



Drug use in Adelaide Monitored by Wastewater Analysis

Project commissioned by Drug and Alcohol Services
South Australia (DASSA)

Analyses performed by:
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University of South Australia

March 2024

Please note that drug consumption levels may vary slightly from report to report due to adjustments made to sewerage flow rates in some of the treatment plants. The South Australian population has also been updated according to the 2021 Census release (Australian Bureau of Statistics).

Purpose of the project

- > To determine the prevalence of drug use in South Australia, initially in metropolitan Adelaide, through wastewater analysis.

Wastewater analysis CAN tell us:

- > The pattern of drug consumption over the week.
- > Drug consumption levels tested bi-monthly from December 2011 (monthly sampling occurring between April and December 2020).

Wastewater analysis CANNOT tell us:

- > The characteristics of people who use drugs.
- > In what regions of metropolitan Adelaide drug consumption is occurring.
- > The form and way drugs were taken.

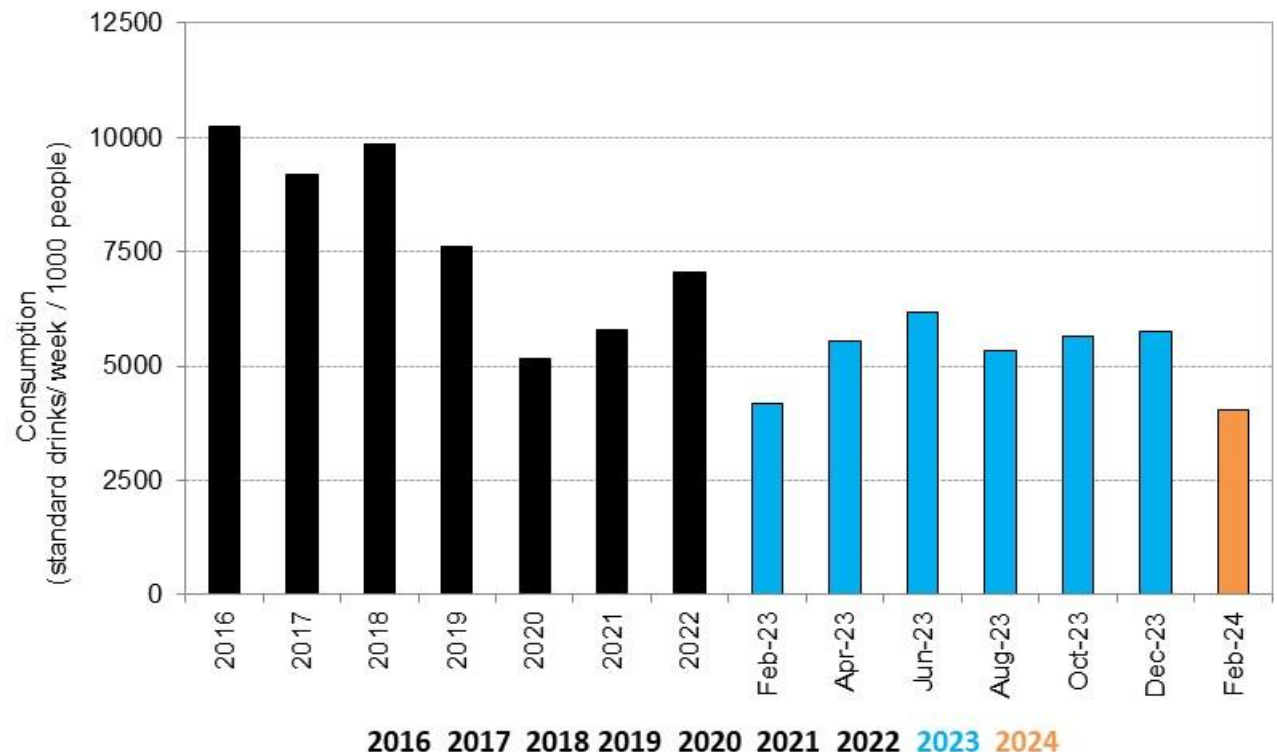
Wastewater sampling

- > Sampling over one week every two months from Adelaide Metropolitan treatment plants, commencing December 2011.
- > In response to COVID-19, sampling was monthly from April to December 2020, returning to bi-monthly thereafter*.
- > Drugs tested:
 - Stimulants: cocaine, MDMA, and methamphetamine.
 - Opioids: morphine, codeine, methadone, oxycodone, fentanyl and heroin.
 - Cannabis (THC).
 - Nicotine and anabasine (tobacco-specific alkaloid).
 - Alcohol.

*Consumption levels in May 2020 are based on weighted averages as sampling only occurred on two days. June 2020 samples were taken before restrictions on alcohol consumption were lifted in restaurants and hotels. Sampling in July 2020 in three of the four plants excludes Wednesday.

Alcohol

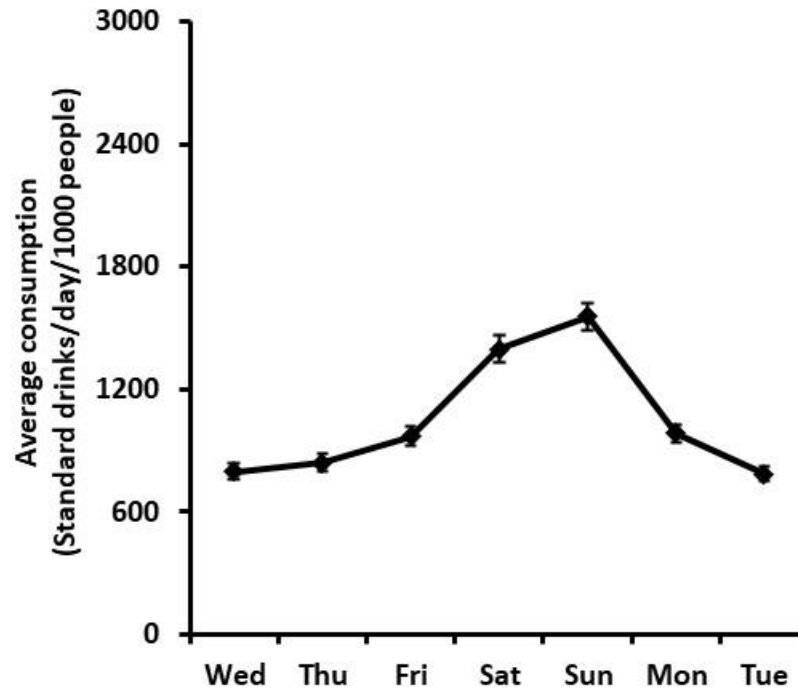
Average levels in 2023 were the lowest seen since 2020.



