Triangulating wastewater and a prospective survey of drug consumption: Advancing insights into Australian drug markets and optimal policy responses

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Funded by the Australian Criminal Intelligence Commission

Context

- Wastewater analysis (WWA) has cemented itself as an important tool to capture drug market trends in Europe, USA, New Zealand and many other contexts (ACIC, 2021; Castiglioni et al, 2016; EMCDDA, 2021; Prichard et al, 2021)
- National roll out in Australia occurred in 2016 in response to the National Ice Taskforce

  > "The unique complexities of the ice problem and the current gaps in our understanding of the market for the drug highlight the critical need for better data, more research and regular nationally consistent reporting.." (Department of the Prime Minister and Cabinet 2015, p.v)

- By August 2021 WWA covered an estimated 57% of the Australian population, inc 22 sites in capital cities and 36 in regional cities (ACIC, 2022)

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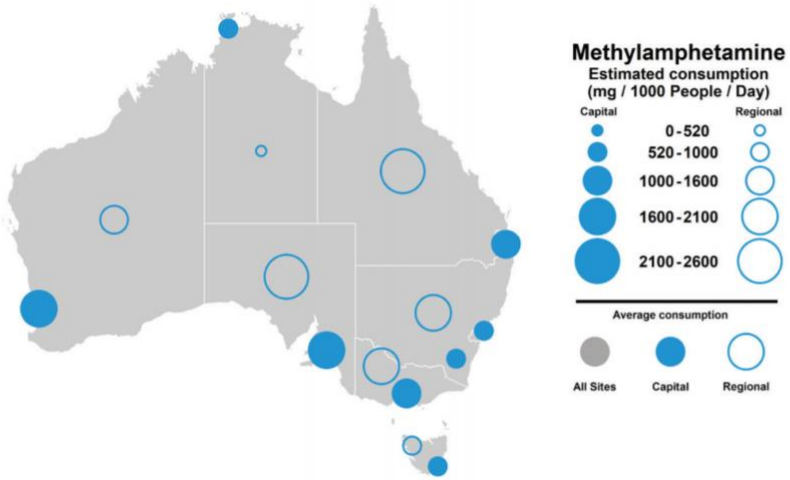
Context (cont)

- Brought to the fore multiple new insights (ACIC, 2020; 2021; 2022)
- Yet increasing need to triangulate WWA data with epidemiological surveys (e.g. Prichard et al, 2021)
- This is because WWA can provide data on the overall *amount* of drug used, but not *in what circumstances* drugs are used

Figure 12: Estimated average methylamphetamine consumption per jurisdiction for April 2020 in mg consumed per day per thousand people. The number of collection days varied from 5-7.



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Our Project

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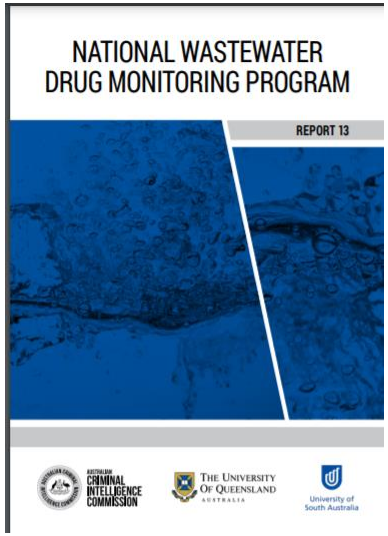
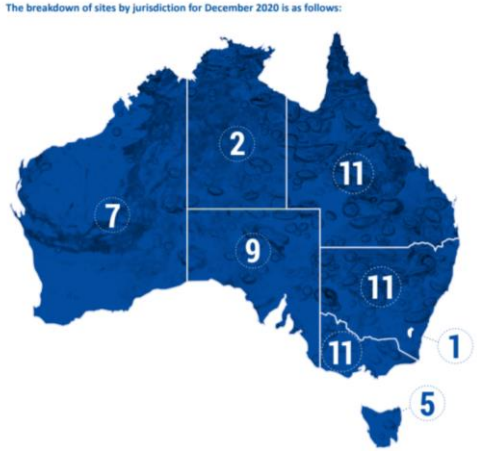
Purpose:

- To conduct a prospective 90-day survey to obtain detailed data on patterns of drug consumption in a regional community
- To triangulate the survey data against wastewater data for the same town and time period
- To inform policy and practice



Methods



Setting

- One regional town in South Australia where WWA is routinely conducted in Australia (ACIC, 2021)

Wastewater

- Time period: 1 April – 30 June 2021
- Daily samples were provided by South Australian Water and tested for 14 substances as per the National Wastewater Drug Monitoring Program (ACIC, 2021)
- Converted to total consumption in mg and doses per 1000 pop

- **Cross-Sectional Survey**
  - Demographics
  - Drug use patterns in lifetime & last 12 months
  - Drug market trends e.g. price, purity, availability
  - Access to services e.g. treatment, employment

- **90 Day Daily Diary**
  - Daily activities e.g. work
  - Drug use in last day
  - Form, mode of use, location, quantity, purity
  - Method of acquiring drugs

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What drugs were detected?

