

Trends in the use of Opioid Agonist Treatment in the Northern Territory, 2013-2022





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Table of Contents

1. Executive Summary	6
2. Background & Methods.....	9
2.1. Background.....	9
2.2. Aims	10
2.3. Methods	10
3. Guide to interpretation of results	14
4. Findings.....	16
4.1. OAT utilisation by state/territory	16
4.2. OAT utilisation in NT.....	18
5. Discussion	27
6. Appendices	29
6.1. Mapping to postcodes	29
6.2. Appendix Tables	29
7. References	51



List of Tables

Table 1. Medicines available in the Australian opioid agonist treatment programme.....	11
Table 2. Average doses for OAT medicines; data pooled from recent Australian cohort studies.	12

List of Figures

Figure 1. Number of OAT clients (A), and OAT clients per 10,000 population (B), per month by Australian state/territory (2013-2022).	17
Figure 2. Cumulative number of OAT clients (A) and proportion of total OAT clients (B), per month by medicine (NT, 2013-2022).....	19
Figure 3. Number of OAT clients by LAI buprenorphine (LAIB) group* (NT, 2019-2022).	20
Figure 4. Number of OAT clients per month by remoteness (NT, 2013-2022).	22
Figure 5. Number of OAT clients per month by IRSAD quintile (NT, 2013-2022).....	23
Figure 6. Number of OAT clients per month, by setting (NT, 2013-2022).....	25
Figure 7. Number of OAT clients per month by medicine in: community pharmacy (A), and hospital (B) (NT, 2013-2022).....	26

1. Executive Summary

Opioid agonist treatment (OAT) is one of the main treatments for people with opioid dependence¹. Involving long-term pharmacotherapy with an opioid agonist or partial agonist, it is well established that OAT reduces non-medical use of opioids, injecting and injecting-related injuries, criminal activity, and overall mortality, particularly overdose mortality²⁻⁵. The World Health Organization lists both methadone and buprenorphine^{6,7} as essential medicines for opioid dependence⁸. In Australia, there are currently four OAT formulations subsidised through the Pharmaceutical Benefit Scheme (PBS), including methadone liquid (PBS listed in 1974), sublingual (SL) buprenorphine (2001), SL buprenorphine-naloxone (2005) and long-acting injectable (LAI) buprenorphine (2019)⁹.

LAI formulations of buprenorphine represent a relatively new addition to OAT in Australia¹⁰, having been listed on the PBS since September 2019. LAI buprenorphine is administered via weekly¹¹ or monthly^{12,13} subcutaneous injections, providing an alternate OAT option that reduces the frequency of dosing visits compared to oral and sublingual OAT alternatives. It's unclear what impact the introduction of LAI buprenorphine and policy changes in response to the COVID-19 pandemic had on patterns of OAT medicine use.

This technical report describes 10-year trends in the sales of OAT medicines in the Northern Territory (NT). Aggregate monthly sales were used to estimate the number of OAT clients per month, based on average doses.

Key Findings

- The NT had the lowest rate of OAT utilisation of all jurisdictions from 2013 to 2022.
- The estimated number of OAT clients in the NT fluctuated around 150 clients per month, from 2013 to mid-2020 before increasing to an estimated 224 clients in December 2022—coinciding with the uptake of LAI buprenorphine in the NT.
- Per capita, the NT saw a 29% increase in rates of OAT use, from 7 clients per 10,000 population in January 2013 to 9 per 10,000 in December 2022.
- Patterns of OAT medicines in the NT also changed over this time. The number of clients receiving:
 - methadone remained steady (-2.6%: 2013-2022).

- SL buprenorphine increased from January 2013 (110 clients) to December 2019 (130 clients) followed by a decline to 82 clients in December 2022.
- LAI buprenorphine increased from 14 clients in July 2020 to 91 clients in December 2022.
- Consequently, the distribution of OAT medicines has shifted in the NT:
 - In January 2013, over two-thirds (68.3%) of OAT clients in the NT received SL buprenorphine with the remainder receiving methadone (31.7%).
 - In December 2022, 77.8% of OAT clients in the NT received buprenorphine (40.8% LAI buprenorphine and 37.0% SL buprenorphine) and 22.2% of clients received methadone.
- Across the decade in the NT, trends in the distribution of OAT clients by remoteness and socioeconomic status remained relatively consistent:
 - Approximately 60-70% of OAT in the NT was accessed from outer regional areas, 11-19% from remote areas and 13-19% very remote areas.
 - The majority (43-66%) of clients in the NT received OAT in the most advantaged areas and approximately a fifth in the most disadvantaged areas.
- The majority (61-92%) of OAT in NT is accessed through community pharmacies, however access from hospitals (including inpatient and outpatient drug & alcohol services) increased markedly since 2020. At the beginning of the study period less than a quarter (<25%) of clients accessed OAT from hospitals but from 2020 to 2022 this figure rose to more than a third (35%).
- The majority of clients in community pharmacy received SL buprenorphine whereas, since late 2020, the majority of clients attending hospital services received LAI buprenorphine.

Conclusions

There has been an increase in access to OAT in the NT over the past decade, particularly since late 2020 – coinciding with the uptake of LAI buprenorphine in the NT. Importantly, there has been an increase in access to OAT in settings outside community pharmacy, also since late 2020. Despite



some improved access, the per capita OAT use remains lowest in the NT compared with all other Australian jurisdictions.

2. Background & Methods

2.1. Background

Opioid agonist treatment (OAT) is a first-line treatment for opioid dependence¹. Involving long-term pharmacotherapy with an opioid agonist or partial agonist, it is well established that OAT reduces non-medical use of opioids and related harms³. For example, there is strong evidence to show that OAT is effective at reducing injecting and injection related injuries, blood-borne viral spread, overdoses and overall mortality²⁻⁵, as well as improving physical health, social functioning and economic productivity¹. Methadone and buprenorphine are both listed by the World Health Organization as essential medicines for this indication⁸. In Australia, four formulations of OAT are approved by the Therapeutics Goods Administration (TGA) and subsidised through the Pharmaceutical Benefit Scheme (PBS) for the treatment of opioid dependence. These include methadone liquid (PBS listed in 1974), sublingual (SL) buprenorphine (2001), SL buprenorphine-naloxone (2005: tablets, 2011: films) and long acting injection (LAI) buprenorphine (September 2019)⁹.

LAI formulations of buprenorphine have recently become available for the treatment of opioid dependence¹⁰, having been listed on the PBS since September 2019. Depending on the formulation, LAI buprenorphine is administered via weekly¹¹ or monthly^{12,13} subcutaneous injections, providing an alternate OAT option to daily methadone and SL buprenorphine, that reduces the frequency of dosing visits and increases flexibility^{14,15}. LAI buprenorphine may offer a number of benefits including increased quality of life, employment, and treatment satisfaction¹⁶, however, the shift to monthly dosing may result in unintended consequences as well¹⁷⁻¹⁹. In Australia, the roll-out of LAI buprenorphine was stepped up during the COVID-19 pandemic in an effort to reduce face-to-face interactions and the frequency of visits by OAT clients to health services. National interim guidance developed by professional and consumer groups also recommended increasing the number of take-away doses, greater use of telehealth appointments, and home delivery, including third party collections for clients in quarantine²⁰. These recommendations addressed logistical barriers to OAT engagement, including the travel burden

associated with attending services²¹. Although their implementation was not mandated, and varied across jurisdictions, understanding the extent to which these changes in guidance impacted access to OAT will help determine the adaptability of the program to support clients.

Each year, a summary of medicines used on snapshot day/s in OAT programs around Australia are published.²² Intermittent data capture, such as this, limits a nuanced understanding of changes to the profile of individual medicines over time and changes to overall utilisation in different settings (e.g., community vs. prison, regional v. remote). Monthly sales data provide a novel means to examine longitudinal trends of OAT.

This report aims to describe sales of OAT medicines in the Northern Territory (NT) over time and to consider factors that may have affected patterns of access.

2.2. Aims

This report aims to:

1. Examine trends in the estimated number of clients on all OAT medicines in NT between 2013 and 2022, and
2. Examine variation in the estimated number of OAT clients by jurisdiction, remoteness, socio-economic status and setting.

2.3. Methods

2.3.1. Study design and time period

This is a descriptive study of trends in the sales of OAT medicines (methadone, SL buprenorphine, SL buprenorphine-naloxone and LAI buprenorphine) in NT from January 2013 to December 2022.

2.3.2. Data source

Data was provided by IQVIA (iqvia.com) on sales of medicines by pharmaceutical wholesalers and manufacturers to community pharmacies, hospitals and other providers, including prisons. IQVIA claims around 97% coverage of the Australian community pharmacy and hospital settings²³. Data on all formulations of OAT medicines sold in the NT between January 2013 and December 2022 were included. Due to the legal requirements for secure storage and monitoring of OAT medicines in pharmacies, the number of packs sold over a 12-month period should closely approximate the number of medicines used by clients in the NT OAT Program.

2.3.3. Medicines

Available OAT medicines, by formulation and strength, are summarised in Table 1. Formulations of methadone and buprenorphine used only for opioid dependence were included. In the rare event that methadone is used for analgesia, methadone tablets (which can be crushed) are generally preferred over liquid, in both the community and hospital setting. Methadone liquid 200mL, indicated for both analgesia and opioid dependence in Australia, was included because most use was assumed to be for opioid dependence. Sales of LAI buprenorphine were disaggregated into five groups relative to strength and injection frequency - weekly low and high strengths, and monthly low, medium and high strengths (see 'LAIB Group' in Table 1). These groups were selected to provide high level trends without identifying individual brands.

Table 1. Medicines available in the Australian opioid agonist treatment programme.

Active Ingredient	Form	Brand name	Strength (mg)	LAIB [†] Group	Entry to market [‡]
Methadone	Oral (liquid)	Biodone Forte, Methadone Syrup	5mg / mL	N/A	1974 ²⁴
Buprenorphine	Sublingual tablet	Subutex	0.4, 2, 8	N/A	2001 ²⁵
Buprenorphine / naloxone	Sublingual tablet / film	Suboxone	2/0.5, 8/2	N/A	2005: Tablets ²⁶ 2011: Films ²⁷
Buprenorphine	Long acting injection	Buvidal weekly	8, 16	Weekly LAIB - low	September 2019 ²⁴
Buprenorphine	Long acting injection	Buvidal weekly	24, 32	Weekly LAIB - high	September 2019 ²⁴
Buprenorphine	Long acting injection	Buvidal monthly	64	Monthly LAIB - low	September 2019 ²⁴
Buprenorphine	Long acting injection	Buvidal monthly	96, 128	Monthly LAIB - med	September 2019 ²⁴
Buprenorphine	Long-acting injection	Buvidal monthly	160	Monthly LAIB - high	May 2022 ²⁴
Buprenorphine	Long-acting injection	Sublocade	100	Monthly LAIB - low	May 2020 ²⁴
Buprenorphine	Long-acting injection	Sublocade	300	Monthly LAIB - high	May 2020 ²⁴

[†]LAIB: Long-acting injection buprenorphine, [‡]Entry to market based on PBS listing as part of the Australian Opioid Dependence Treatment Program

2.3.4. OAT clients per month

Describing OAT utilisation based solely on packs sold does not enable a like-for-like comparison between different medicines. In some cases, one pack may be used to treat one or multiple clients - for example, one pack of LAI buprenorphine treats one client over 28 days, whereas one pack of methadone syrup (1 L) may treat several clients. Oral morphine equivalents (OME) were

considered less relevant for comparing OAT in a non-analgesia setting and could not be reliably estimated for LAI buprenorphine. For these reasons, the monthly number of packs sold was converted into an estimate of OAT clients per month.