Average consumption (standard drinks/week/1000 people) from 2016-2020 (excludes February). Weekly consumption (standard drinks/week/1000 people) bi-monthly from February 2021 onwards. Ethanol excretion=0.012 % of ethanol consumption, 10g ethanol per standard drink.

Alcohol

Alcohol consumption levels are higher on weekends.

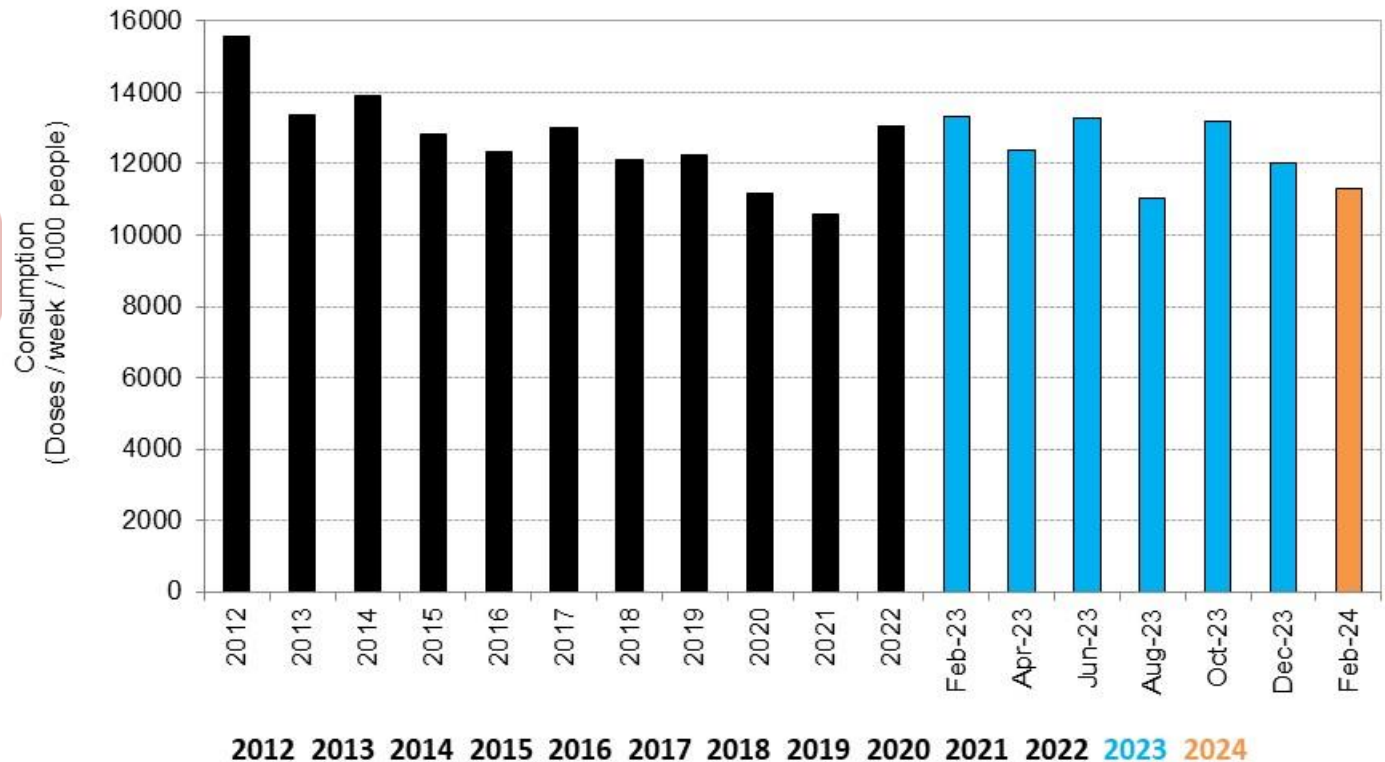


April 2016 – Feb 2024

Average daily consumption (standard drinks/day/1000 people) of ethanol over the week. Dose=10g ethanol per standard drink.

Nicotine*

Average levels in 2022 and 2023 were the highest seen since 2017.

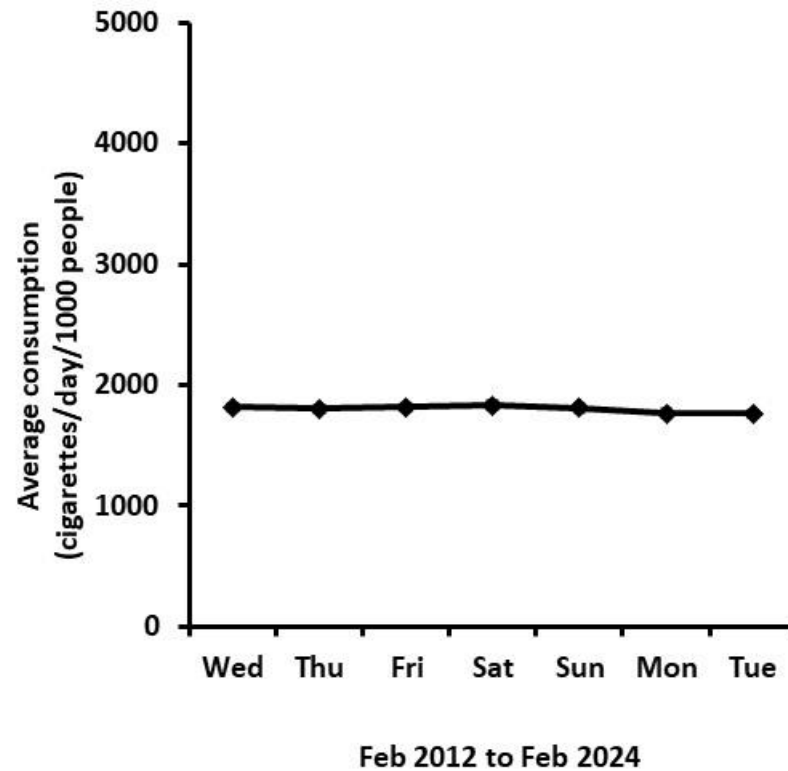


Average consumption (dose/week/1000 people) of nicotine for 2012-2021. Weekly consumption (dose/week/1000 people) bi-monthly from February 2022 onwards. Dose=1mg.

*Does not differentiate between tobacco and nicotine replacement therapy (NRT) use
Drug and Alcohol Services South Australia

Nicotine

Nicotine consumption levels are constant over the week.



Average daily consumption (dose/day/1000 people) of nicotine over the week. Dose=1mg.