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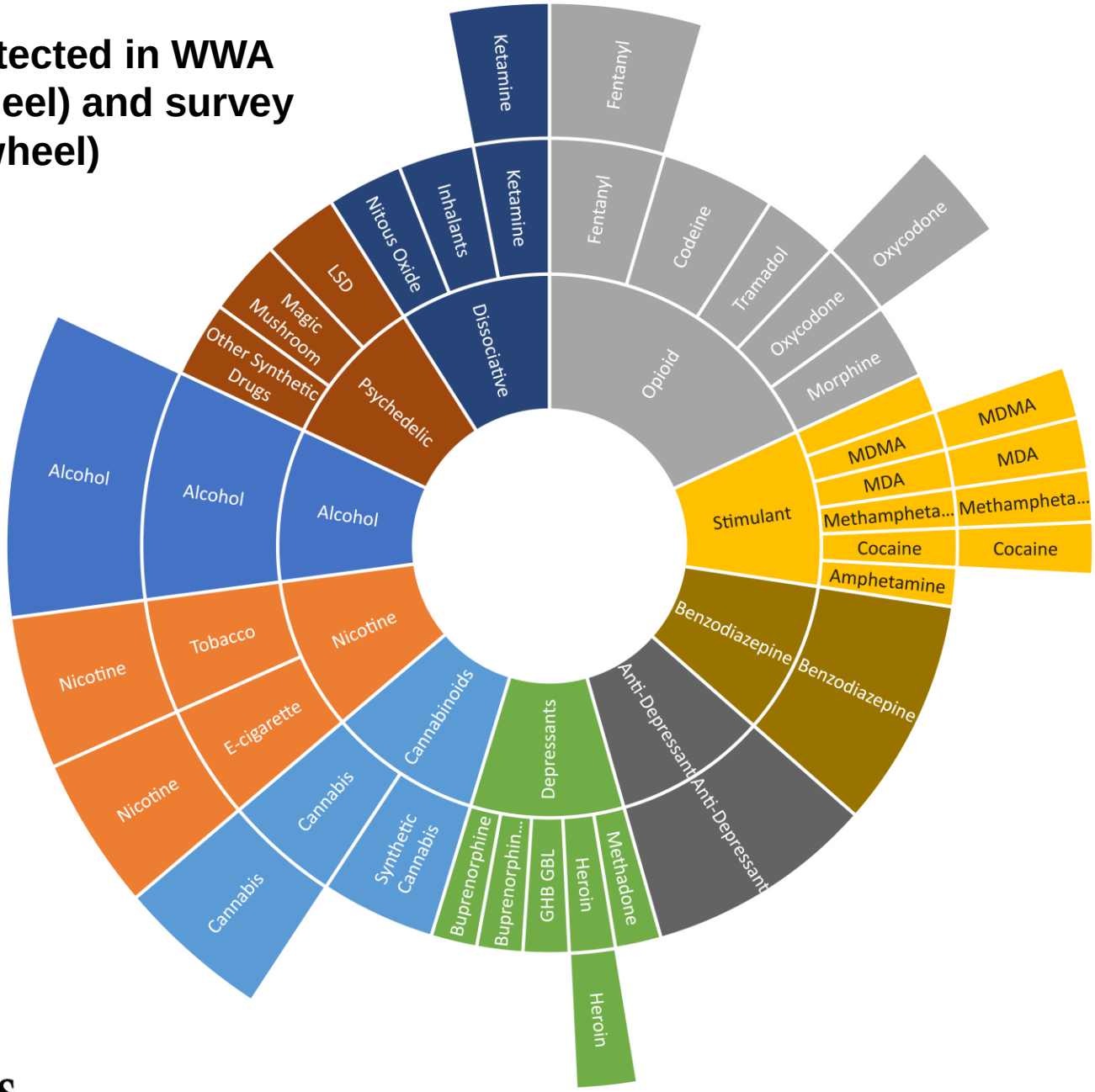
Drugs detected in WWA (outer wheel) and survey (middle wheel)



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Top substances consumed

WWA: estimated total consumption over 90-days

Drug	Total weight (g)
• Alcohol	553,000
• Cannabis	7,463
• Nicotine	326
• Methylamphetamine	260
• Oxycodone	7
• Cocaine	5
• MDMA	1

DDD: estimated total consumption over 90-days

Drug	Total weight (g)
• Alcohol	65,205
• Cannabis	1,042
• Cigarettes	112
• Methylamphetamine	45
• Cocaine	8
• MDMA	4
• Heroin	2