For SL buprenorphine and methadone formulations, OAT clients per month were estimated by summing the total milligrams (mg) contained in the packs sold that month and dividing by the average dose (mg) to treat a single person for 28 days e.g.,

$$\text{OAT clients per month} = \frac{[\text{mg per pack} \times \text{Total number of packs sold that month}]}{[\text{Average daily dose (mg) for a single person} \times 28 \text{ days}]}$$

Average doses were estimated from previous research (see Table 2). For LAI buprenorphine formulations, estimates of clients per month were based on the number of packs (injections) sold. Specifically, one pack of weekly and one pack of monthly LAI buprenorphine were assumed to treat 0.25 and 1 client, respectively, over a 28-day period, aligning with the recommended dosing schedules¹¹⁻¹³. A retrospective chart review of three Australian OAT providers verified these dose estimates aligned with real-world LAI buprenorphine dosing schedules²⁸. To account for small fluctuations in sales data, reflecting the ordering behaviour (such as stockpiling) of pharmacies rather than actual fluctuations in OAT client numbers, three-month moving averages are presented.

Table 2. Average doses for OAT medicines; data pooled from recent Australian cohort studies.

Measure	Methadone liquid		Sublingual Buprenorphine	
	Pooled estimate (95% CI)	Sources	Pooled estimate (95% CI)	Sources
Mean dose (mg/day)	74.06 (69.44, 78.69)	29,30	16.00 (14.39, 17.61)	30
Median dose (mg/day)	75 (47,75)	30-34	13 (13, 16)	30-35

Where applicable $I^2 = 0.0$.

2.3.5. Geographical information and setting

Monthly OAT utilisation was summarised overall and disaggregated by jurisdiction, remoteness, socioeconomic status, and setting. The Australian jurisdictions includes six states (NSW, Queensland (QLD), South Australia (SA), Tasmania (TAS), Victoria (VIC), Western Australia (WA)), and two territories (Australian Capital Territory (ACT) and the Northern Territories (NT)). Setting refers to the provider type which purchased the medicines, and includes 'community pharmacy', 'hospital' including outpatient drug and alcohol services, 'aged and community healthcare', 'clinics and medical centres', and 'other (including prisons)'. The Australian Bureau of Statistics (ABS) mapping of Postcode 2017 was used to map sales to the Australian Statistical Geography Standard (ASGS) Remoteness Areas 2016 data³⁶ and to the Socio-Economic Indexes for Areas (SEIFA) Index of Relative Socioeconomic Advantage and Disadvantage (IRSAD) 2016 data³⁷ (see Appendix 6.1 Mapping to postcode). Australian remoteness categories include 'Major Cities', 'Inner Regional', 'Outer Regional', 'Remote' and 'Very Remote'. IRSAD summarises information about the economic and social conditions of people and households within an area, with lower quintiles indicating relatively greater disadvantage and higher quintiles indicating relatively greater advantage.

2.3.6. Statistical Analysis

Descriptive statistics and data visualisations were used to describe trends over time, and by OAT medicine, jurisdiction, remoteness, socioeconomic status and setting. The estimated number of clients receiving OAT medicines each month, overall and by individual medicines, were evaluated as a count standardised against population size and/or as a proportion (%) of the total number of OAT clients that month. Per capita estimates were based on the estimated residential population at June 30 each year, provided by the ABS³⁸, overall and by jurisdiction.

Analyses were conducted using SAS Enterprise Guide 9.4 (SAS Institute Inc., Cary, NC, USA) and Microsoft Excel for Microsoft 365 (Microsoft, Seattle, WA, USA).

Ethics approval

Ethics approval was not required as data from IQVIA were received in deidentified aggregated form.

3. Guide to interpretation of results

- It is important to acknowledge that the amounts sold do not directly translate to the amounts dispensed or used. For this reason, it was not possible to estimate patterns of use at the client level nor determine the exact number of clients engaged in OAT in each month.
- The approach used in estimating the number of clients receiving OAT per month assumes that real-world OAT doses – and the factors known to influence dose, including disorder severity - have remained stable over time and across different settings. The parameters used to derive these estimates were informed by the literature and have not been validated against population-level data on OAT doses from Australia.
- The estimates assume clients are retained in OAT over the full 28-day interval; where this is not the case, the number of clients accessing OAT at least once a month would be higher.
- This report complements the National Opioid Pharmacotherapy Statistics Annual Data (NOPSAD), which provide a national overview of OAT pharmacotherapies used in Australia on snapshot day/s by state and territory health departments²². Where comparisons with NOPSAD show varying trends, these may be explained by differences in client ascertainment and changes in the patterns of OAT retention³⁹ during the study period.
- Furthermore, IQVIA coverage may have improved over time, which could lead to an underestimate of OAT clients in earlier years of the study.
- Capture of OAT sales to settings other than community pharmacy and hospital (e.g., prisons, clinics and medical centres) may be incomplete, leading to an underestimate of the number of clients accessing OAT in these settings.
- As the weekly low dose LAI buprenorphine formulation can be used for top-up or supplemental dosing, inclusion of these formulations may have resulted in a slight overestimate of the number of clients.

- The geographic information provided by IQVIA for non-community pharmacy/hospital settings was less granular (PHN level) so there may be some misclassification of remoteness and socioeconomic categories in these settings.
- The socioeconomic and remoteness findings reflect where OAT was received rather than where OAT clients reside, as clients may have travelled to different areas to receive OAT.

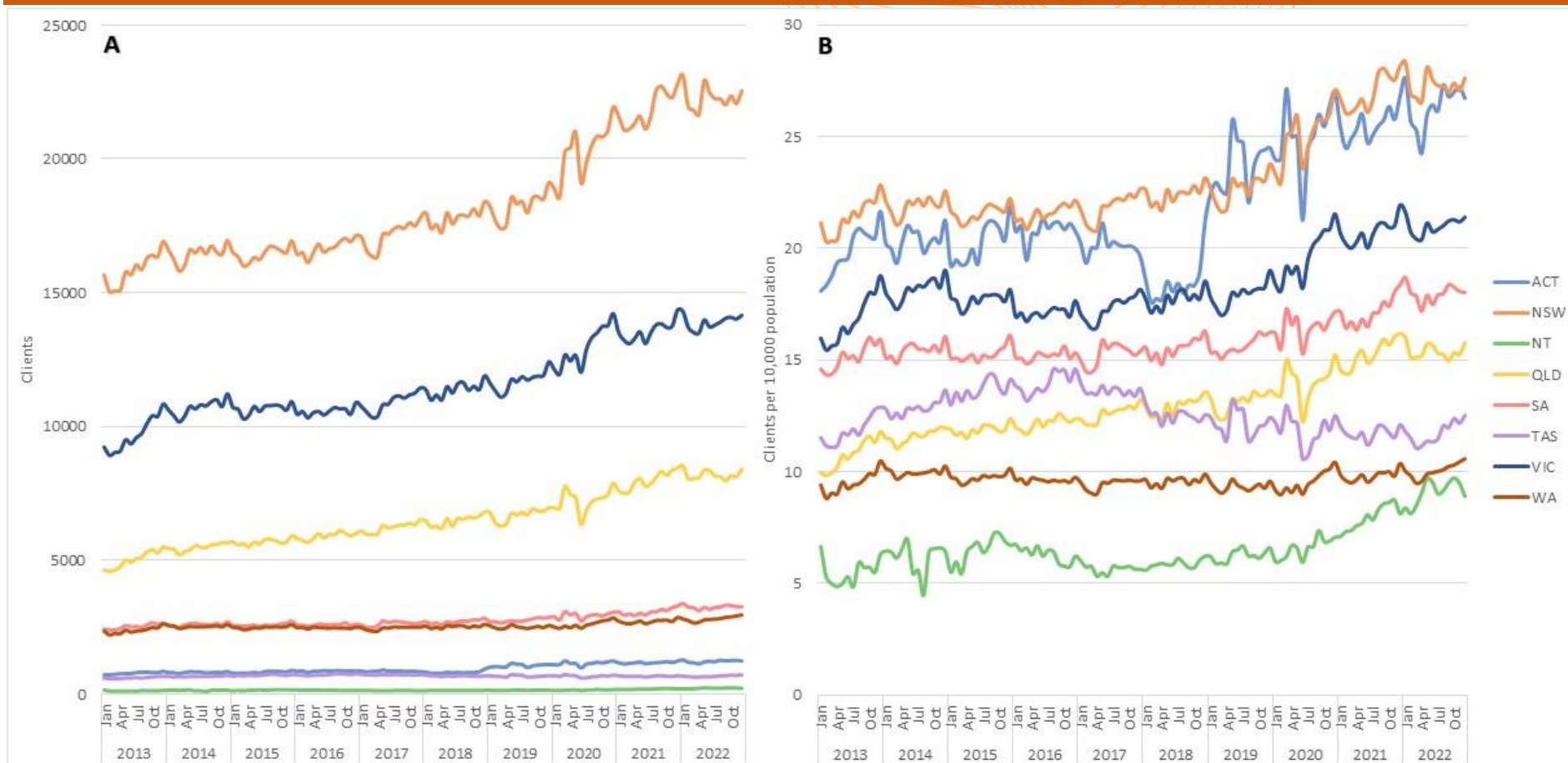
4. Findings

4.1. OAT utilisation by state/territory

Across the decade, the NT had the lowest estimated number of OAT clients per month of all jurisdictions (Figure 1A). The estimated number of clients receiving OAT each month in the NT increased from 161 clients in January 2013 to 224 clients in December 2022 (39% increase; Figure 1A, Table A1).

After accounting for population size, there was a 29% increase in rates of use in the NT, from 7 OAT clients per 10,000 population in January 2013 to 9 per 10,000 in December 2022 (Figure 1B). Despite this increase in access to OAT in the NT over the decade, per capita use of OAT in the NT remained lower than all other jurisdictions. In December 2022, the number of OAT clients per capita per month in the NT was less than a third of the number in NSW (28 per 10,000 population vs 9 per 10,000; Figure 1B).

Figure 1. Number of OAT clients (A), and OAT clients per 10,000 population (B), per month by Australian state/territory (2013-2022).



ACT: Australian Capital Territory, NT: New South Wales, NT: Northern Territories, QLD: Queensland, SA: South Australia, TAS: Tasmania, VIC: Victoria, WA: Western Australia