OFFICIAL

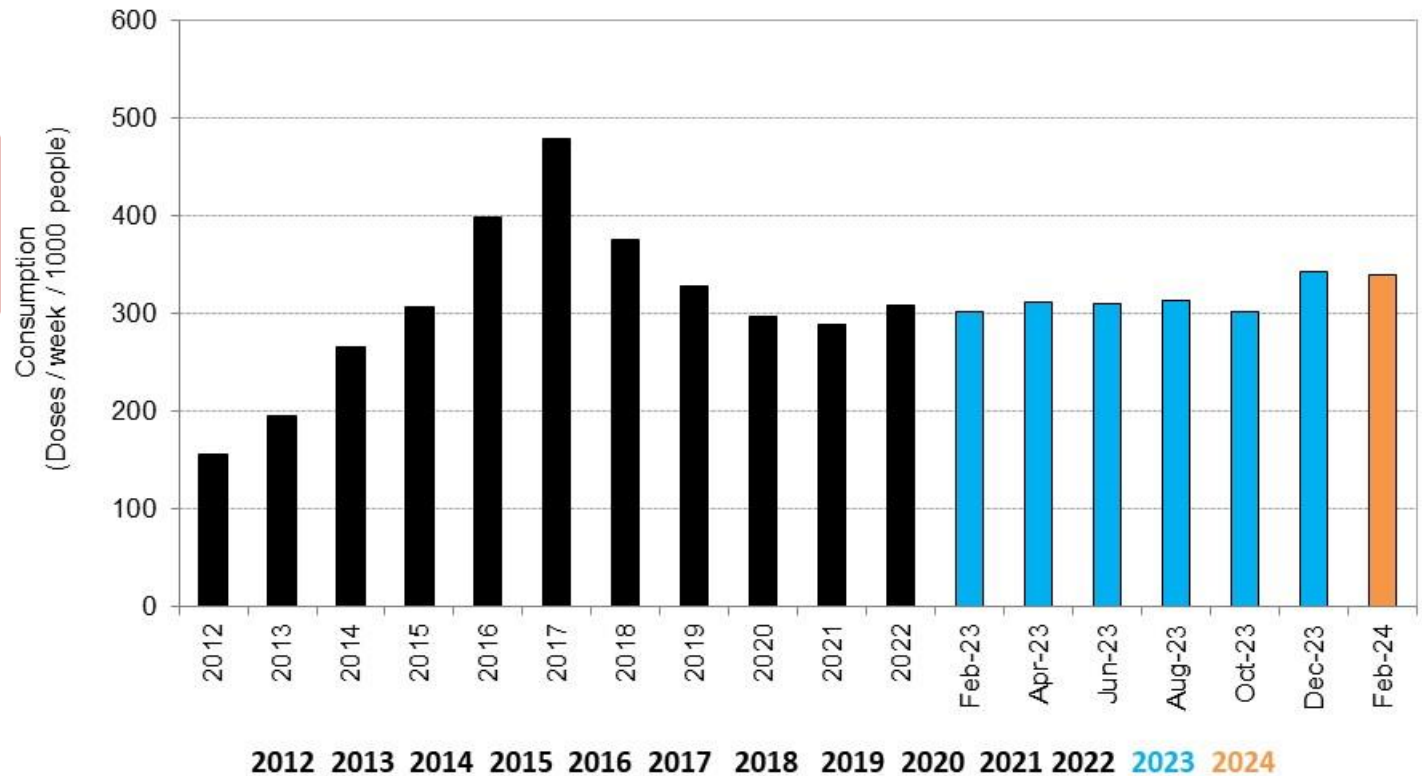
Anabasine*

Anabasine data are being re-analysed due to technical difficulties.

*Tobacco-specific alkaloid.

Methamphetamine

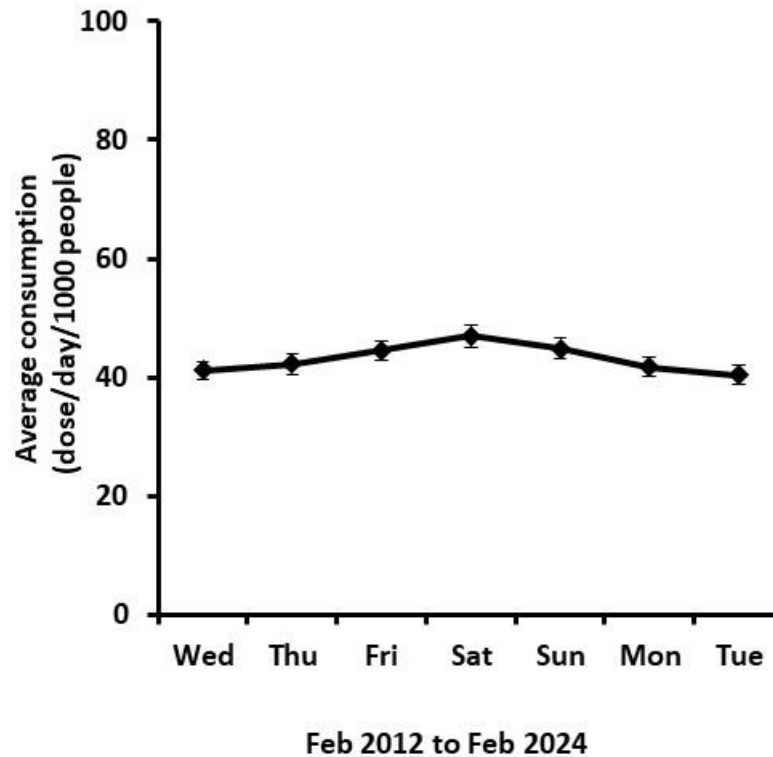
Average levels increased between 2012 and 2017 and have decreased since then. There was an increase between 2020 and 2023, but not to previous levels.



Average consumption (dose/week/1000 people) of methamphetamine for 2012-2021. Weekly consumption (dose/week/1000 people) bi-monthly from February 2022 onwards. Dose=30mg.