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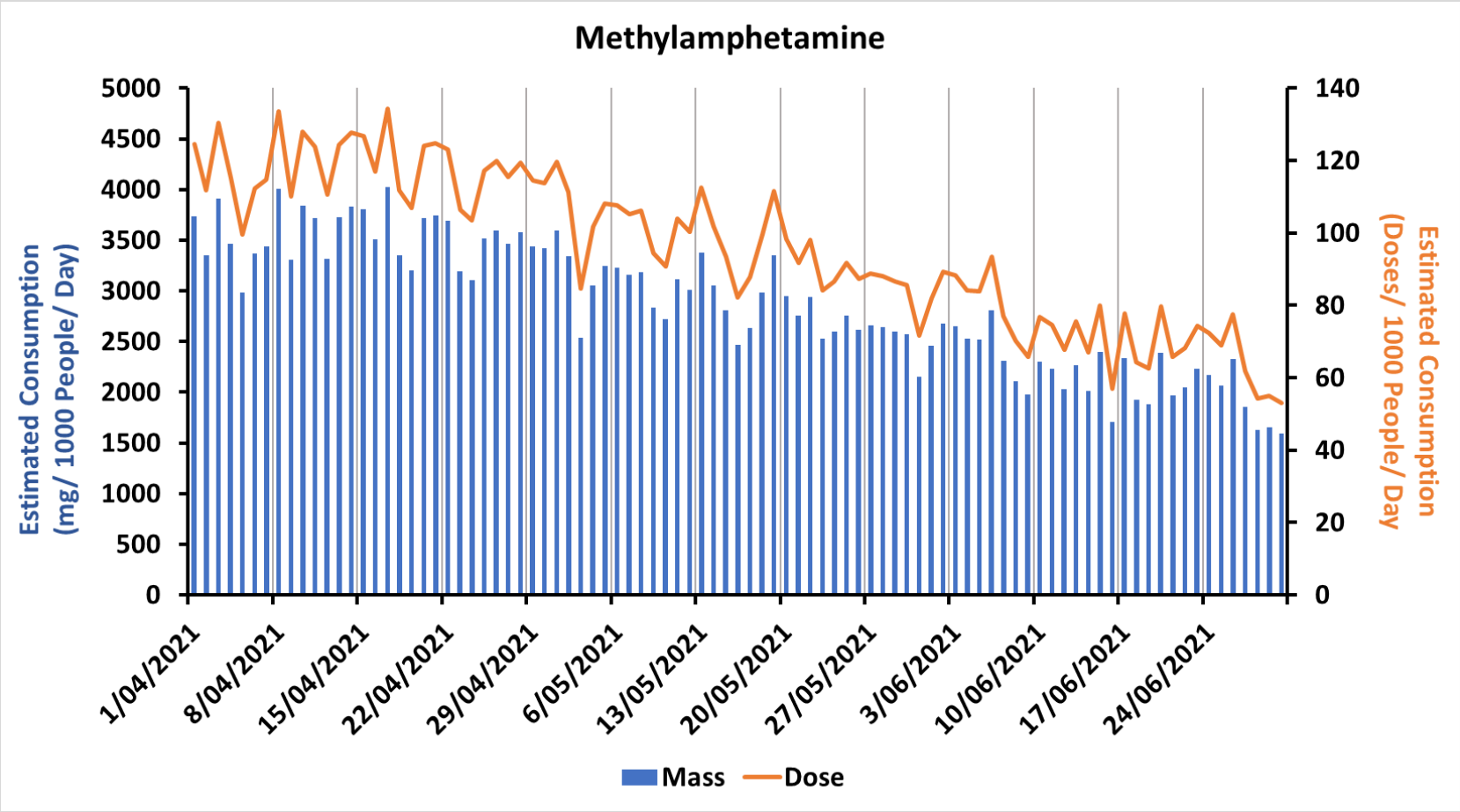
Trends

Methamphetamine



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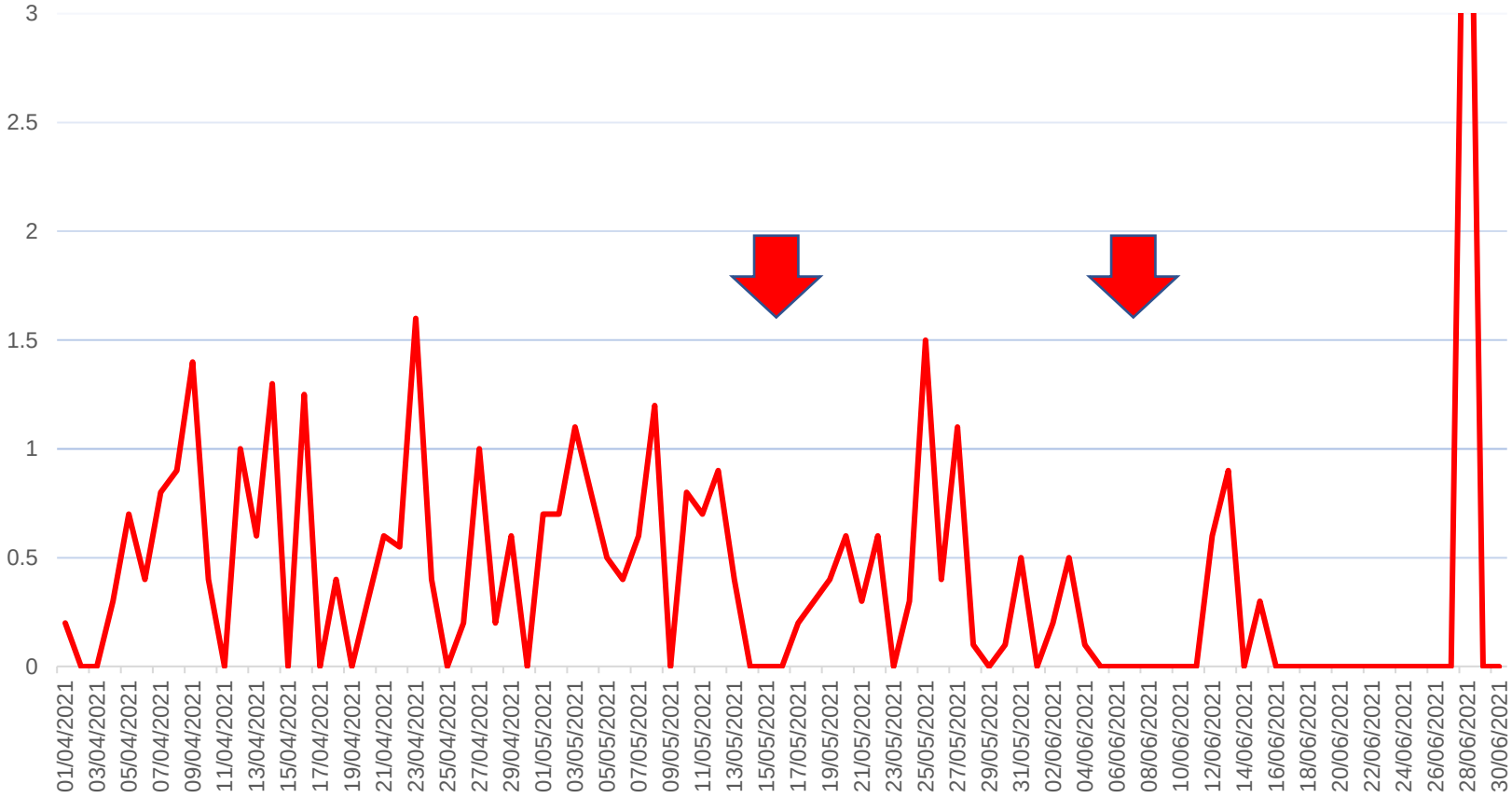
Survey: Methamphetamine use (grams)



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Triangulation: Methamphetamine

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Who is using this drug? And how?

