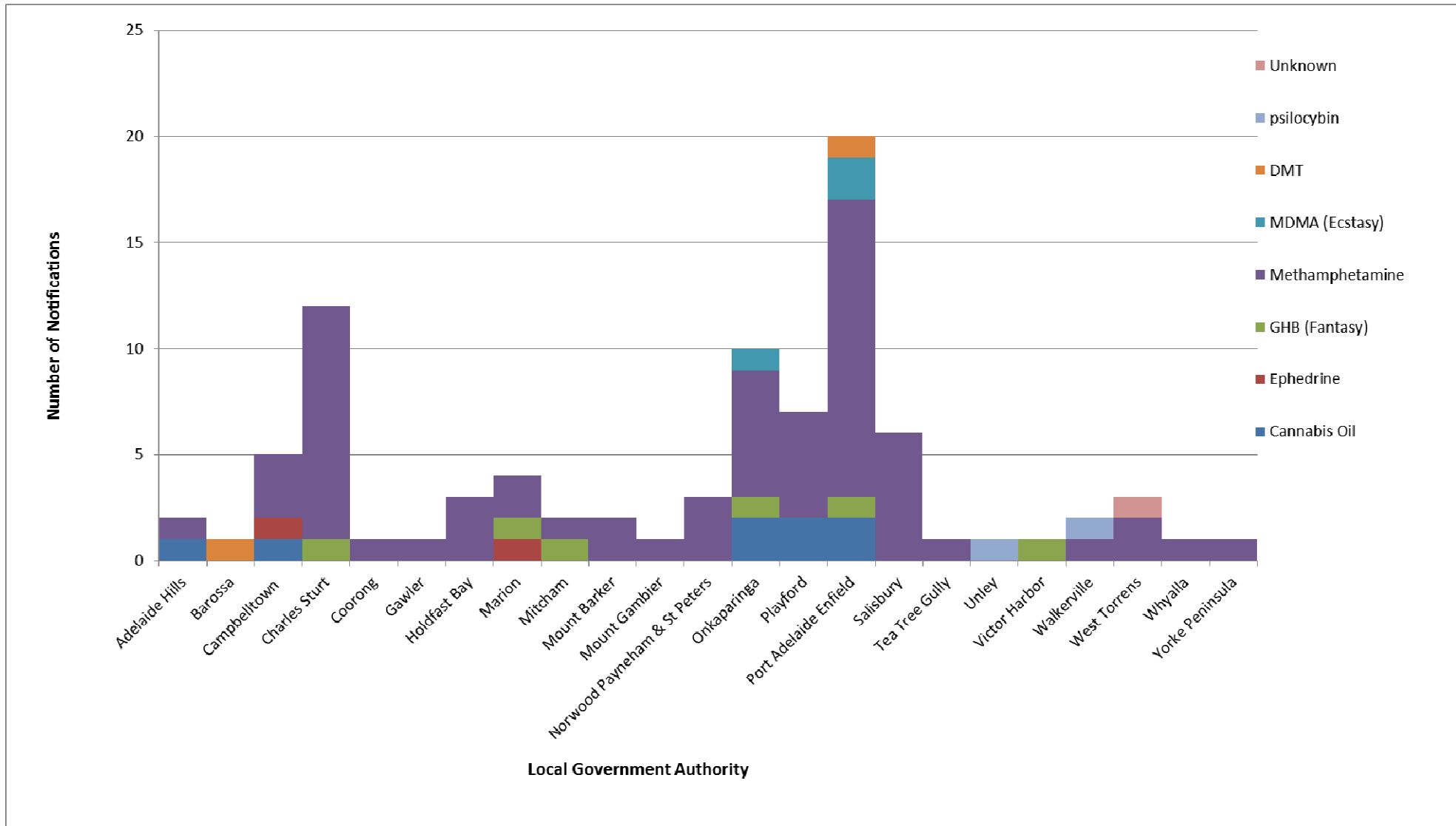


Figure 7. Clan lab notifications by council and by controlled drug manufactured between October 2016 and September 2019

Conclusions

Since the commencement of the Policy and the Practice Guideline in 2016, 78 clan labs have been notified to councils for investigation. Contamination assessments for 45 of these notified clan labs were reviewed and the following trends were identified.

- > Clan labs manufacturing ATS continue to account for the greatest proportion of notifications, with the manufacture of methylamphetamine being most common.
- > The hypophosphorus method is the predominant method used in the manufacture of ATS in notified clan labs in South Australia.
- > The majority of notified clan labs were classified as Category C, with Category A being the least commonly notified.
- > Site assessments of notified clan labs show that Category C laboratories are often highly contaminated but importantly, these do not pose a lower risk to public health when compared to the other categories.
- > Approximately 70% of notified clan labs were not sampled and tested according to the National guidelines and the Practice Guideline (number of samples, type of samples, sampling method and/or use of unsuitably qualified experts for site assessment and site validation).
- > Assessment and remediation for contamination of septic systems (where present) was not conducted; despite this being required by the National Guidelines.
- > Currently, 41% of notified clan labs are yet to be resolved.

Recommendations

- > All SAPOL notified clan labs (irrespective of category) must be assessed for contamination.
- > Site assessment and validation must be conducted by a suitably qualified expert.
- > Suitably qualified experts must conduct and report on-site assessment and site validation in accordance with the National Guidelines and Practice Guideline.
- > To avoid conflicts of interest, remediation contractors should be independent of the suitably qualified experts contracted to assess and validate notified clan labs.
- > EHOs are encouraged to thoroughly review and scrutinise the quality of site assessment and site validation reports upon receipt to ensure they are consistent with the National Guidelines and Practice Guideline
- > SA Health should develop additional supporting materials for EHOs (e.g. self-guided training materials) to support the application of the Policy and the Practice Guideline.

References

Australian Criminal Intelligence (2019). *Illicit Drug Data Report. 2017 - 2018*. [online] Canberra ACT: Australian Criminal Intelligence Commission (ACIC), pp.120 - 130. Available at: https://www.acic.gov.au/sites/default/files/illicit_drug_data_report_2017-18.pdf?v=1564727746 [Accessed 12 Sept. 2019].

Department for Health and Wellbeing, Health Protection Programs. (2016). *Practice Guideline for the Management of Clandestine Drug Laboratories under the South Australian Public Health Act 2011*. Adelaide South Australia: National Library of Australia.

enHealth Guidance on: Clandestine Drug Laboratories and Public Health Risks. (2019). 1st ed. [ebook] Canberra - ACT: Australian Government Department of Health - Office of Health Protection. Available at: [https://www1.health.gov.au/internet/main/publishing.nsf/Content/A12B57E41EC9F326CA257BF0001F9E7D/\\$File/Guidance-Clandestine-Drug-Laboratories-Public-Health.pdf](https://www1.health.gov.au/internet/main/publishing.nsf/Content/A12B57E41EC9F326CA257BF0001F9E7D/$File/Guidance-Clandestine-Drug-Laboratories-Public-Health.pdf) [Accessed 12 Sept. 2019].

Newell, P., Hugel, J., Vallely, P., Wright, J., Makin, S., Borysko, L. and Lau, A. (2011). *Clandestine Drug Laboratory Remediation Guidelines*. [online] Canberra ACT: Commonwealth of Australia. Available at: <https://www.homeaffairs.gov.au/criminal-justice/files/ clandestine-drug-laboratory-remediation-guidelines.pdf> [Accessed 18 Sept. 2019].

For more information

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