Methamphetamine

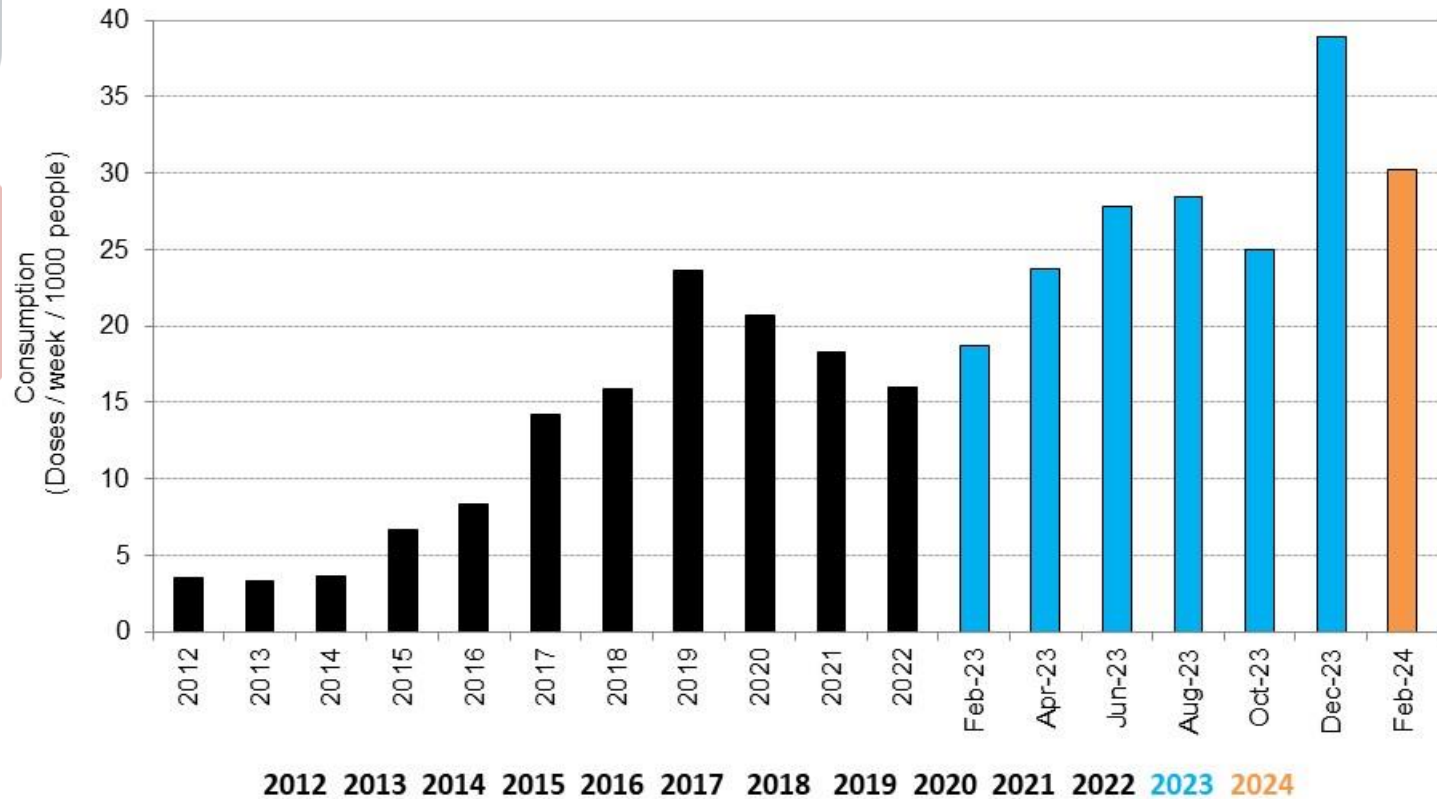
Methamphetamine consumption levels increase slightly on weekends.



Average daily consumption (dose/day/1000 people) of methamphetamine over the week. Dose=30mg.

Cocaine

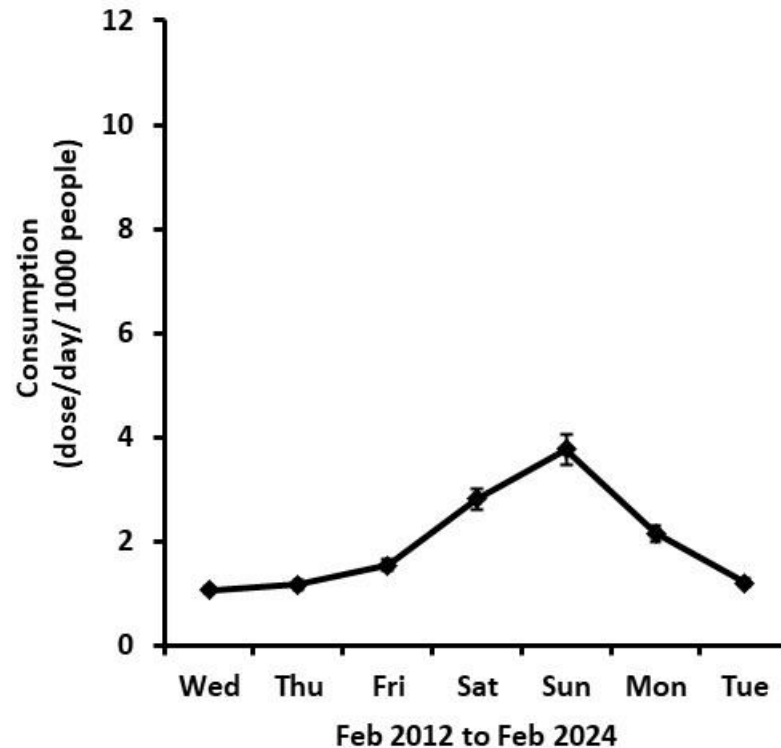
Average levels in 2023 were the highest since reporting began, but low compared with methamphetamine.



Average consumption (dose/week/1000 people) of cocaine for 2012-2021. Weekly consumption (dose/week/1000 people) bi-monthly from February 2022 onwards. Dose=100mg.