Demographics

- Low educational attainment
- High unemployment
- Low income
- High rates CJS history

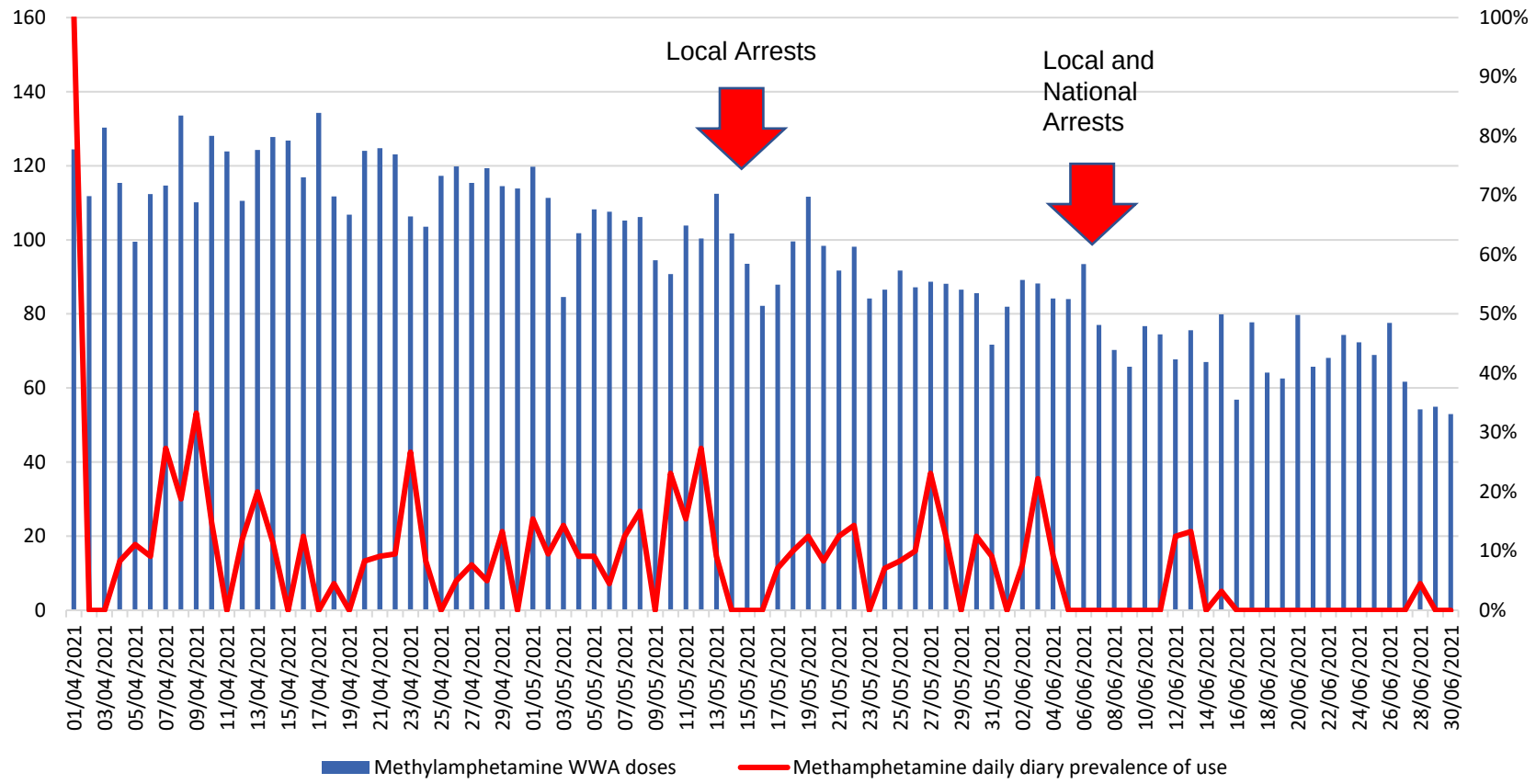
Profiles of use

- Median age of first use – 14.5
- Form – crystal (96.8%)
- Mode of administration – injecting (58.9%)
- Very regular use: daily or near daily
- Frequency of use – 2 times a day (median)
- High rates of dependence (75%)