4.2. OAT utilisation in NT

4.2.1. All OAT medicines

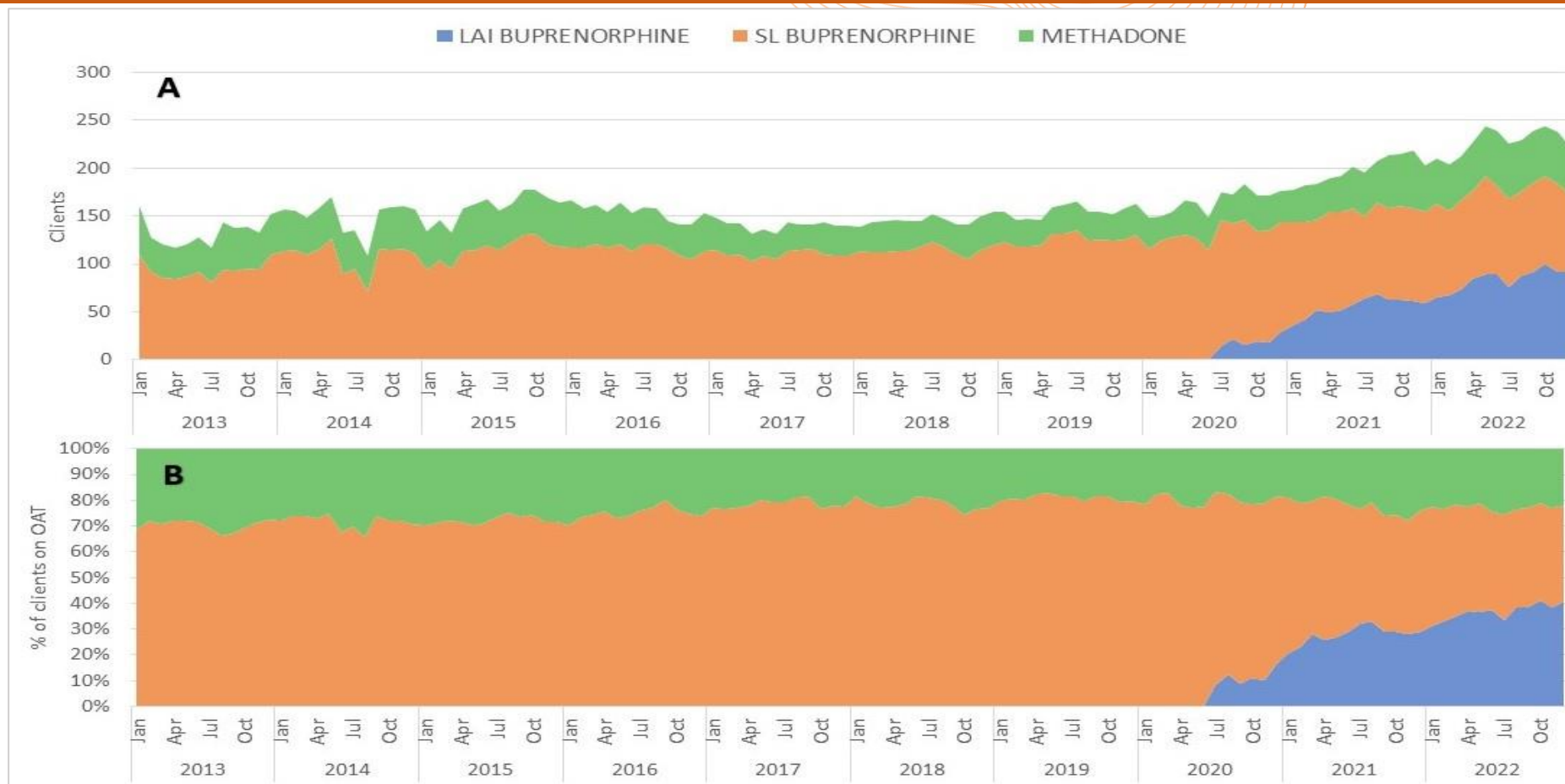
From 2013 to 2019, the estimated number of OAT clients in the NT fluctuated around 150 clients per month before increasing towards the end of 2020 – coinciding with the uptake of LAI buprenorphine in the NT. Patterns of medicines used in OAT have changed over time in the NT. Methadone use remained steady (-2.6%) from 51 clients in January 2013 to 50 in December 2022 (Figure 2A, Table A1). There was an 18% increase in the estimated number of clients receiving SL buprenorphine, from January 2013 (110 clients) to December 2019 (130 clients), followed by a 37% decrease by December 2022 (82 clients). Following its introduction to the market in September 2019, uptake of LAI buprenorphine in the NT commenced in July 2020, increasing from 14 clients in July 2020 to 91 clients in December 2022.

Subsequently, the distribution of medicines in the NT OAT program evolved over time (Figure 2B). In January 2013, over two-thirds (68.3%) of the estimated number of OAT clients in NT received SL buprenorphine with the remainder receiving methadone (31.7%). In December 2022, 40.8% of clients received LAI buprenorphine, 37.0% SL buprenorphine, and 22.2% methadone (Figure 2B, Table A1).

4.2.2. LAI buprenorphine

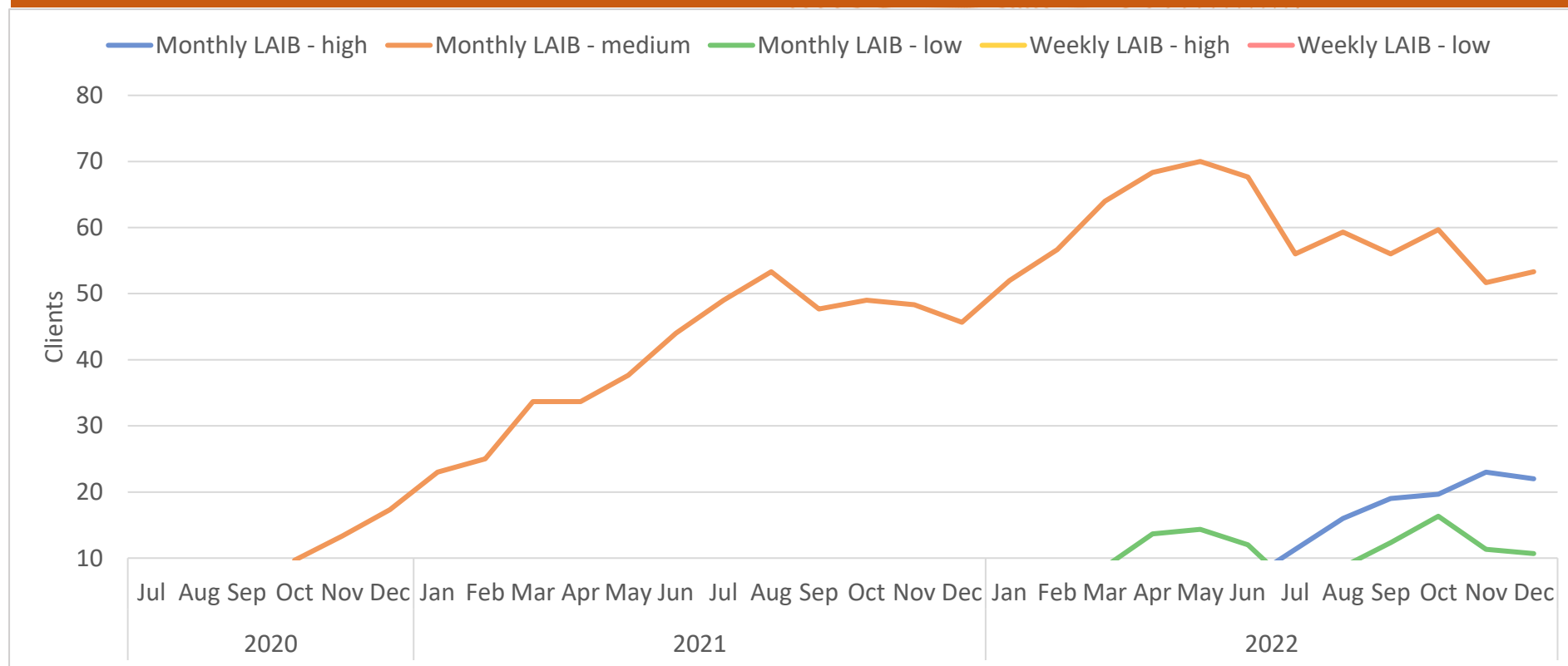
Since the introduction of LAI buprenorphine, the majority of use was for monthly rather than weekly formulations (Figure 3, Table A2). The formulations in the 'Monthly LAIB – medium' group were used most commonly. From July 2020 to December 2022, use of 'Monthly LAIB – medium' formulations increased from 6 to 53 clients (Figure 3, Table A2).

Figure 2. Cumulative number of OAT clients (A) and proportion of total OAT clients (B), per month by medicine (NT, 2013-2022).



LAI: Long Acting Injection, OAT: Opioid Agonist Treatment, SL: Sublingual

Figure 3. Number of OAT clients by LAI buprenorphine (LAIB) group* (NT, 2019-2022).



* LAIB groups are defined in Table 1

4.2.1. Remoteness

Over the study period in the NT, trends in the distribution of OAT clients by remoteness remained relatively consistent. Approximately 60-70% of OAT was accessed in outer regional areas, 11-19% in remote and 13-19% in very remote areas (Table A3). The estimated number of OAT clients increased across all remoteness categories over the decade, particularly from late 2020 (Figure 4). From 2013 to 2022, greater increases in OAT utilisation were observed in outer regional areas (118 to 167 clients: +42%), compared with remote (21 to 28 clients: +37%) and very remote areas (22 to 28 clients: +25%) (Figure 4, Table A3).

4.2.2. Socioeconomic status (IRSAD)

Across the decade in NT, trends in the distribution of OAT utilisation by socioeconomic status remained relatively consistent (Figure 5). The majority (43-66%) of the estimated number of OAT clients received OAT in the most advantaged areas and roughly a fifth were in the most disadvantaged areas (Table A4). From 2013 to 2022, rates of OAT use increased across all IRSAD quintiles, especially since 2020 (Figure 5, Table A4).

Figure 4. Number of OAT clients per month by remoteness (NT, 2013-2022).