Cocaine

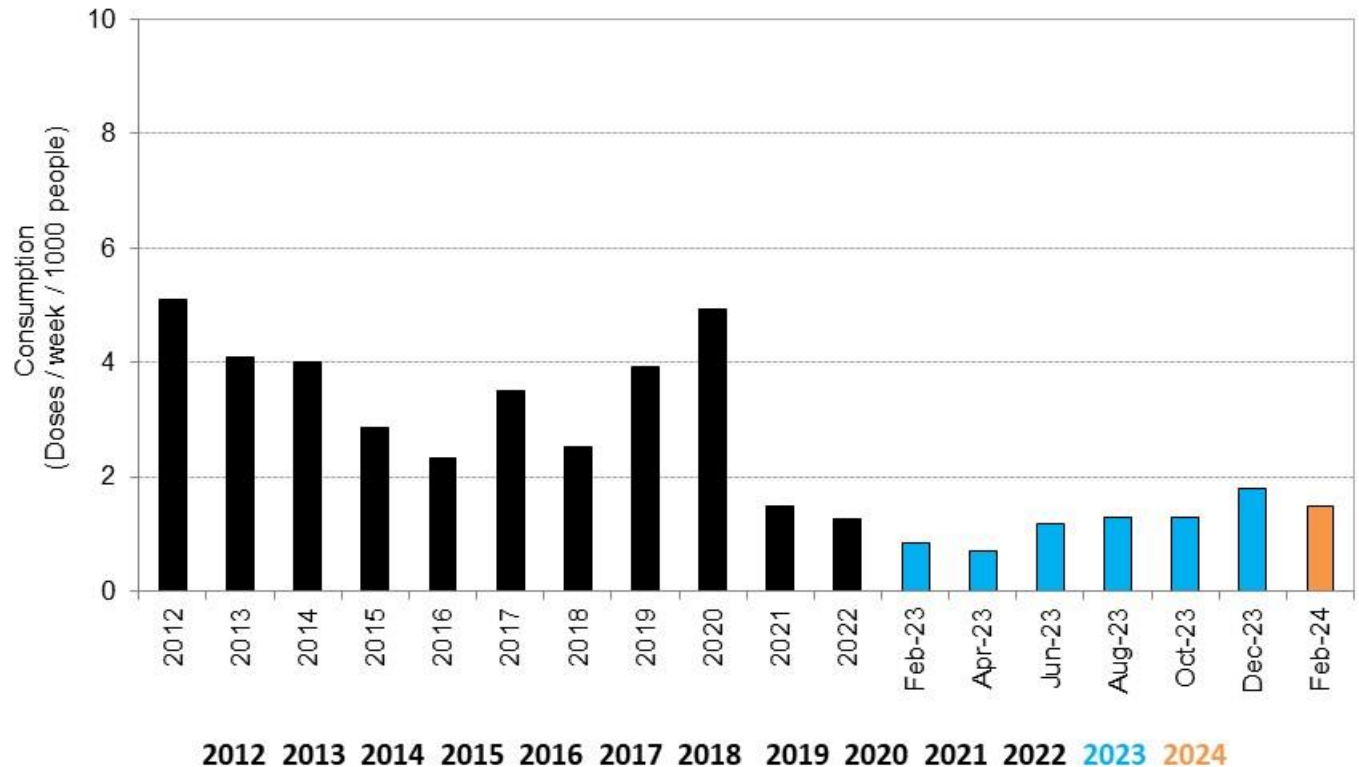
Cocaine consumption levels are higher on weekends.



Average daily consumption (dose/day/1000 people) of cocaine over the week. Dose=100mg.

MDMA (Ecstasy)

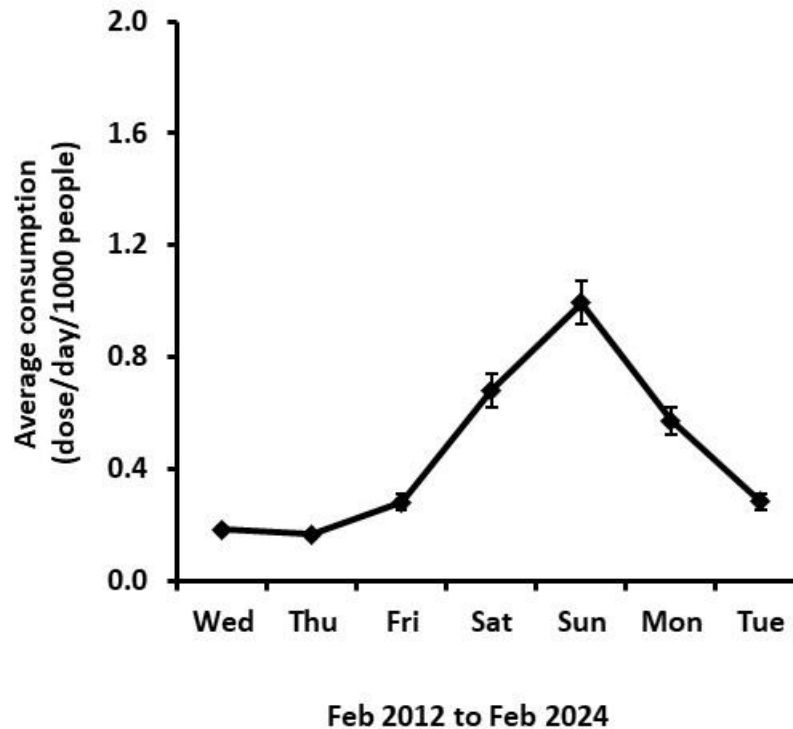
Average levels in 2023 were the lowest since reporting began and are low overall.



Average consumption (dose/week/1000 people) of MDMA for 2012-2021. Weekly consumption (dose/week/1000 people) bi-monthly from February 2022 onwards. Dose=100mg.