Drug market availability and sourcing

- Availability – 70% easy/very easy
- Main source – regular dealer – not darknet

Wastewater doses vs survey prevalence



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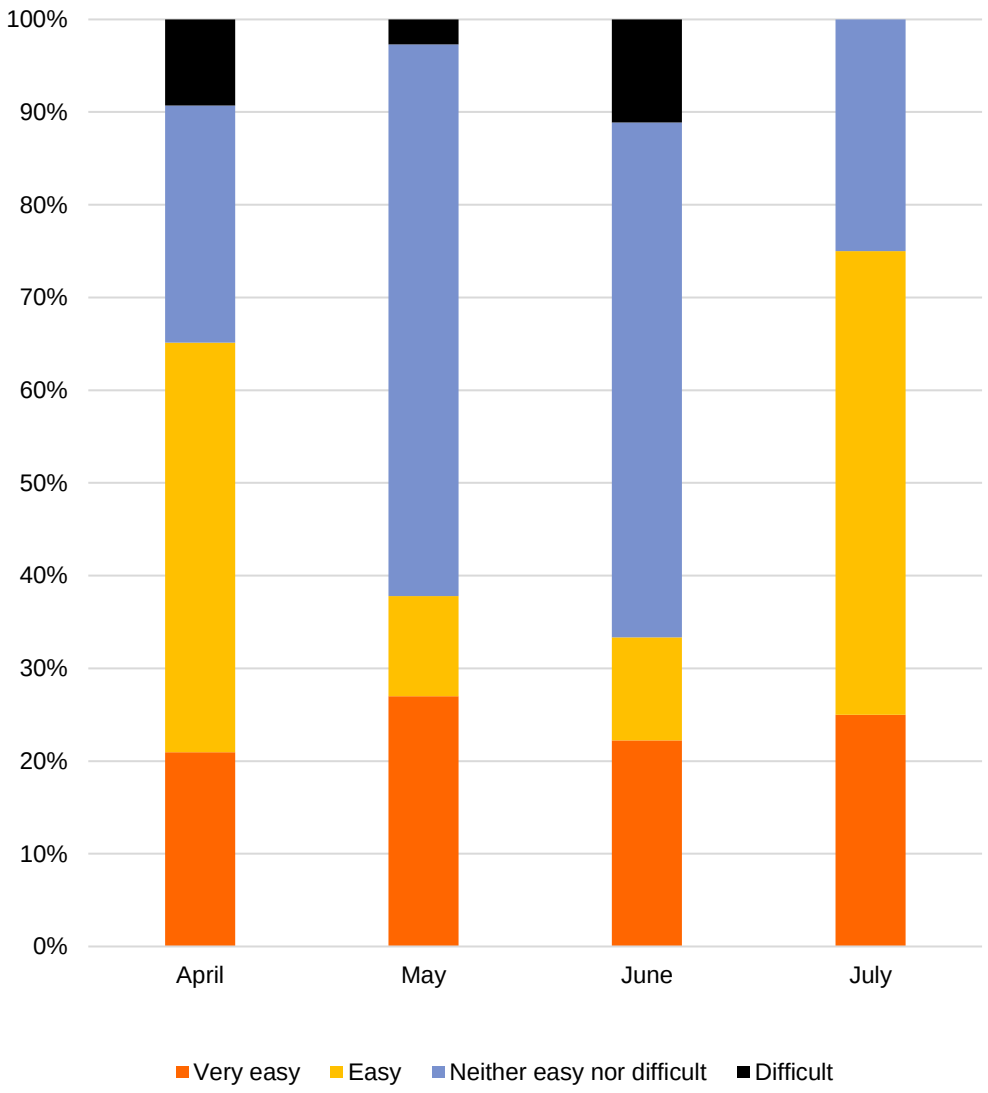
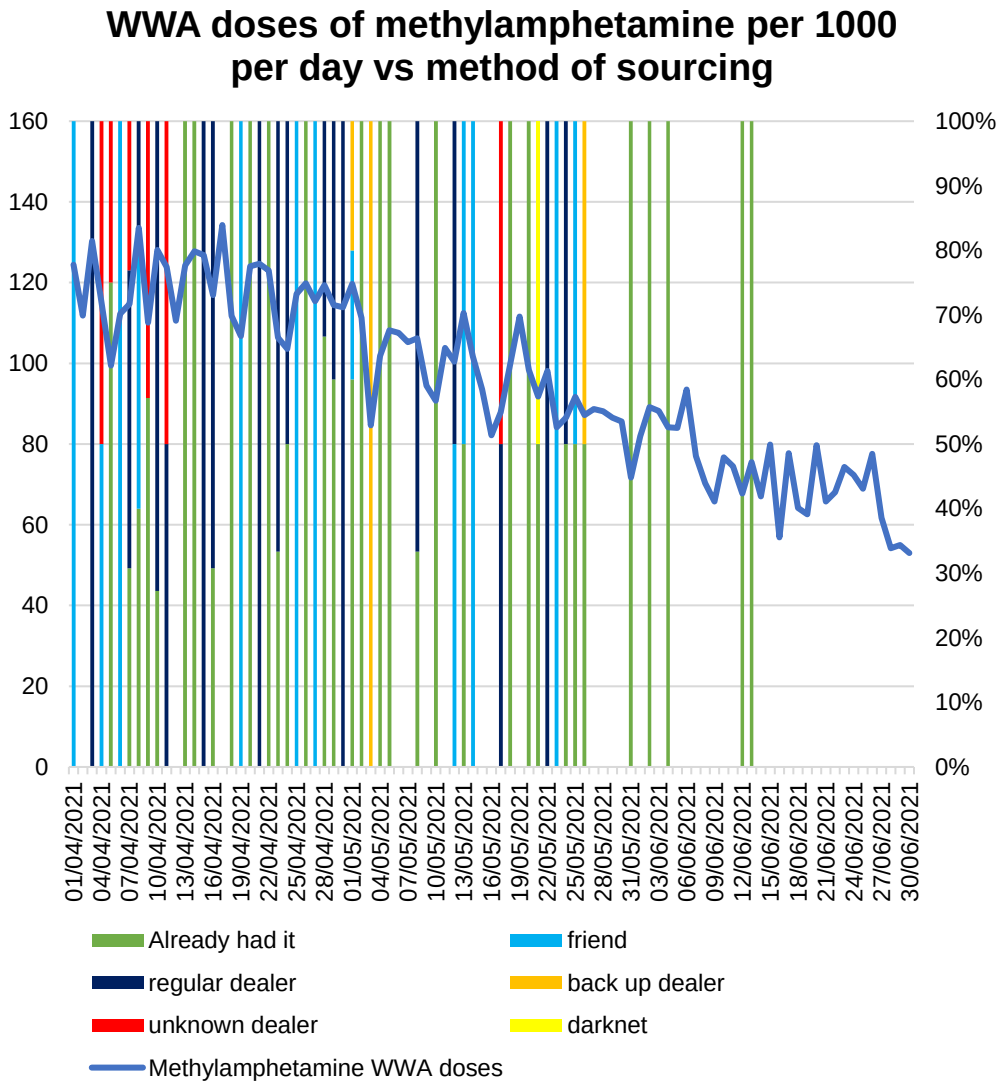
Perceptions of availability of methamphetamine



