

Categorisation and Description of Evidence

Author, year, location	Study setting	Study aims and data source	Study design	Period of study	Key findings of trend	Other themes
General Services for Substance Use Disorders (SUD)						
Hew et al., 2021, Melbourne, VIC, Australia (Hew et al., 2021)	Tertiary addiction medicine service	Service delivery trends on modality of medical appointments – service data	Retrospective study	Lockdown period (Aug to Sept 2020) vs post-lockdown (Nov 2020 to Feb 2021)	Poor uptake of videoconferencing for reviews (21% in lockdown and 7% post-lockdown).	Further marginalization of an already vulnerable population, due to digital inequality is identified.
Van De Ven et al, 2021, NSW, Australia (Van De Ven et al., 2021)	SUD NGO services	Service delivery trends on new episodes of care - electronic administrative data (NADABase)	Retrospective study	2019 (January-September) vs. 2020 (January-September including lockdown of 6 weeks in March-May)	<ul style="list-style-type: none"> - Decline in new episodes and the number of service users, referrals from criminal justice system seen in 2020. - Sharper reduction in residential than outpatient episodes and in metropolitan than regional/ rural services. - According to area, increase in counselling and decrease in detoxification in metropolitan services and increase in detoxification in regional and rural services. 	Differences in impact of COVID-19 according to the type of treatment and geographical area highlighted. Positive effect of technology - increasing the reach and flexibility of service use recognised.
Nelson et al., 2021, Nigeria (Nelson et al., 2021)	SUD NGO operated community-based drop-in centres (06)	Service delivery trends – data reported by managers	A survey of managers on service utilization	October 2019 to May 2020 (lockdown March and May 2020)	<ul style="list-style-type: none"> - Impact of lockdown reduced the range and quality of services provided. - Some services discontinued (home visits, group sessions, outreach services etc.). - Reduced face-to-face- counselling. 	Challenges in using telephone and online services to maintain service delivery in resource limited setting and among the user population with poor access and digital literacy highlighted. Gender-based barrier to access care among females noted.
Cantor et al., 2022, USA (Cantor et al., 2022)	SUD outpatient treatment facilities	Service availability (Telehealth) trend – data from national surveys in Behavioural Health Treatment Services Locator reports by SAMHSA	Retrospective - longitudinal data analysis	From 20 January 2020 to 20 January 2021	<ul style="list-style-type: none"> - Telehealth availability increased by 143% from 2020 to 2021 and 57% were using telehealth by January 2021. - Facilities that accepted private insurance were more likely to offer telehealth in 2021. 	Although telehealth facilities increased, it was not offered by a substantial percentage of facilities, highlighting the inequality of service availability esp. in public sector.

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Mark et al., 2021, California, USA (Mark et al., 2021)	Specialty addiction treatment facilities – outpatient and residential	Service delivery trends on treatment initiations – data from California Outcomes Measurement System	Cohort study	01 January 2019 – 29 February 2020 (pre-COVID-19 period), and 01 March 2020, to 31 October 2020 (COVID-19 period)	<ul style="list-style-type: none"> - Treatment initiations declined by 28% during COVID-19 period compared to pre-COVID-19 period. - Larger decline seen among certain demographical categories, those with cannabis as primary drug of concern, referrals from criminal justice system, referrals from community sources, and recent prison releases. 	Importance of additional support and resources for targeted populations especially prison released offenders has been highlighted.
Meshberg-Cohen et al., 2022, Connecticut, USA (Meshberg-Cohen et al., 2022)	SUD outpatient clinic - department of veterans' affairs	Service delivery trends of individual therapy - electronic health record data	Retrospective study	02 December 2019 – 14 March 2020 (pre-COVID), 15 March 2020 to 30 June 2020 (COVID period) 01 July 2020 to 01 October 2020 (Re-entry)	Average number of appointments attended by veterans during COVID (3.3) was higher than pre-COVID (2) and re-entry period (2.4). Treatment modality preference was associated with age and substance of concern, with younger age and opioid use disorder associated with videoconferencing and older age and alcohol and cocaine use disorders associated with telephone modality.	Patients getting individual therapy from telephone appointments needed more psychiatric emergency room input than patients using videoconferencing, suggesting better treatment outcome with videoconferencing than telephone for individual therapy.
Meadowcroft & Davis, 2022, Mississippi, USA (Meadowcroft & Davis, 2022)	SUD inpatient and outpatient treatment facilities	Service delivery trends – survey data on service capacity and client success rates	Online survey of facility representatives	March 2019 to March 2020 (Pre-COVID period) From March to May 2020 (Early pandemic) 2021 (Post pandemic)	Number of facilities stating that more than 80% of their clients have successfully completed treatment, decreased during the early pandemic period. However, this improved in post pandemic period.	Telehealth availability helped maintain services.
Avalone et al., 2022, New York, USA (Avalone et al., 2022)	SUD outpatient treatment programs	Service delivery trends on telehealth and in-person visits- electronic medical records data	Retrospective study	Three periods: 01 April to 01 July 2019 (pre-COVID-19 reference period), 01 January to 31 March 2020 (pre-tele visit period), and 01 April to 01 July 2020 (COVID-19 period).	During COVID-19 period, better compliance of scheduled appointment was noted with tele visits vs. in-person visits (69% vs. 38.0%)	Among a subset of patient on buprenorphine, those without prior in person visits, were more likely to attend tele visits.
Yang et al., 2021, Massachusetts, USA (Yang et al., 2020)	Integrated health service (not-profit) including mental health and SUD services - Outpatient visits	Service delivery trends on outpatient visits - electronic medical records	Observational study	Pre- pandemic (01 January - 10 March 2020), during the COVID-19 surge emergency (25 March- 18 May 2020) and during the partial re-opening (19 May-30 June 2020)- compared to same period from years 2018 - 2019	During the surge, visit volume decreased by 12.7% for SUD, while it increased for MH by 11.7%. During partial reopening, SUD visits continued to decline by 31.1%, going below pre-pandemic level, while visit volume for MH returned to pre-pandemic level. Telehealth used for MH/SUD visits increased from 5% pre-pandemic to 83.3%-85% since the surge period.	Trend of reduction in visits, may suggest additional barriers for the vulnerable populations, especially for the racial and ethnic minorities or for whom structural health equity and/or digital divide challenges may be affecting access to care.