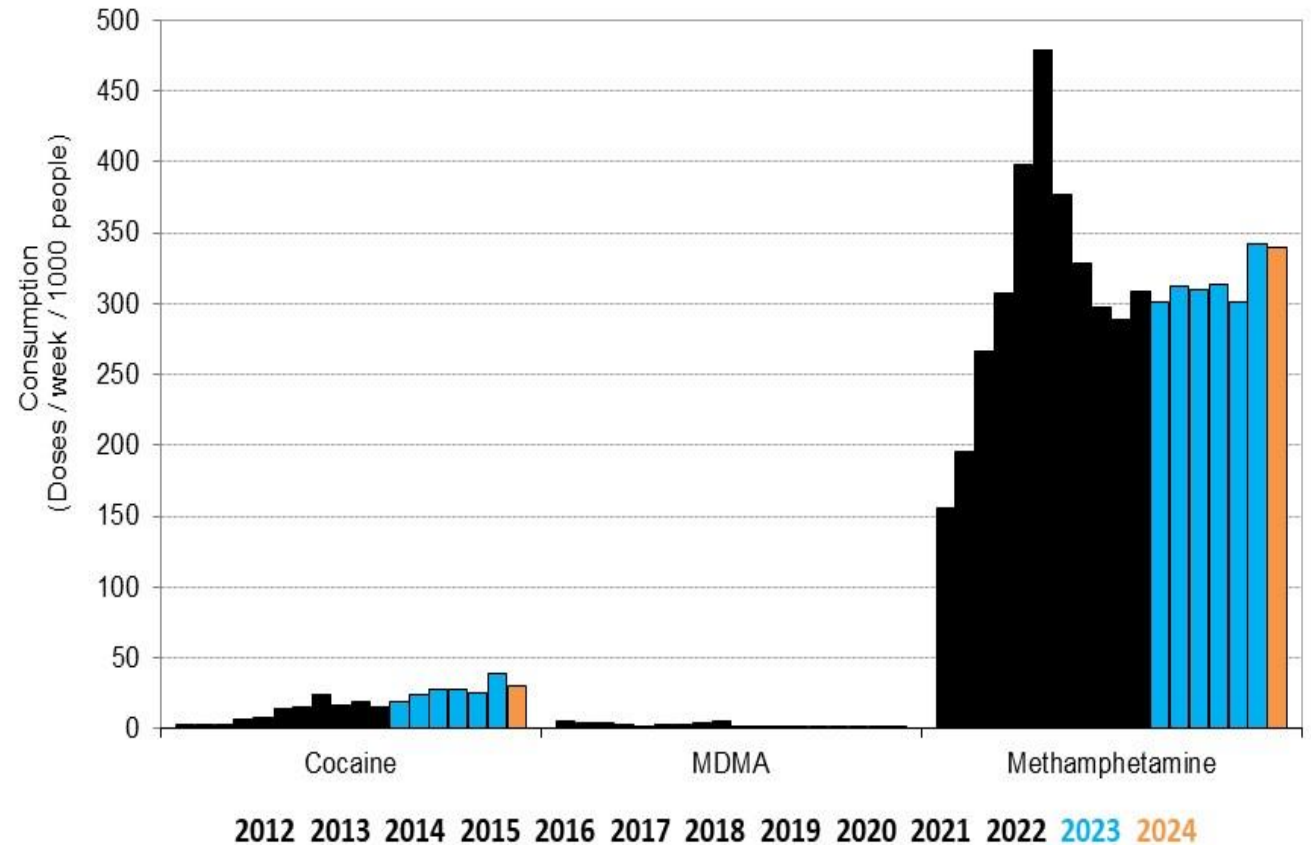
MDMA

MDMA consumption levels are higher on weekends.



Average daily consumption (dose/day/1000 people) of MDMA over the week. Dose = 100mg.

Stimulants



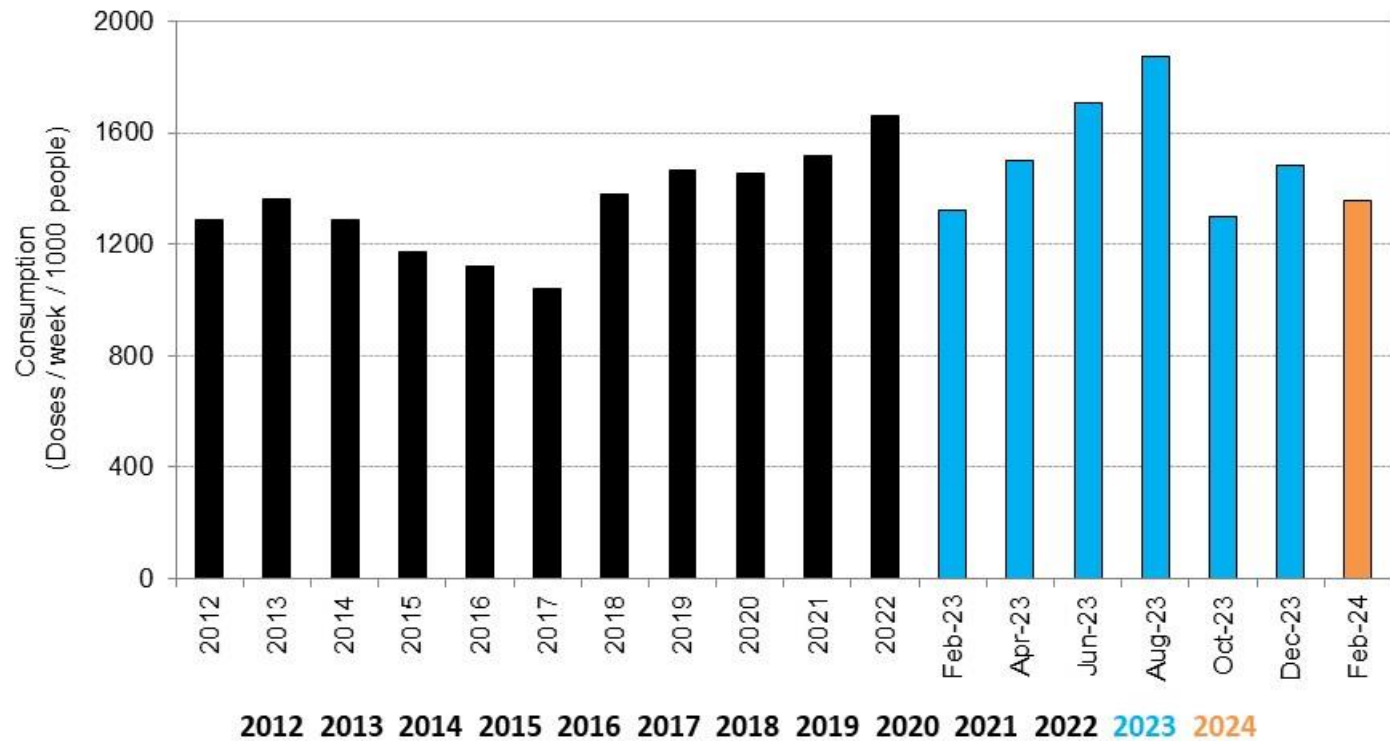
Average consumption (dose/week/1000 people) 2012-2021. Weekly consumption (dose/week/1000 people) of cocaine (100mg dose), MDMA (100mg dose) and methamphetamine (30 mg dose) bi-monthly from February 2022 onwards.

Stimulants - summary

- > Methamphetamine:
 - > Highest consumption levels of the illicit stimulants tested.
 - > Average consumption levels in 2020 and 2021 were the lowest since 2014.
 - > Evidence of a return to 2019 consumption levels in 2022 and 2023.
- > Cocaine:
 - > Average consumption levels increased from 2015-2019 but are low compared with methamphetamine.
 - > Consumption levels in 2023 are the highest since reporting began.
- > MDMA:
 - > Average consumption levels peaked in 2020, but from 2021 decreased to the lowest since sampling began. Levels are low.