WWA doses vs method of sourcing



Other value adds of triangulating the data sources

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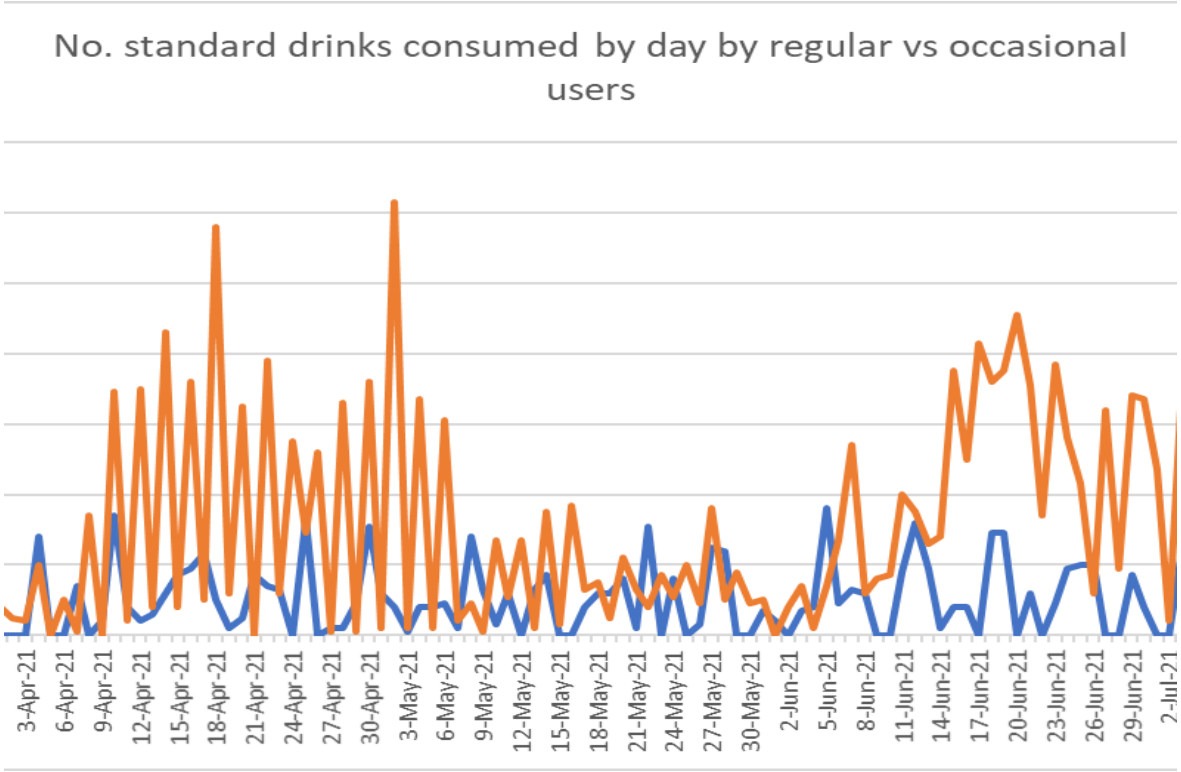
Patterns of regular vs occasional use