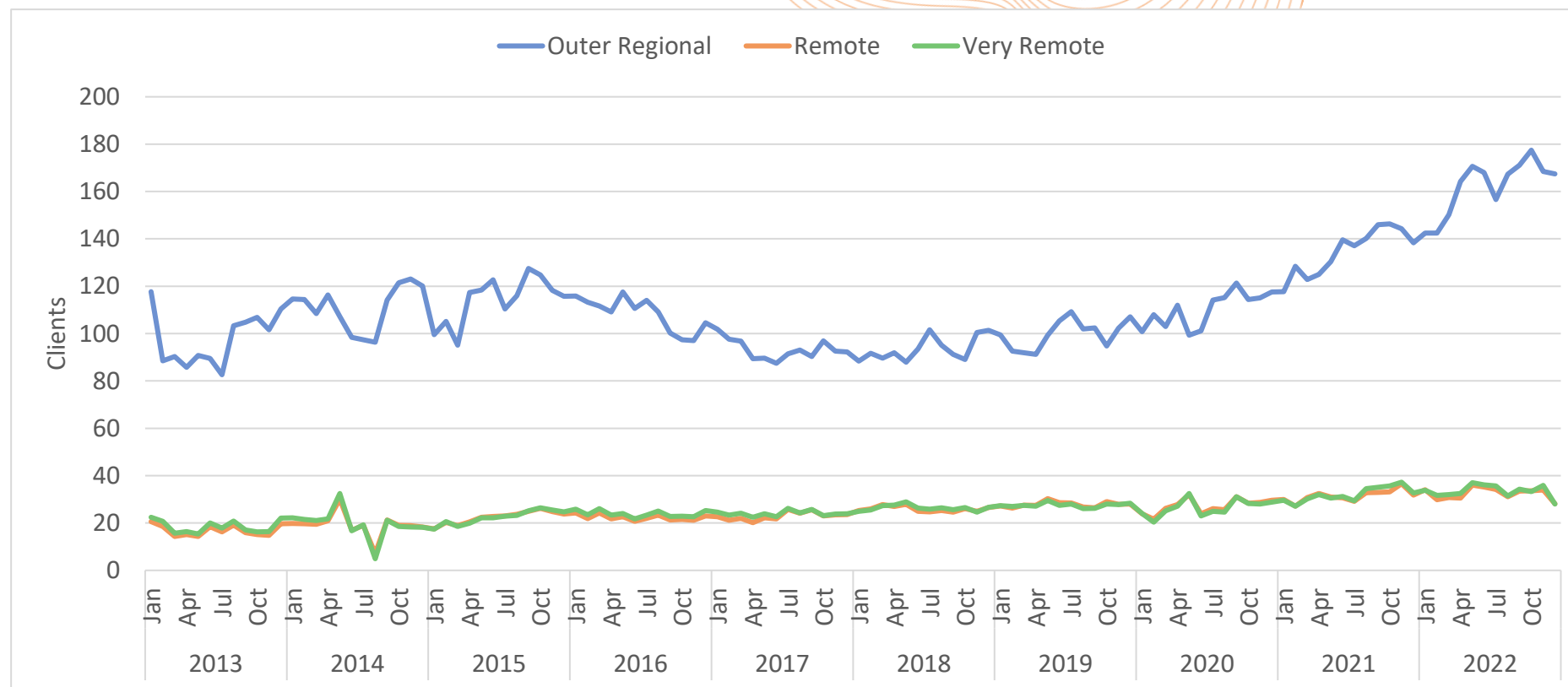
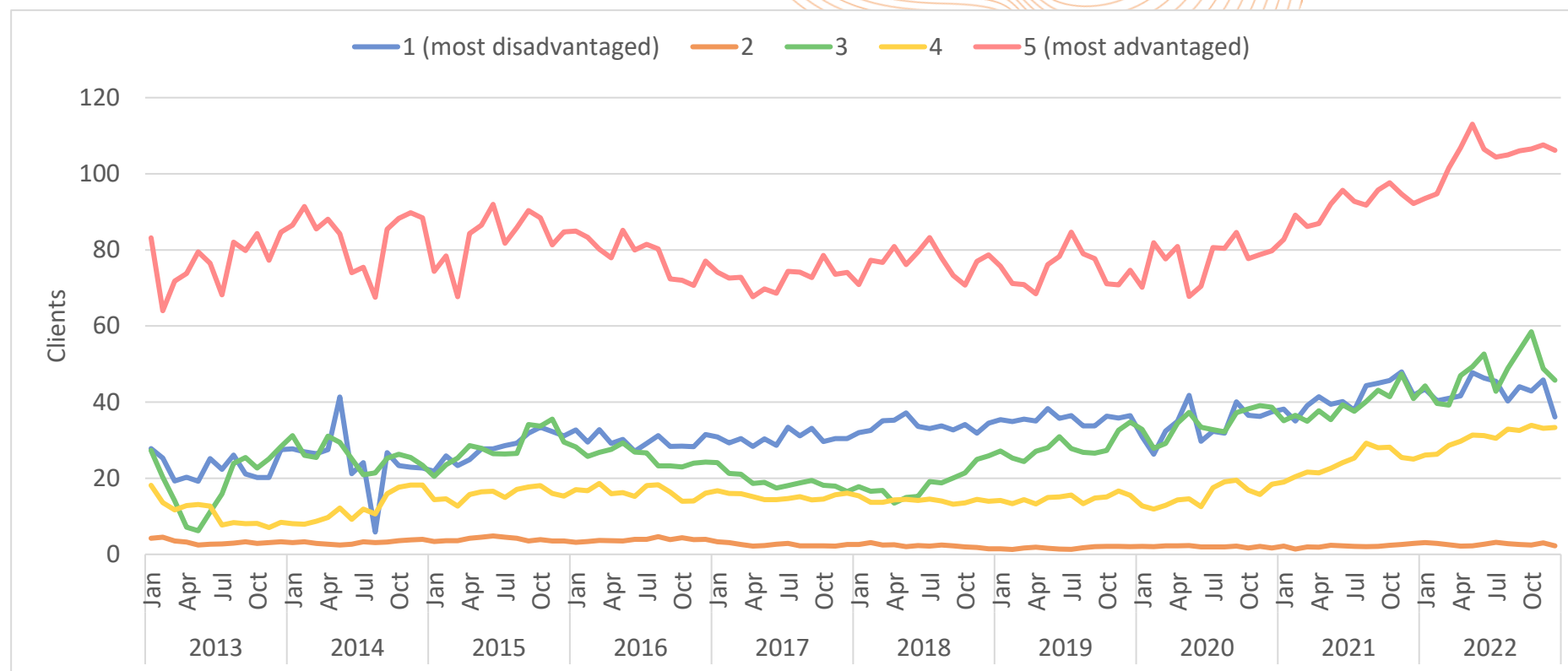


Figure 5. Number of OAT clients per month by IRSAD quintile (NT, 2013-2022).



IRSAD: Index of Relative Socioeconomic Advantage and Disadvantage

4.2.3. Setting

In the NT, trends in the distribution of OAT utilisation by setting remained relatively consistent between 2013 and 2019, with some significant changes observed from late 2020 to 2022. The majority (61-92%) of clients accessed OAT from community pharmacy with the remainder from hospitals (incl. inpatient and outpatient drug and alcohol services). The estimated number of clients accessing OAT each month in community pharmacies increased by 20% from 121 clients in January 2013 to 145 in December 2022 (Figure 6). In contrast, the estimated number of clients accessing OAT in hospital settings remained relatively stable from 2013 to 2019/2020, before increasing markedly (Figure 6, Table A5). At the beginning of the study period, less than a quarter (<25%) of estimated clients accessed OAT from hospitals; between 2019 and 2022, this proportion increased to more than a third (35%) (Table A5).

The distribution of medicines in the NT OAT program varied by setting (Figure 7, Table A6). The majority of clients accessing OAT in community pharmacies each month received SL buprenorphine whereas, since late 2020, the majority of clients accessing OAT in hospitals each month received LAI buprenorphine. In the NT in December 2022 (Figure 7, Table A6):

- 145 clients accessed OAT from community pharmacy, of whom 48 (32.8%) received methadone, 79 (54.8%) SL buprenorphine and 18 (12.4%) LAI buprenorphine; and
- 77 clients accessed OAT from hospitals, including outpatient drug and alcohol services, of whom 72 (93.4%) received LAI buprenorphine.

Figure 6. Number of OAT clients per month, by setting (NT, 2013-2022).

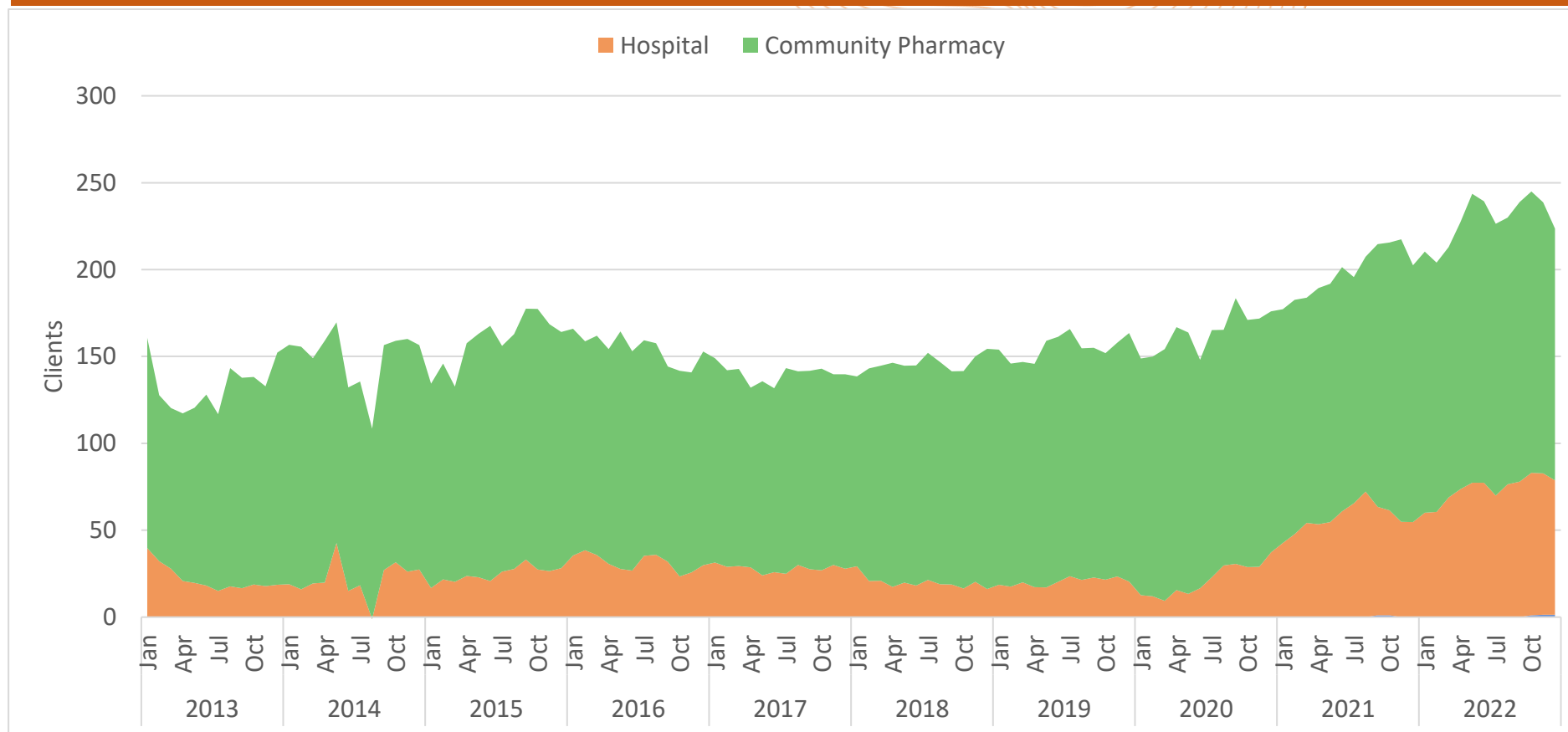
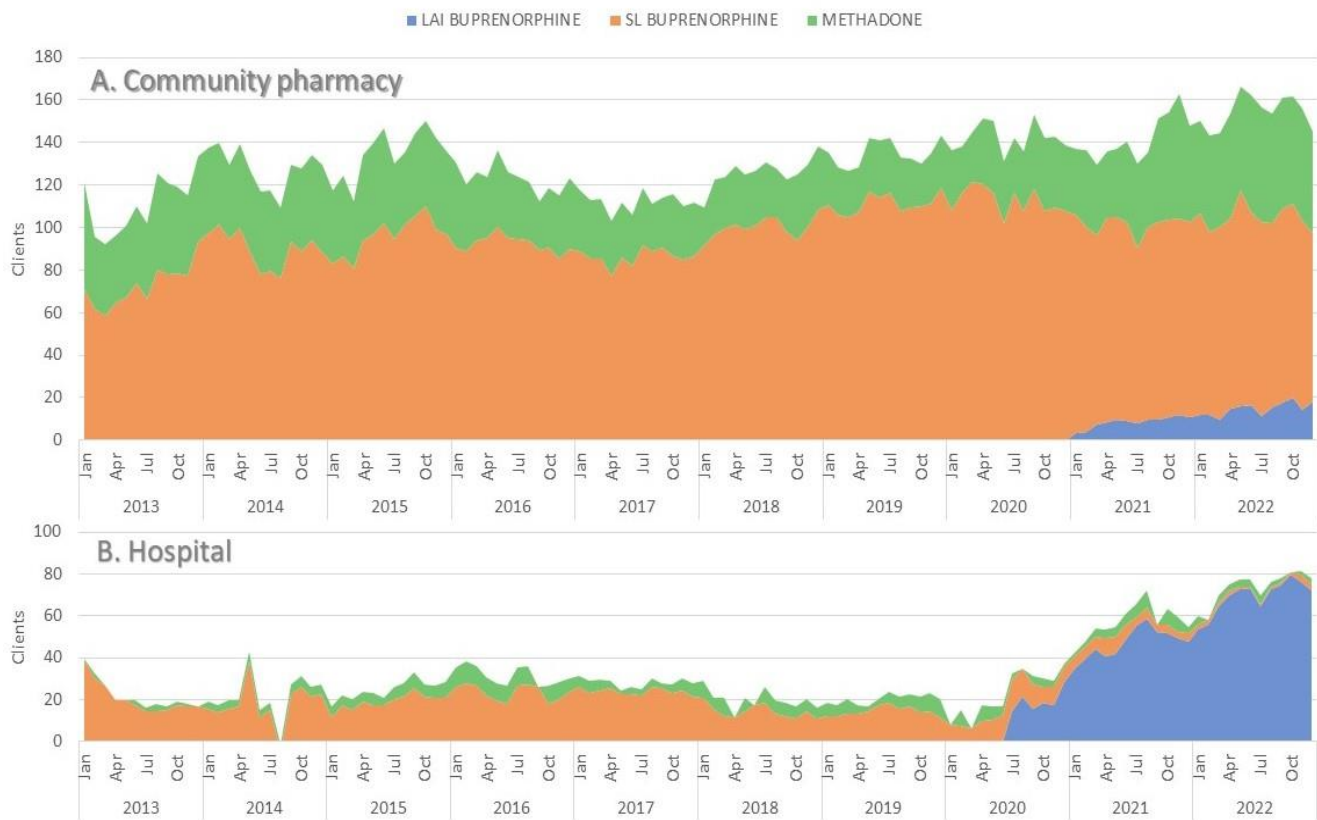


Figure 7. Number of OAT clients per month by medicine in: community pharmacy (A), and hospital (B) (NT, 2013-2022).