Cannabis

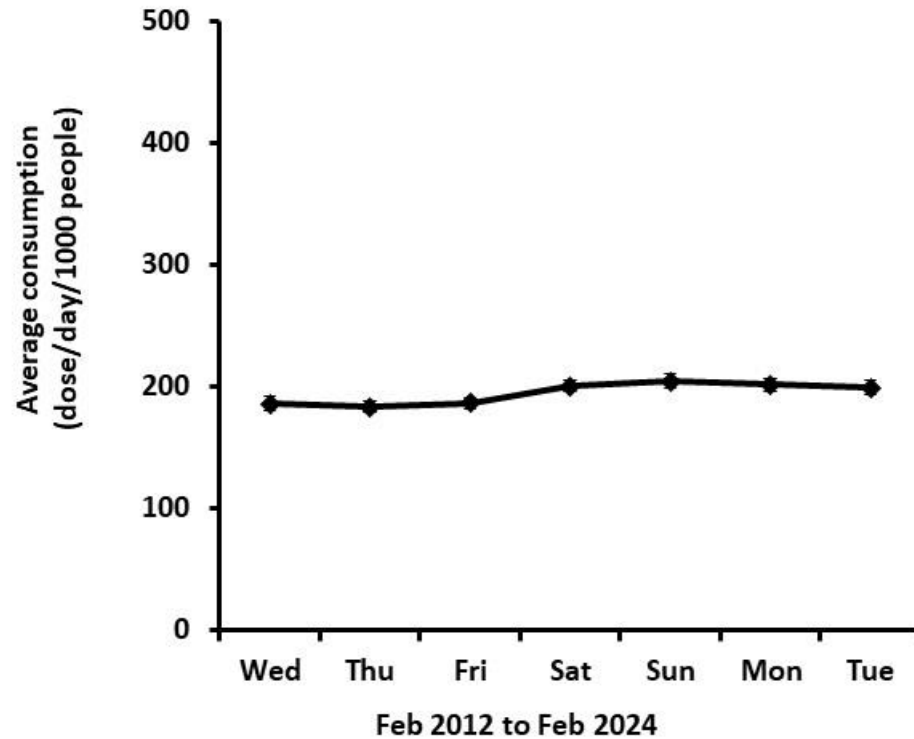
Average levels in 2023 were the lowest since 2020.



Average consumption (dose/week/1000 people) of THC for 2012-2021. Weekly consumption (dose/week/1000 people) bi-monthly from February 2022 onwards. Dose=125mg.

Cannabis

Cannabis consumption levels are constant over the week.

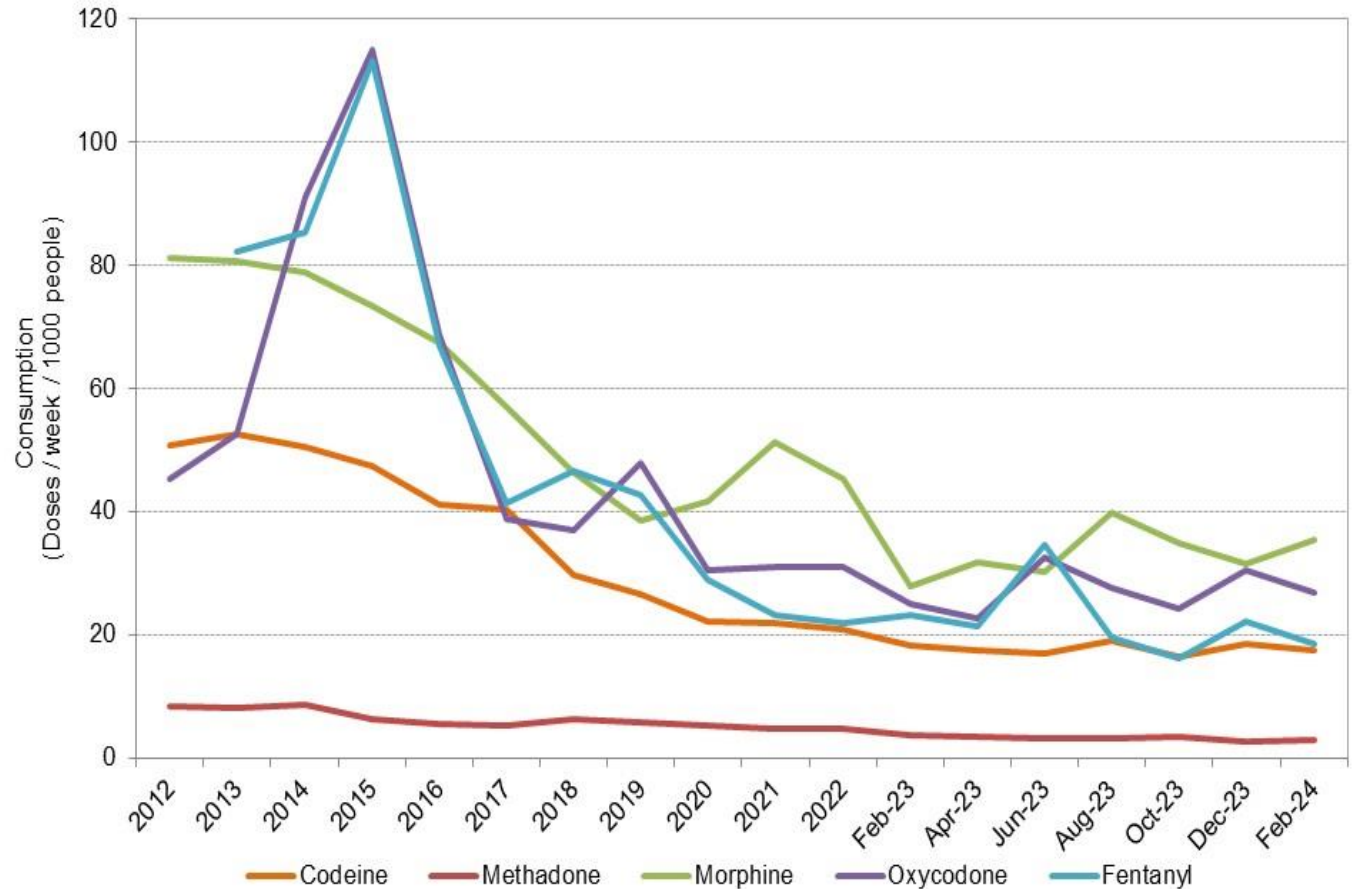


Average daily consumption (dose/day/1000 people) of THC over the week. Dose=125 mg.

Opioids

- > Opioids are a class of drugs that are used for pain relief (e.g. codeine, morphine) or for the treatment of opioid dependence (e.g. methadone).
- > Codeine in the samples can originate from prescription or over the counter medications. In February 2018 codeine was rescheduled and is no longer available over the counter.
- > Morphine, methadone, oxycodone and fentanyl can be used legally on prescription or may be sourced illegally.
- > The analysis of opioids, except for heroin, cannot differentiate illicit from licit use.