Regular consumers account for 75% alcohol consumed by sample

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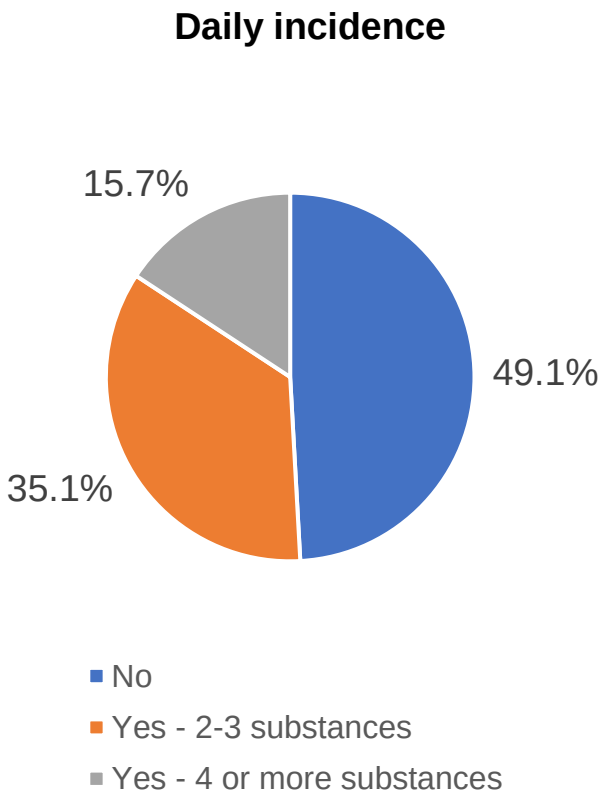
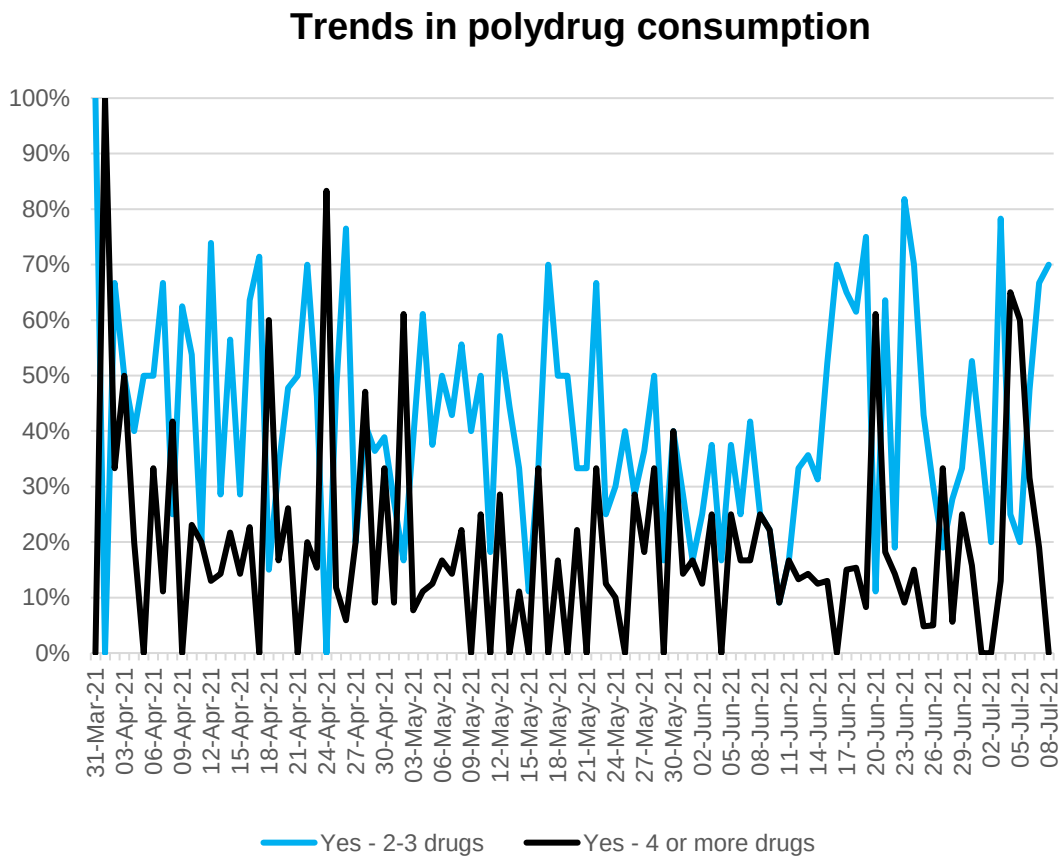
Polydrug consumption





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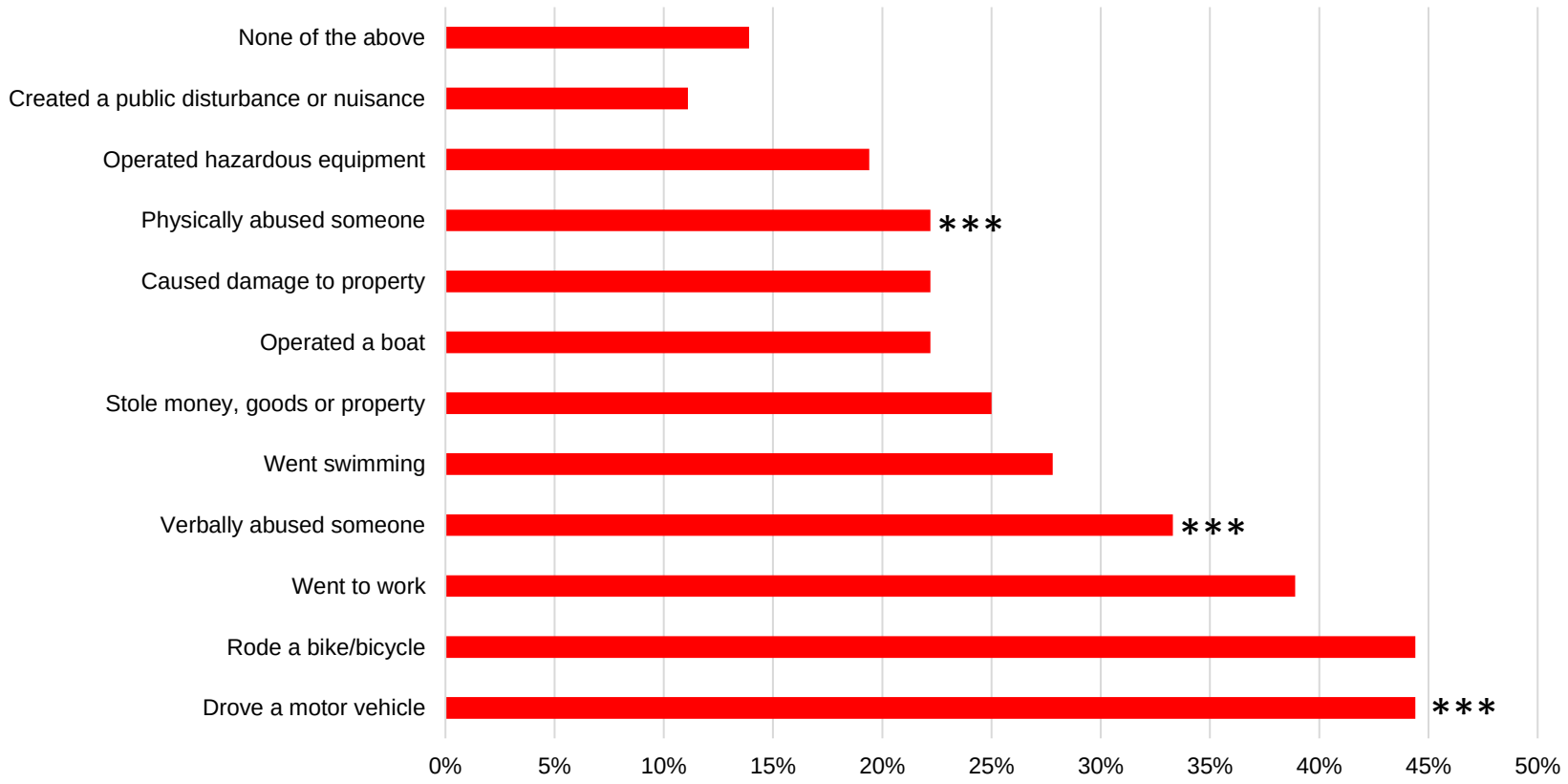
(Risky) activities done while under the influence