5. Discussion

This report used monthly sales data to evaluate trends in the estimated number of clients and the types of OAT medicines used in the NT between 2013 and 2022. Over the study period, overall utilisation of OAT in the NT increased by 29% in the per-capita estimate of OAT clients. The pattern of OAT medicines used in the NT changed over time, with the most common OAT formulation being SL buprenorphine in 2013 and LAI buprenorphine in 2022. Increases in OAT access were observed in hospital settings from late 2020 – coinciding with the introduction of LAI buprenorphine in the NT.

Importantly this report demonstrates a substantial increase in the use of LAI buprenorphine for OAT in the NT. Between July 2020 (the first month LAI buprenorphine was sold in the NT according to IQVIA data) and December 2022, the estimated number of clients accessing LAI buprenorphine increased, eventually accounting for two-fifths of all NT OAT clients. LAI buprenorphine now surpasses SL buprenorphine as the most common buprenorphine formulation for OAT in the NT. By the end of the study period (2022), most clients in community pharmacy received SL buprenorphine whereas almost all (94%) OAT clients attending hospital settings (including outpatient drug and alcohol services) received LAI buprenorphine. This reflects the scale-up of LAI buprenorphine during the COVID-19 pandemic, used as a strategy to reduce exposure to infection, and help adhere with social distancing²⁰.

The trends seen in this report largely align with the annual summaries from the NOPSAD collection, however the client estimates in early years of this report are lower than those reported in NOPSAD²². At the beginning of the study period, the estimated number of OAT clients in the NT in this report was 13% lower than the figure quoted by NOPSAD (June 2013: 128 clients vs 147 clients in NOPSAD) and by the end of the study period the estimates in this report were 31% higher than NOPSAD (June 2022: 239 clients vs 182 clients in NOPSAD). While both data sources show increasing per-capita OAT use between 2013 and 2022, the magnitude of the increase was higher in this report than NOPSAD. From 2013 to 2022, data indicate per capita OAT use in the NT increased by +29% in this report (from 7 to 9 OAT clients per 10,000 population) and by +17%

(from 6 to 7 OAT clients per 10,000 population) according to the NOPSAD collection²². These differences may be explained by differences in the methods used for client ascertainment and changes in the patterns of OAT retention during the study period³⁹. NOPSAD collects data on clients receiving OAT on specific day/s per year, whereas the client estimates in this report are based on a conversion of packs sold into clients treated over a month, with the assumption that clients are retained in OAT over the full 28-day interval. As some attrition from OAT is expected this report may underestimate the total number of clients accessing OAT over the month, however, if OAT retention rates have improved over time³⁹ the potential for this source of underestimation would have diminished over the study time period.

In conclusion, the findings in this report suggest that in the NT, the introduction of LAI buprenorphine, improved access to OAT for people with opioid dependence, especially in settings other than community pharmacy. Despite these increases, the per capita OAT use remains lowest in the NT compared with all other Australian jurisdictions.

6. Appendices

6.1. Mapping to postcodes

Data on sales to community pharmacy and hospitals were provided in 'bricks', which are geographic boundaries developed by IQVIA containing clusters of pharmacies, for medicine sales and distribution purposes across Australia. Data on sales to all other settings were provided at the Primary Health Network (PHN) level. Sales bricks and PHNs were mapped to postcodes.

6.2. Appendix Tables

Table A1. Estimated number and proportion of OAT clients per month (NT, 2013-2022)

Time period	LAI Buprenorphine		SL Buprenorphine		Methadone		Total	
	n	Row %	n	Row %	n	Row %	N	Row %
2013								
January			110	68.3	51	31.7	161	100
February			92	71.9	36	28.1	128	100
March			85	70.7	35	29.3	120	100
April			85	72.1	33	27.9	117	100
May			87	72.1	34	27.9	120	100
June			91	71.5	37	28.5	128	100
July			81	69.2	36	30.8	117	100
August			95	66.0	49	34.0	143	100
September			93	67.3	45	32.7	138	100
October			96	69.2	43	30.8	138	100
November			94	71.1	38	28.9	133	100
December			110	72.3	42	27.7	152	100
2014								
January			113	72.2	44	27.8	157	100
February			115	73.8	41	26.2	156	100
March			110	74.0	39	26.0	149	100
April			116	73.0	43	27.0	159	100
May			127	74.6	43	25.4	170	100
June			89	67.5	43	32.5	132	100
July			95	69.8	41	30.2	136	100
August			71	65.8	37	34.2	108	100

Time period	LAI Buprenorphine		SL Buprenorphine		Methadone		Total	
	n	Row %	n	Row %	n	Row %	N	Row %
September			116	73.8	41	26.2	157	100
October			115	72.1	44	27.9	159	100
November			115	72.0	45	28.0	160	100
December			111	70.9	46	29.1	157	100
2015								
January			95	70.4	40	29.6	134	100
February			104	71.1	42	28.9	146	100
March			95	72.0	37	28.0	133	100
April			113	71.6	45	28.4	158	100
May			115	70.3	48	29.7	163	100
June			119	71.0	49	29.0	168	100
July			115	73.5	41	26.5	156	100
August			123	75.2	40	24.8	163	100
September			131	73.6	47	26.4	178	100
October			131	74.1	46	25.9	177	100
November			120	71.4	48	28.6	169	100
December			118	71.6	47	28.4	164	100
2016								
January			117	70.5	49	29.5	166	100
February			117	73.6	42	26.4	159	100
March			121	74.5	41	25.5	162	100
April			117	75.8	37	24.2	154	100
May			120	73.1	44	26.9	164	100
June			113	74.0	40	26.0	153	100
July			121	76.0	38	24.0	159	100
August			121	76.8	36	23.2	158	100
September			116	80.1	29	19.9	144	100
October			108	76.4	33	23.6	142	100
November			105	74.8	36	25.2	141	100
December			113	74.0	40	26.0	153	100
2017								
January			115	76.9	34	23.1	149	100
February			109	76.7	33	23.3	142	100
March			110	76.8	33	23.2	143	100

Time period	LAI Buprenorphine		SL Buprenorphine		Methadone		Total	
	n	Row %	n	Row %	n	Row %	N	Row %
April			103	77.8	29	22.2	132	100
May			109	80.1	27	19.9	136	100
June			104	79.2	27	20.8	132	100
July			114	79.4	29	20.6	143	100
August			115	81.1	27	18.9	141	100
September			116	81.7	26	18.3	142	100
October			110	76.7	33	23.3	143	100
November			109	78.0	31	22.0	140	100
December			108	77.4	32	22.6	140	100
2018								
January			113	81.5	26	18.5	139	100
February			113	78.7	30	21.3	143	100
March			112	77.2	33	22.8	145	100
April			113	77.4	33	22.6	146	100
May			114	78.4	31	21.6	145	100
June			118	81.7	27	18.3	145	100
July			123	81.0	29	19.0	152	100
August			118	80.4	29	19.6	147	100
September			110	77.8	31	22.2	141	100
October			105	74.1	37	25.9	142	100
November			115	76.6	35	23.4	150	100
December			119	77.2	35	22.8	154	100
2019								
January			123	79.8	31	20.2	154	100
February			118	80.7	28	19.3	146	100
March			118	80.3	29	19.7	147	100
April			120	82.3	26	17.7	146	100
May			131	82.7	28	17.3	159	100
June			132	81.7	30	18.3	161	100
July			135	81.4	31	18.6	166	100
August			124	79.9	31	20.1	155	100
September			126	81.3	29	18.7	155	100
October			124	81.5	28	18.5	152	100
November			125	79.1	33	20.9	158	100

Time period	LAI Buprenorphine		SL Buprenorphine		Methadone		Total	
	n	Row %	n	Row %	n	Row %	N	Row %
December			130	79.5	33	20.5	163	100
2020								
January			116	78.2	32	21.8	149	100
February			124	82.5	26	17.5	150	100
March			128	82.8	27	17.2	154	100
April			130	78.0	37	22.0	167	100
May			126	77.1	37	22.9	164	100
June			114	77.3	34	22.7	148	100
July	15	8.8	131	79.4	29	17.6	165	100
August	22	13.1	121	73.0	30	18.3	165	100
September	16	8.6	130	70.7	38	20.7	184	100
October	19	11.0	115	67.2	37	21.8	171	100
November	17	10.1	118	68.8	36	21.1	172	100
December	29	16.3	115	65.4	32	18.3	176	100
2021								
January	36	20.2	108	61.1	33	18.7	177	100
February	42	23.2	102	55.7	39	21.1	183	100
March	51	27.9	95	51.7	37	20.4	184	100
April	49	25.9	105	55.7	35	18.4	189	100
May	51	26.7	104	54.0	37	19.4	192	100
June	58	28.8	100	49.7	43	21.5	201	100
July	63	32.3	87	44.3	46	23.4	196	100
August	68	32.9	96	46.2	43	20.8	207	100
September	62	29.1	96	44.9	56	26.0	214	100
October	63	29.1	97	45.3	55	25.7	215	100
November	62	28.2	96	44.0	61	27.8	218	100
December	59	28.8	96	47.2	49	24.0	203	100
2022								
January	65	31.0	98	46.4	48	22.6	210	100
February	67	32.9	89	43.6	48	23.5	204	100
March	74	34.7	93	43.5	46	21.8	213	100
April	85	37.2	92	40.4	51	22.3	227	100
May	89	36.5	103	42.2	52	21.4	244	100
June	89	37.4	92	38.3	58	24.4	239	100

Time period	LAI Buprenorphine		SL Buprenorphine		Methadone		Total	
	n	Row %	n	Row %	n	Row %	N	Row %
July	76	33.5	92	40.8	58	25.7	226	100
August	88	38.4	88	38.1	54	23.5	230	100
September	92	38.6	92	38.6	55	22.9	239	100
October	100	40.9	92	37.8	52	21.2	244	100
November	91	38.4	92	38.7	55	22.9	238	100
December	91	40.8	83	37.0	50	22.2	224	100

LAI: Long acting injectable, SL: Sublingual

* Due to the calculation of 3 month moving averages the sum of the number of clients on individual OAT medicines does not tally up to the total number of clients on OAT for the first two months since launch of LAI buprenorphine (i.e., September and October 2019)

Table A2. Estimated number of LAI buprenorphine clients per month (NT, 2019-2022)

Time period	LAI Buprenorphine group*				
	Monthly LAIB - high	Monthly LAIB - medium	Monthly LAIB - low	Weekly LAIB - high	Weekly LAIB - low
	n	n	n	n	n
2020					
July		6	<5	<5	<5
August		9	<5	6	<5
September				5	<5
October		10	<5	6	<5
November		13	<5	5	<5
December		17	<5	6	<5
2021					
January		23	<5	6	<5
February		25	6	8	<5
March		34	6	9	<5
April		34		9	<5
May		38	6	7	<5
June		44	5	7	<5
July		49	5	7	<5
August		53	5	8	<5
September	<5	48	6	6	<5
October	<5	49	6	5	<5
November		48	6	<5	<5