Pharmaceutical Opioids



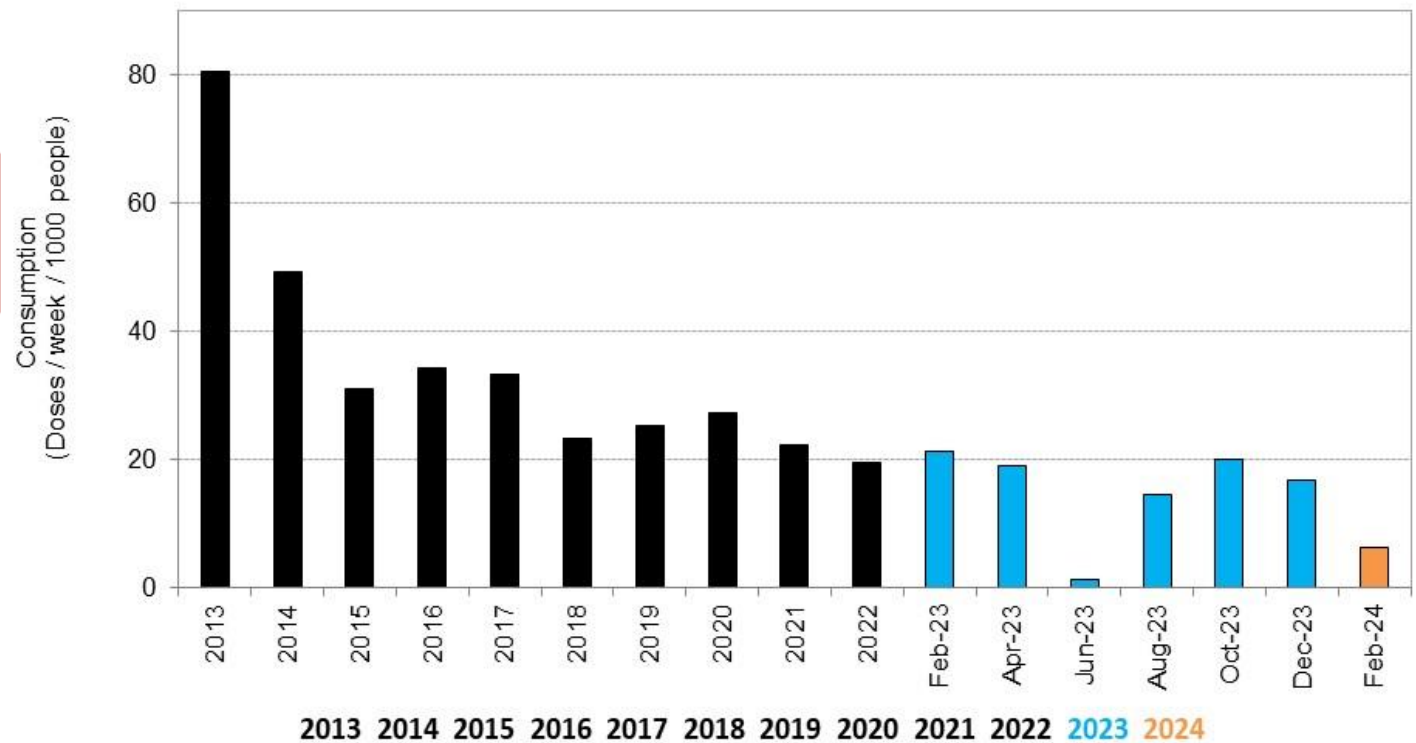
Average consumption (dose/week/1000 people) for 2012-2021. Weekly consumption (dose/week/1000 people) bi-monthly from February 2022 onwards. Codeine (200mg dose), morphine (30mg dose), methadone (100mg dose), oxycodone (10mg dose) and fentanyl (0.2mg dose).

Opioids - summary

- > Oxycodone and fentanyl consumption levels increased from 2012-2015 but have decreased since then. Consumption levels of both decreased in February 2024.
- > Codeine and methadone consumption levels decreased over the sampling period, with a small decrease and a small increase, respectively, in February 2024.
- > Morphine consumption levels increased in February 2024.
- > Average consumption levels of pharmaceutical opioids in 2023 were the lowest since reporting began for all but fentanyl, where levels were slightly higher than in 2022 but still lower than previous years.
- > Consumption levels of pharmaceutical opioids are constant over the week.
- > Heroin consumption levels have decreased since 2013 and remain low.

Heroin

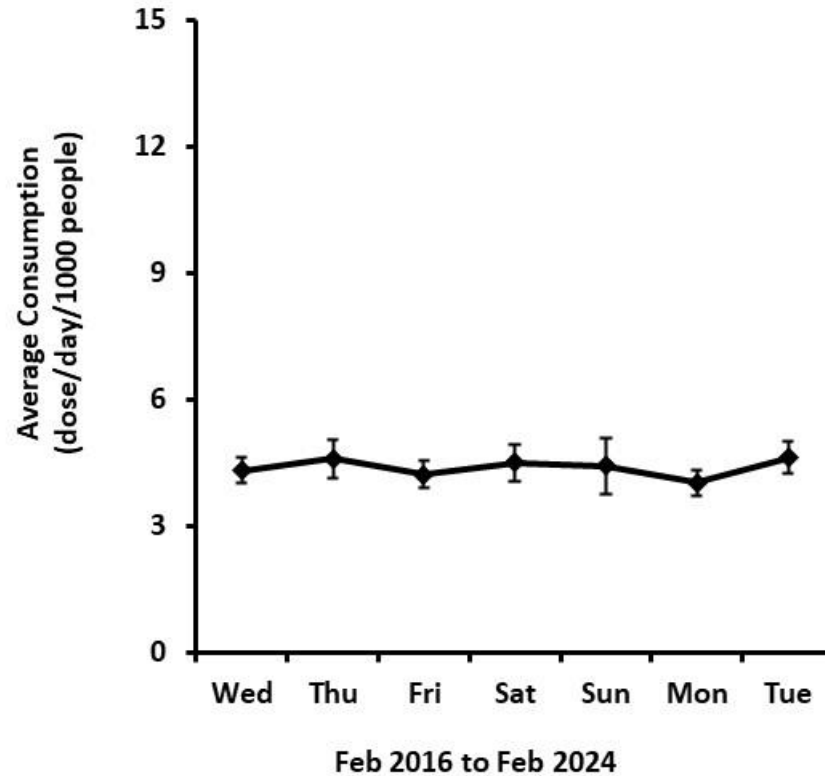
Average consumption levels from 2021 were the lowest since sampling began.



Average consumption (dose/week/1000 people) of heroin for 2013-2021. Weekly consumption (dose/week/1000 people) bi-monthly from February 2022 onwards. Dose for calculation=20mg.

Heroin

Heroin consumption levels are constant over the week.



Average daily consumption (dose/day/1000 people) of heroin over the week. Dose = 20mg.
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