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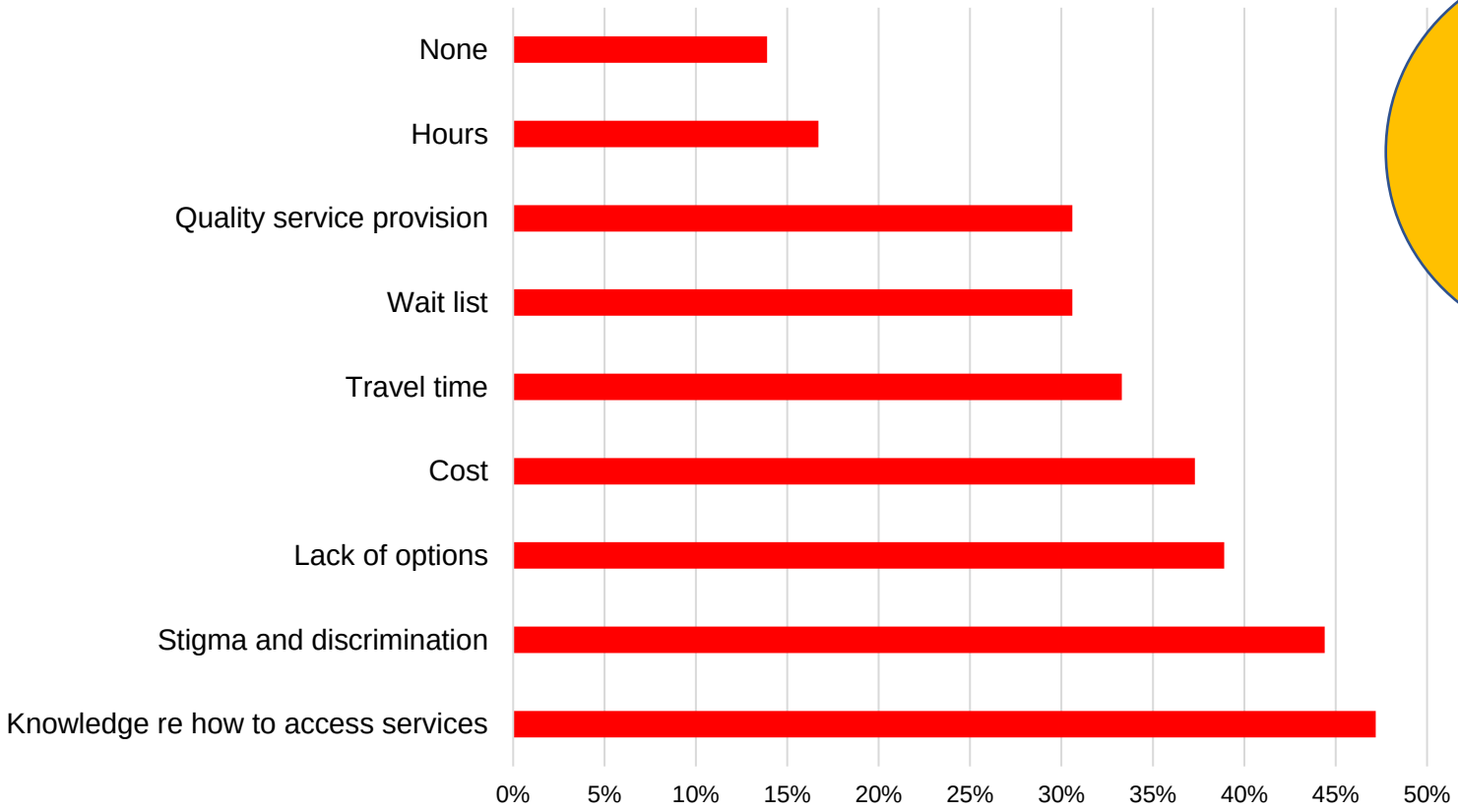
Methamphetamine: Interest in and barriers to AOD treatment



44% sought access to AOD treatment

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Conclusion

The ability to triangulate WWA and a prospective survey brings many benefits:

- To validate accounts & provide more certitude about drug market trends
- To interpret trends
- To understand profiles and circumstances of (harmful) use
- To better inform policy discussions

Hence recommend this approach be replicated in other contexts and settings

When should policy makers triangulate WWA and prospective surveys?

Not everyday!

But particular advantages:

- When rising concerns
- To address significant gaps in knowledge eg Asia Pacific
- To assess impacts and worth of different policy interventions

For more information

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To find out more go to
https://www.flinders.edu.au/centre-crime-policy-research

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