LAI Buprenorphine group*					
Time period	Monthly LAIB - high	Monthly LAIB - medium	Monthly LAIB - low	Weekly LAIB - high	Weekly LAIB - low
	n	n	n	n	n
December		46	6	<5	<5
2022					
January		52	8		
February		57	7	<5	<5
March		64	9	<5	
April		68	14	<5	<5
May	<5	70	14	<5	<5
June	7	68	12	<5	<5
July	11	56	5	<5	<5
August	16	59	9	<5	<5
September	19	56	12	<5	<5
October	20	60	16	<5	<5
November	23	52	11	<5	<5
December	22	53	11	<5	<5

* LAIB groups are defined in Table 1

Table A3. Estimated OAT clients per month by remoteness (NT, 2013-2022)

Time period	Outer Regional		Remote		Very Remote		Grand Total
	n	Row %	n	Row %	n	Row %	n
2013							
January	118	73.2	21	12.8	22	14.0	161
February	88	69.3	19	14.5	21	16.2	128
March	90	75.0	14	11.9	16	13.1	120
April	86	73.2	15	12.9	16	14.0	117
May	91	75.4	14	11.9	15	12.7	120
June	90	69.9	18	14.4	20	15.6	128
July	83	70.7	16	14.0	18	15.3	117
August	103	72.1	19	13.4	21	14.5	143
September	105	76.0	16	11.6	17	12.4	138
October	107	77.3	15	11.0	16	11.7	138
November	102	76.5	15	11.2	16	12.3	133
December	110	72.5	20	13.0	22	14.5	152
2014							
January	115	73.2	20	12.7	22	14.2	157
February	114	73.5	20	12.6	22	13.8	156
March	108	72.8	19	13.1	21	14.1	149
April	116	73.2	21	13.2	22	13.7	159
May	107	63.2	30	17.7	32	19.1	170
June	98	74.5	17	12.8	17	12.7	132
July	97	71.8	19	14.0	19	14.2	136
August	96	88.9	7	6.6	5	4.5	108
September	114	72.9	21	13.6	21	13.5	157
October	121	76.4	19	12.0	19	11.7	159
November	123	76.8	19	11.8	18	11.4	160
December	120	76.7	18	11.7	18	11.6	157
2015							
January	100	74.0	17	13.0	17	13.0	134
February	105	72.0	20	13.9	21	14.1	146
March	95	71.7	19	14.3	19	14.0	133
April	117	74.4	20	13.0	20	12.6	158
May	118	72.6	22	13.8	22	13.6	163
June	123	73.2	23	13.6	22	13.3	168
July	110	70.7	23	14.7	23	14.6	156

Time period	Outer Regional		Remote		Very Remote		Grand Total
	n	Row %	n	Row %	n	Row %	n
August	116	71.2	24	14.5	23	14.3	163
September	127	71.8	25	14.0	25	14.2	178
October	125	70.4	26	14.8	26	14.9	177
November	118	70.1	25	14.7	26	15.1	169
December	116	70.5	24	14.5	25	15.0	164
2016							
January	116	69.8	24	14.6	26	15.6	166
February	113	71.4	22	13.8	23	14.8	159
March	112	68.9	24	15.0	26	16.1	162
April	109	70.8	22	14.1	23	15.1	154
May	118	71.6	23	13.8	24	14.6	164
June	111	72.3	21	13.5	22	14.2	153
July	114	71.6	22	13.8	23	14.6	159
August	109	69.3	23	14.8	25	15.9	158
September	100	69.5	21	14.8	23	15.7	144
October	97	68.7	21	15.1	23	16.1	142
November	97	68.9	21	15.0	23	16.1	141
December	105	68.4	23	15.0	25	16.5	153
2017							
January	102	68.4	23	15.2	25	16.5	149
February	98	68.7	21	14.9	23	16.4	142
March	97	67.8	22	15.3	24	16.9	143
April	89	67.8	20	15.2	22	17.0	132
May	90	66.0	22	16.4	24	17.6	136
June	87	66.3	22	16.5	23	17.1	132
July	91	63.8	26	18.0	26	18.3	143
August	93	65.8	24	17.1	24	17.2	141
September	90	63.7	26	18.1	26	18.2	142
October	97	67.8	23	16.1	23	16.2	143
November	93	66.2	23	16.8	24	17.0	140
December	92	66.1	24	16.9	24	17.1	140
2018							
January	88	63.7	25	18.3	25	18.0	139
February	92	64.1	26	18.1	25	17.8	143
March	90	61.9	28	19.2	27	18.8	145
April	92	62.8	27	18.4	28	18.8	146

Time period	Outer Regional		Remote		Very Remote		Grand Total
	n	Row %	n	Row %	n	Row %	n
May	88	60.7	28	19.3	29	20.0	145
June	94	64.6	25	17.2	26	18.2	145
July	102	66.8	25	16.3	26	17.0	152
August	95	64.8	25	17.2	26	18.0	147
September	91	64.5	25	17.4	26	18.1	141
October	89	62.9	26	18.4	26	18.7	142
November	100	66.9	25	16.6	25	16.4	150
December	101	65.6	26	17.1	27	17.3	154
2019							
January	99	64.6	27	17.6	27	17.8	154
February	93	63.5	26	18.1	27	18.5	146
March	92	62.6	28	18.7	27	18.7	147
April	91	62.6	27	18.8	27	18.6	146
May	99	62.5	30	19.0	29	18.5	159
June	105	65.3	29	17.7	27	17.0	161
July	109	65.9	29	17.2	28	16.9	166
August	102	65.9	27	17.3	26	16.8	155
September	102	66.0	26	17.0	26	16.9	155
October	95	62.4	29	19.1	28	18.5	152
November	102	64.7	28	17.7	28	17.6	158
December	107	65.5	28	17.2	28	17.3	163
2020							
January	101	67.7	24	16.1	24	16.2	149
February	108	72.0	22	14.4	20	13.6	150
March	103	66.7	26	17.0	25	16.3	154
April	112	67.1	28	16.6	27	16.3	167
May	99	60.6	32	19.6	32	19.8	164
June	101	68.3	24	16.1	23	15.5	148
July	114	69.1	26	15.8	25	15.1	165
August	115	69.6	26	15.5	25	14.9	165
September	121	66.1	31	17.0	31	16.9	184
October	114	66.9	28	16.6	28	16.5	171
November	115	67.0	29	16.7	28	16.3	172
December	118	66.8	30	16.8	29	16.4	176
2021							
January	118	66.4	30	16.9	30	16.7	177

Time period	Outer Regional		Remote		Very Remote		Grand Total
	n	Row %	n	Row %	n	Row %	n
February	128	70.3	27	14.8	27	14.8	183
March	123	66.8	31	16.7	30	16.4	184
April	125	66.0	32	17.1	32	16.9	189
May	130	67.9	31	16.1	31	15.9	192
June	140	69.3	31	15.2	31	15.5	201
July	137	70.1	29	14.9	29	15.0	196
August	140	67.6	33	15.8	34	16.6	207
September	146	68.2	33	15.4	35	16.4	214
October	146	68.0	33	15.4	36	16.6	215
November	144	66.2	37	16.8	37	17.1	218
December	138	68.2	32	15.7	33	16.1	203
2022							
January	142	67.7	34	16.2	34	16.1	210
February	142	69.9	30	14.6	32	15.5	204
March	150	70.5	31	14.5	32	15.0	213
April	164	72.3	30	13.4	33	14.3	227
May	171	70.0	36	14.8	37	15.2	244
June	168	70.2	35	14.7	36	15.1	239
July	157	69.2	34	15.1	36	15.7	226
August	167	72.8	31	13.5	31	13.7	230
September	171	71.6	33	14.0	34	14.4	239
October	177	72.6	34	13.7	33	13.6	244
November	169	70.7	34	14.3	36	15.0	238
December	167	74.9	28	12.6	28	12.5	224

Table A4. Estimated OAT clients per month by IRSAD quintile (NT, 2013-2022)

Time period	1 (most disadvantaged)		2		3		4		5 (most advantaged)	
	n	Row %	n	Row %	n	Row %	n	Row %	n	Row %
2013										
January	28	17.3	<5		27	17.0	18	11.3	83	51.8
February	25	19.8	<5		20	15.9	14	10.6	64	50.1
March	19	16.0	<5		14	11.7	12	9.7	72	59.7
April	20	17.3	<5		7	6.1	13	11.0	74	63.0
May	19	15.9	<5		6	5.1	13	10.9	79	66.0
June	25	19.6	<5		11	8.7	13	9.9	76	59.8
July	22	19.1	<5		16	13.6	8	6.6	68	58.4
August	26	18.2	<5		24	16.7	8	5.8	82	57.2
September	21	15.3	<5		25	18.5	8	5.9	80	57.9
October	20	14.6	<5		23	16.4	8	5.9	84	61.0
November	20	15.2	<5		25	18.9	7	5.3	77	58.2
December	28	18.1	<5		28	18.6	8	5.5	85	55.7
2014										
January	28	17.7	<5		31	19.9	8	5.2	87	55.2
February	27	17.3	<5		26	16.7	8	5.1	91	58.8
March	26	17.7	<5		25	17.1	9	5.9	86	57.4
April	28	17.3	<5		31	19.5	10	6.1	88	55.4
May	41	24.4	<5		29	17.4	12	7.2	84	49.6
June	21	16.0	<5		25	19.0	9	7.0	74	56.0
July	24	17.8	<5		21	15.4	12	8.8	75	55.6
August	6	5.4	<5		21	19.7	11	9.8	68	62.3
September	27	17.1	<5		25	16.1	16	10.2	85	54.5
October	23	14.7	<5		26	16.5	18	11.1	88	55.5
November	23	14.3	<5		25	15.9	18	11.4	90	56.1
December	23	14.5	<5		23	14.9	18	11.6	88	56.4
2015										
January	22	16.2	<5		20	15.2	14	10.7	74	55.3
February	26	17.7	<5		24	16.1	15	10.0	78	53.7
March	23	17.6	<5		25	19.1	13	9.6	68	51.0
April	25	15.8	<5		29	18.1	16	10.0	84	53.5
May	28	17.0	5	2.8	28	17.1	16	10.1	86	53.1
June	28	16.5	5	2.9	26	15.8	17	9.9	92	54.9

Time period	1 (most disadvantaged)		2		3		4		5 (most advantaged)	
	n	Row %	n	Row %	n	Row %	n	Row %	n	Row %
July	29	18.3	5	2.9	26	16.9	15	9.6	82	52.3
August	29	17.9	<5		27	16.3	17	10.5	86	52.7
September	32	17.9	<5		34	19.2	18	10.0	90	50.9
October	33	18.8	<5		34	19.0	18	10.2	88	49.8
November	32	19.1	<5		36	21.1	16	9.5	81	48.2
December	31	18.9	<5		29	18.0	15	9.3	85	51.6
2016										
January	33	19.7	<5		28	17.0	17	10.2	85	51.2
February	29	18.6	<5		26	16.2	17	10.6	83	52.5
March	33	20.2	<5		27	16.5	19	11.5	80	49.5
April	29	18.9	<5		28	17.9	16	10.3	78	50.5
May	30	18.4	<5		29	17.8	16	9.9	85	51.8
June	27	17.7	<5		27	17.5	15	9.9	80	52.3
July	29	18.3	<5		27	16.7	18	11.3	81	51.2
August	31	19.8	5	2.9	23	14.7	18	11.6	80	50.9
September	28	19.6	<5		23	16.1	16	11.3	72	50.2
October	28	20.0	<5		23	16.2	14	9.9	72	50.8
November	28	20.1	<5		24	17.0	14	10.0	71	50.2
December	32	20.6	<5		24	15.9	16	10.5	77	50.4
2017										
January	31	20.7	<5		24	16.2	17	11.2	74	49.7
February	29	20.6	<5		21	14.9	16	11.2	73	51.1
March	30	21.3	<5		21	14.7	16	11.1	73	51.0
April	28	21.5	<5		19	14.1	15	11.5	68	51.3
May	30	22.4	<5		19	13.9	14	10.6	70	51.4
June	29	21.8	<5		17	13.2	14	10.9	69	52.0
July	33	23.3	<5		18	12.6	15	10.2	74	51.9
August	31	22.0	<5		19	13.3	15	10.7	74	52.4
September	33	23.3	<5		19	13.7	14	10.1	73	51.3
October	30	20.7	<5		18	12.7	14	10.1	79	54.9
November	30	21.8	<5		18	12.8	16	11.2	74	52.6
December	30	21.8	<5		16	11.8	16	11.5	74	53.0
2018										
January	32	23.1	<5		18	12.8	15	11.1	71	51.2
February	33	22.7	<5		17	11.6	14	9.5	77	54.0

Time period	1 (most disadvantaged)		2		3		4		5 (most advantaged)	
	n	Row %	n	Row %	n	Row %	n	Row %	n	Row %
March	35	24.3	<5		17	11.6	14	9.4	77	53.0
April	35	24.1	<5		13	9.2	14	9.8	81	55.2
May	37	25.7	<5		15	10.3	14	10.0	76	52.6
June	34	23.2	<5		15	10.5	14	9.8	79	54.9
July	33	21.7	<5		19	12.6	15	9.5	83	54.7
August	34	23.0	<5		19	12.8	14	9.5	78	53.1
September	33	23.1	<5		20	14.2	13	9.3	73	51.8
October	34	24.1	<5		21	15.1	13	9.5	71	49.9
November	32	21.2	<5		25	16.6	14	9.6	77	51.3
December	34	22.3	<5		26	16.8	14	9.0	79	51.0
2019										
January	35	23.0	<5		27	17.6	14	9.2	76	49.2
February	35	23.9	<5		25	17.3	13	9.1	71	48.8
March	36	24.2	<5		24	16.6	14	9.8	71	48.3
April	35	24.0	<5		27	18.6	13	9.1	68	47.0
May	38	24.1	<5		28	17.6	15	9.4	76	47.9
June	36	22.1	<5		31	19.1	15	9.4	78	48.5
July	36	22.0	<5		28	16.8	16	9.4	85	51.1
August	34	21.8	<5		27	17.3	13	8.6	79	51.1
September	34	21.8	<5		27	17.2	15	9.6	78	50.1
October	36	23.9	<5		27	18.0	15	9.9	71	46.8
November	36	22.7	<5		33	20.6	17	10.5	71	44.8
December	36	22.3	<5		35	21.3	16	9.5	75	45.7
2020										
January	31	20.8	<5		33	22.1	13	8.6	70	47.2
February	26	17.5	<5		28	18.6	12	7.9	82	54.6
March	32	21.0	<5		29	18.9	13	8.3	78	50.3
April	35	21.0	<5		34	20.7	14	8.6	81	48.5
May	42	25.5	<5		37	22.8	15	8.9	68	41.4
June	30	20.1	<5		33	22.6	13	8.4	70	47.6
July	32	19.6	<5		33	19.8	18	10.6	81	48.8
August	32	19.2	<5		32	19.5	19	11.5	80	48.6
September	40	21.8	<5		37	20.3	20	10.6	85	46.1
October	37	21.4	<5		38	22.3	17	9.9	78	45.4
November	36	21.1	<5		39	22.7	16	9.2	79	45.8

Time period	1 (most disadvantaged)		2		3		4		5 (most advantaged)	
	n	Row %	n	Row %	n	Row %	n	Row %	n	Row %
December	37	21.3	<5		39	22.0	18	10.5	80	45.3
2021										
January	38	21.5	<5		35	19.8	19	10.7	83	46.7
February	35	19.2	<5		37	20.0	20	11.2	89	48.8
March	39	21.3	<5		35	19.0	22	11.8	86	46.9
April	41	21.9	<5		38	19.9	21	11.3	87	45.9
May	39	20.5	<5		35	18.4	23	11.8	92	48.0
June	40	19.9	<5		39	19.5	24	12.0	96	47.5
July	38	19.4	<5		38	19.2	25	12.9	93	47.4
August	44	21.4	<5		40	19.4	29	14.1	92	44.2
September	45	21.0	<5		43	20.2	28	13.1	96	44.7
October	46	21.2	<5		41	19.2	28	13.1	98	45.4
November	48	22.0	<5		47	21.7	25	11.7	95	43.4
December	42	20.6	<5		41	20.2	25	12.3	92	45.4
2022										
January	43	20.6	<5		44	21.0	26	12.4	94	44.5
February	40	19.8	<5		40	19.4	26	12.9	95	46.5
March	41	19.3	<5		39	18.4	29	13.5	102	47.7
April	42	18.3	<5		47	20.6	30	13.1	107	47.0
May	48	19.6	<5		49	20.2	31	12.9	113	46.4
June	46	19.4	<5		53	22.0	31	13.0	106	44.5
July	45	20.1	<5		43	18.9	30	13.5	104	46.1
August	40	17.5	<5		49	21.3	33	14.3	105	45.7
September	44	18.4	<5		54	22.4	33	13.6	106	44.4
October	43	17.6	<5		58	23.9	34	13.9	107	43.6
November	46	19.2	<5		49	20.5	33	13.9	108	45.1
December	36	16.2	<5		46	20.5	33	14.9	106	47.5

IRSAD: Index of Relative Socioeconomic Advantage and Disadvantage

*Australia Bureau of Statistics. Census of Population and Housing: Socio-Economic Indexes for Areas (SEIFA), Australia, 2016. ABS: Canberra; 2018.

Table A5. Estimated OAT clients per month by setting (NT, 2013-2022)

Time period	Community Pharmacy		Hospital		Total
	n	Row %	n	Row %	n
2013					
January	121	75.3	40	24.7	161
February	95	74.8	32	25.2	128
March	92	76.8	28	23.2	120
April	96	82.3	21	17.7	117
May	101	83.6	20	16.4	120
June	110	85.8	18	14.2	128
July	102	87.2	15	12.8	117
August	126	87.6	18	12.4	143
September	121	87.9	17	12.1	138
October	119	86.4	19	13.6	138
November	115	86.6	18	13.4	133
December	134	87.8	19	12.2	152
2014					
January	138	87.9	19	12.1	157
February	140	89.7	16	10.3	156
March	130	86.9	19	13.1	149
April	139	87.5	20	12.5	159
May	127	74.8	43	25.2	170
June	117	88.6	15	11.4	132
July	117	86.5	18	13.5	136
August	108	100.0	0	0.0	108
September	129	82.7	27	17.3	157
October	128	80.2	32	19.8	159
November	134	83.6	26	16.4	160
December	129	82.5	27	17.5	157
2015					
January	118	87.5	17	12.5	134
February	124	85.1	22	14.9	146
March	112	84.7	20	15.3	133
April	134	85.0	24	15.0	158
May	140	85.9	23	14.1	163
June	147	87.6	21	12.4	168
July	130	83.2	26	16.8	156

Time period	Community Pharmacy		Hospital		Total
	n	Row %	n	Row %	n
August	135	83.0	28	17.0	163
September	144	81.3	33	18.7	178
October	150	84.6	27	15.4	177
November	142	84.3	26	15.7	169
December	136	82.8	28	17.2	164
2016					
January	131	78.6	35	21.4	166
February	120	75.8	38	24.2	159
March	126	78.0	36	22.0	162
April	124	80.1	31	19.9	154
May	137	83.1	28	16.9	164
June	126	82.5	27	17.5	153
July	124	77.9	35	22.1	159
August	122	77.2	36	22.8	158
September	112	77.9	32	22.1	144
October	118	83.5	23	16.5	142
November	115	81.7	26	18.3	141
December	123	80.5	30	19.5	153
2017					
January	118	78.9	31	21.1	149
February	113	79.6	29	20.4	142
March	113	79.5	29	20.5	143
April	103	78.2	29	21.8	132
May	112	82.3	24	17.7	136
June	106	80.4	26	19.6	132
July	118	82.6	25	17.4	143
August	111	78.7	30	21.3	141
September	114	80.5	28	19.5	142
October	116	81.1	27	18.9	143
November	110	78.5	30	21.5	140
December	112	80.0	28	20.0	140
2018					
January	109	78.9	29	21.1	139
February	122	85.5	21	14.5	143
March	124	85.5	21	14.5	145

Time period	Community Pharmacy		Hospital		Total
	n	Row %	n	Row %	n
April	129	88.1	17	11.9	146
May	125	86.3	20	13.7	145
June	127	87.4	18	12.6	145
July	131	85.9	21	14.1	152
August	128	87.2	19	12.8	147
September	123	86.8	19	13.2	141
October	125	88.3	17	11.7	142
November	130	86.4	20	13.6	150
December	138	89.6	16	10.4	154
2019					
January	135	87.9	19	12.1	154
February	128	88.0	18	12.0	146
March	127	86.4	20	13.6	147
April	128	88.1	17	11.9	146
May	142	89.3	17	10.7	159
June	141	87.4	20	12.6	161
July	142	85.8	24	14.2	166
August	133	86.1	21	13.9	155
September	132	85.3	23	14.7	155
October	130	85.8	22	14.2	152
November	135	85.2	23	14.8	158
December	143	87.5	20	12.5	163
2020					
January	136	91.5	13	8.5	149
February	138	92.0	12	8.0	150
March	145	93.9	9	6.1	154
April	151	90.7	16	9.3	167
May	150	91.8	13	8.2	164
June	131	88.8	17	11.2	148
July	142	86.1	23	13.9	165
August	136	82.0	30	18.0	165
September	153	83.3	31	16.7	184
October	142	83.2	29	16.8	171
November	143	83.1	29	16.9	172
December	139	78.8	37	21.2	176

Time period	Community Pharmacy		Hospital		Total
	n	Row %	n	Row %	n
2021					
January	134	75.9	43	24.1	177
February	135	73.8	48	26.2	183
March	130	70.5	54	29.5	184
April	136	71.8	53	28.2	189
May	137	71.5	55	28.5	192
June	141	69.8	61	30.2	201
July	130	66.6	65	33.4	196
August	135	65.2	72	34.8	207
September	151	70.6	63	29.2	214
October	154	71.6	60	28.1	215
November	163	74.6	55	25.1	218
December	148	72.9	55	27.0	203
2022					
January	150	71.5	60	28.5	210
February	143	70.3	61	29.7	204
March	144	67.7	69	32.3	213
April	154	67.6	74	32.4	227
May	166	68.3	77	31.7	244
June	162	67.7	77	32.3	239
July	156	69.1	70	30.9	226
August	153	66.8	76	33.2	230
September	161	67.4	78	32.6	239
October	162	66.3	82	33.6	244
November	156	65.4	81	34.1	238
December	145	64.8	77	34.6	224

Table A6. Estimated OAT clients per month by medicine and setting (NT, 2013-2022)

Time period	Community Pharmacy			Hospital		
	LAI	SL	Methadone	LAI	SL	Methadone
	buprenorphine	buprenorphine		buprenorphine	buprenorphine	
	n	n	n	n	n	n
2013						
January		71	50		39	<5
February		62	34		30	<5
March		59	34		26	
April		65	32		20	
May		67	34		20	
June		74	36		17	<5
July		67	35		14	<5
August		80	45		15	<5
September		78	44		15	<5
October		79	41		17	<5
November		78	37		17	<5
December		93	40		17	
2014						
January		97	40		16	<5
February		101	38		14	<5
March		95	35		15	<5
April		100	40		17	<5
May		88	39		38	<5
June		78	39		12	<5
July		80	38		15	<5
August		76	33		<5	<5
September		93	36		22	5
October		89	39		26	6
November		94	40		21	5
December		88	41		23	5
2015						
January		83	35		12	5
February		86	38		17	<5
March		81	32		15	6
April		94	40		19	<5
May		97	43		18	5

Time period	Community Pharmacy			Hospital		
	LAI	SL	Methadone	LAI	SL	Methadone
	buprenorphine	buprenorphine		buprenorphine	buprenorphine	
	n	n	n	n	n	n
June		102	45		17	<5
July		94	36		20	6
August		101	34		21	7
September		105	39		25	8
October		110	40		21	6
November		99	43		21	5
December		97	39		21	8
2016						
January		91	40		26	9
February		89	31		28	11
March		94	32		27	9
April		95	28		22	9
May		100	36		20	8
June		95	31		18	9
July		95	29		26	9
August		94	28		27	9
September		89	23		26	
October		91	28		18	9
November		85	30		20	8
December		90	33		23	6
2017						
January		89	29		26	6
February		86	28		23	6
March		85	28		24	5
April		77	26		25	<5
May		86	26		23	<5
June		82	24		22	<5
July		92	27		22	<5
August		89	22		26	<5
September		90	24		25	<5
October		86	30		23	<5
November		85	25		24	6
December		86	25		22	6

Time period	Community Pharmacy			Hospital		
	LAI	SL	Methadone	LAI	SL	Methadone
	buprenorphine	buprenorphine		buprenorphine	buprenorphine	
	n	n	n	n	n	n
2018						
January		92	17		21	8
February		97	25		16	5
March		100	24		12	9
April		102	28		12	
May		99	26		14	6
June		101	26		17	
July		105	26		18	8
August		105	23		13	6
September		98	25		12	6
October		94	31		11	6
November		100	29		15	6
December		108	30		11	5
2019						
January		111	24		12	7
February		106	23		12	6
March		105	22		13	7
April		107	21		13	<5
May		117	25		14	<5
June		114	27		18	<5
July		116	26		19	5
August		108	25		16	6
September		109	23		17	6
October		110	20		14	8
November		111	24		14	9
December		118	25		12	9
2020						
January		108	28		8	
February		117	21		7	8
March		121	23		6	
April		120	31		10	7
May		116	34		10	6
June		102	30		13	<5

Time period	Community Pharmacy			Hospital		
	LAI	SL	Methadone	LAI	SL	Methadone
	buprenorphine	buprenorphine		buprenorphine	buprenorphine	
	n	n	n	n	n	n
July		116	26	15	15	<5
August		108	28	22	13	
September		118	35	16	12	<5
October		107	35	19	7	<5
November		109	33	17	9	<5
December		108	31	29	7	<5
2021						
January	<5	102	31	35	6	<5
February	<5	96	36	40	5	<5
March	7	89	33	44	6	<5
April	8	97	31	41	9	<5
May	10	95	32	42	8	5
June	9	93	38	49	7	5
July	8	82	40	55	<5	6
August	9	91	35	59	5	8
September	10	93	49	52	<5	
October	11	93	50	51	<5	8
November	12	93	58	49	<5	7
December	11	92	45	48	<5	3
2022						
January	12	95	44	54	<5	<5
February	12	86	45	56	<5	
March	10	91	44	64	<5	<5
April	15	90	49	70	<5	<5
May	16	102	49	73	<5	<5
June	16	90	55	73	<5	<5
July	11	91	54	65	<5	<5
August	15	87	51	73	<5	<5
September	18	91	52	74	<5	<5
October	20	91	51	80	<5	
November	14	89	53	76	<5	<5
December	18	79	48	72	<5	<5

7. References

1. World Health Organization, Department of Mental Health and Substance Abuse. Guidelines for the psychosocially assisted pharmacological treatment of opioid dependence. Geneva: World Health Organization; 2009.
2. Colledge-Frisby S, Jones N, Larney S, et al. The impact of opioid agonist treatment on hospitalisations for injecting-related diseases among an opioid dependent population: A retrospective data linkage study. *Drug and Alcohol Dependence* 2022; **236**: 109494.
3. Degenhardt L, Grebely J, Stone J, et al. Global patterns of opioid use and dependence: harms to populations, interventions, and future action. *Lancet* 2019; **394**(10208): 1560-79.
4. Gisev N, Bharat C, Larney S, et al. The effect of entry and retention in opioid agonist treatment on contact with the criminal justice system among opioid-dependent people: a retrospective cohort study. *Lancet Public Health* 2019; **4**(7): e334-e42.
5. Santo T, Jr., Clark B, Hickman M, et al. Association of Opioid Agonist Treatment With All-Cause Mortality and Specific Causes of Death Among People With Opioid Dependence: A Systematic Review and Meta-analysis. *JAMA Psychiatry* 2021; **78**(9): 979-93.
6. World Health Organization. WHO, UNODC, UNAIDS technical guide for countries to set targets for universal access to HIV prevention, treatment and care for injecting drug users–2012 revision. 2012.
7. Colledge-Frisby S, Ottaviano S, Webb P, et al. Global coverage of interventions to prevent and manage drug-related harms among people who inject drugs: a systematic review. *Lancet Global Health* 2023; **11**(5): e673-e83.
8. World Health Organization. WHO Model List of Essential Medicines. World Health Organization; 2017.
9. Australian Government Department of Health and Aged Care. The Pharmaceutical Benefits Scheme (PBS). 2023. <https://www.pbs.gov.au/pbs/home> (accessed 21 June 2023).
10. Lintzeris N, Dunlop A, Masters D. Clinical Guidelines for Use of Depot Buprenorphine (Buvidal and Sublocade) in the Treatment of Opioid Dependence: NSW Ministry of Health; 2019.
11. Australian Product Information: Buvidal® weekly (buprenorphine) solution for injection. Therapeutic Goods Administration, 2018.
12. Australian Product Information: Buvidal® monthly (buprenorphine) solution for injection. Therapeutic Goods Administration, 2018.
13. Australian Product Information: Sublocade (Buprenorphine). Therapeutic Goods Administration, 2019.
14. Frost M, Bailey GL, Lintzeris N, et al. Long-term safety of a weekly and monthly subcutaneous buprenorphine depot (CAM2038) in the treatment of adult out-patients with opioid use disorder. *Addiction* 2019; **114**(8): 1416-26.
15. Haight BR, Learned SM, Laffont CM, et al. Efficacy and safety of a monthly buprenorphine depot injection for opioid use disorder: a multicentre, randomised, double-blind, placebo-controlled, phase 3 trial. *Lancet* 2019; **393**(10173): 778-90.

16. Farrell M, Shahbazi J, Byrne M, et al. Outcomes of a single-arm implementation trial of extended-release subcutaneous buprenorphine depot injections in people with opioid dependence. *International Journal of Drug Policy* 2022; **100**: 103492.
17. Barnett A, Savic M, Lintzeris N, et al. Tracing the affordances of long-acting injectable depot buprenorphine: A qualitative study of patients' experiences in Australia. *Drug and Alcohol Dependence* 2021; **227**: 108959.
18. Clay S, Treloar C, Degenhardt L, et al. 'I just thought that was the best thing for me to do at this point': Exploring patient experiences with depot buprenorphine and their motivations to discontinue. *International Journal of Drug Policy* 2023; **115**: 104002.
19. Lancaster K, Gendera S, Treloar C, et al. The Social, Material, and Temporal Effects of Monthly Extended-Release Buprenorphine Depot Treatment for Opioid Dependence: An Australian Qualitative Study. *Contemporary Drug Problems* 2023; **50**(1): 105-20.
20. Lintzeris N, Hayes V, Arunogiri S. Interim guidance for the delivery of medication assisted treatment of opioid dependence in response to COVID - 19: a national response. Royal Australasian College of Physicians, 2020.
21. Hall NY, Le L, Majmudar I, Mihalopoulos C. Barriers to accessing opioid substitution treatment for opioid use disorder: A systematic review from the client perspective. *Drug and Alcohol Dependence* 2021; **221**: 108651.
22. Australian Institute of Health Welfare. National Opioid Pharmacotherapy Statistics Annual Data collection. Canberra: AIHW, 2023.
23. IQVIA Australia & New Zealand. Navigating COVID-19 Impact: An initial assessment of the pandemic's effect on Australian healthcare. *White paper series - Part 1*, 2020.
<https://www.iqvia.com/-/media/iqvia/pdfs/library/white-papers/iqvia-anz-covid-19-white-paper.pdf> (accessed 20 July 2023).
24. Australian Government Department of Health and Aged Care. Post-market Review of PBS Opioid Dependence Treatment Program medicines: Interim Report to the Pharmaceutical Benefits Advisory Committee. Canberra, 2023.
25. Pharmaceutical Benefits Advisory Committee. Positive Recommendations made by the PBAC in March 2001. Canberra: Australian Government Department of Health and Aged Care; 2001.
26. Pharmaceutical Benefits Advisory Committee. Positive Recommendations made by the PBAC November 2005. Canberra: Australian Government Department of Health and Aged Care; 2005.
27. Pharmaceutical Benefits Advisory Committee. Positive Recommendations made by the PBAC March 2011. Canberra: Australian Government Department of Health and Aged Care; 2011.
28. Chidwick K, Bharat C, Gisev N, Farrell M, Degenhardt L. NDARC Technical Report: Real-world dosing intervals of long-acting buprenorphine for opioid agonist treatment. Sydney: UNSW, 2023.
29. Reece AS, Norman A, Hulse GK. Acceleration of cardiovascular-biological age by amphetamine exposure is a power function of chronological age. *Heart Asia* 2017; **9**(1): 30-8.

30. Valerio H, Alavi M, Silk D, et al. Progress Towards Elimination of Hepatitis C Infection Among People Who Inject Drugs in Australia: The ETHOS Engage Study. *Clinical Infectious Diseases* 2021; **73**(1): e69-e78.
31. Haber PS, Elsayed M, Espinoza D, Lintzeris N, Veillard AS, Hallinan R. Constipation and other common symptoms reported by women and men in methadone and buprenorphine maintenance treatment. *Drug and Alcohol Dependence* 2017; **181**: 132-9.
32. Kelty E, Hulse G. Rates of Hospital and Emergency Department Attendances in Opiate-dependent Patients Treated With Implant Naltrexone, Methadone, or Buprenorphine. *Addictive Disorders & Their Treatment* 2017; **16**(2): 39-48.
33. Larance B, Degenhardt L, Grebely J, et al. Perceptions of extended-release buprenorphine injections for opioid use disorder among people who regularly use opioids in Australia. *Addiction* 2020; **115**(7): 1295-305.
34. Larney S, Lai W, Dolan K, Zador D. Monitoring a Prison Opioid Treatment Program Over a Period of Change to Clinical Governance Arrangements, 2007-2013. *Journal of Substance Abuse Treatment* 2016; **70**: 58-63.
35. Jamshidi N, Athavale A, Murnion B. Buprenorphine not detected on urine drug screening in supervised treatment. *Journal of Opioid Management* 2021; **17**(7): 69-76.
36. Australian Bureau of Statistics. Australian Statistical Geography Standard (ASGS): Volume 5 - Remoteness Structure, July 2016 ABS: Canberra; 2018.
37. Australian Bureau of Statistics. Census of Population and Housing: Socio-Economic Indexes for Areas (SEIFA), Australia, 2016. ABS: Canberra; 2018.
38. Australian Bureau of Statistics. National, state and territory population, September 2022. Canberra: ABS; 2023.
39. Bharat C, Larney S, Barbieri S, et al. The effect of person, treatment and prescriber characteristics on retention in opioid agonist treatment: a 15-year retrospective cohort study. *Addiction* 2021; **116**(11): 3139-52.