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Mancheno-Velasco et al., 2022, Spain (Mancheño-Velasco et al., 2022)	Addiction centres for patient with dual pathology - Scheduled appointment and attendance at addiction centres	Service delivery trends on attendance of appointments - electronic medical records of Information System of the Andalusian Plan on Drugs (SiPASDA)	Retrospective observational study	Three comparison periods - 2021.pre-confinement (1 February 2019 and 15 March 2020), confinement (16 March 2020–31 May 2020), and post-confinement (1 June 2020–30 June 2021)	The results show a reduction in the number of patients seen per month and the care activity delivered to dual diagnosis patients during confinement and post-confinement periods. There was a reduction in the number of toxicological tests carried out both during and after confinement (except for alcohol).	Impact of initial COVID-19 related confinement led reduction of service use, didn't recover back to previous levels in the year after confinement period, suggesting persistent barriers to access and use services.
Services for treatment of alcohol use disorders/ problems (AUD)						
Busch et al., 2023, USA (Busch et al., 2023)	AUD outpatient setting	Service delivery trends of treatment visits and telemedicine use - Administrative claims data from OptumLabs® Data Warehouse	Cohort study of a commercially insured population in all care settings (primary and specialised)	Two cohorts from 2018 and 2019 examined in 2020, focusing on week 12, corresponding to the March 2020 US COVID-19 emergency declaration	Weekly visits decreased maximally at the start of the pandemic (week 12) by 22.5% and recovered to a level similar to previous year by April 2020 (week 16). Telehealth has been main contributor for maintaining access to services. Of all visits 50.1% were telehealth by July 2020 (week 27).	Initial disruption of therapy sessions with disproportionate disruption of group therapy in magnitude and duration more than individual therapy. Use of individual therapy increased exceeding 2019 level by 50% in mid-October 2020.
Palzes et al., 2022, North Carolina, USA (Palzes et al., 2022)	AUD/ alcohol use problems- Addiction services of an integrated healthcare system	Service delivery trends of treatment initiation, engagement, and retention - electronic medical records and claims data	Data analysis of insured population	During pre-COVID-19 (March to December 2019) and COVID-19 onset (March to December 2020)	Treatment initiations increased during COVID-19 period compared to pre-COVID period (32.4% vs. 24.2%) among all patient subgroups. The odds of treatment initiation were greater during COVID-19 (OR =1.46). Treatment use similarly increased across all racial/ethnic and socioeconomic groups with pre-existing disparities maintained.	Expanded coverage for telehealth potentially improved access to healthcare for people in most disadvantaged areas. Telehealth may have attracted a new subset of treatment seeking individuals particularly younger and healthier
Services Specific for Treatment of Opioid Use Disorders (OUD)						
Arunogiri et al., 2021, NSW, Australia (Arunogiri & Lintzeris, 2021)	OUD treatment programs of government local health services	Service delivery trends of buprenorphine long-acting injection use - service data	Observational study	September 2019 to May 2020	Service providers experienced in using depot buprenorphine expanded their use of depot treatment at the start of the COVID-19 outbreak (e.g., those with prior participation in clinical trials). In contrast service providers with minimal experience with depot buprenorphine did not substantially expand their use of this medication approach.	Circumstances due to COVID-19 have catalysed the uptake of longer acting treatments and demonstrated the potential utility of depot buprenorphine from both patients' and providers' perspectives.
Lintzeris et al., 2022, Southeast Sydney, NSW, Australia (Lintzeris et al., 2022)	OUD public health treatment services	Service delivery trends of opioid agonist treatment - electronic medical records data	Data analysis	Before (December 2019 – April 2020) and after (May 2020 – September 2020) changes were implemented.	5% dropped out of treatment. In the 'post' period there was significantly more use of depot buprenorphine (12–24%), access to any take-away doses (TAD; 24–69%), access to ≥6 TAD per week (7–31%), pharmacy dosing (24–52%) and patient contact by telehealth (14-24%).	Changes in guidelines and modified model of care maintained the access and use of services by patients.

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Meteliuk et al., 2021, Ukraine (Meteliuk et al., 2021)	OUD opioid agonist treatment programs	Service delivery trends - service data	Data analysis	Pre-COVID from January - March; and post-COVID April to June 2020.	Number of patients receiving opioid treatment increased in most sites during Jan-June 2020, but less during post-COVID period. A 45.9% net increase in take-home dosing found after policy changes implemented, leading to a reduction in 963,952 direct annual clinical contacts. Changes varied geographically.	Changes in guidelines by expanding treatment coverage and safely transitioned patients to take-home dosing which appeared to have reduced demand and supervision of patient, improving efficiency of treatment delivery.
Huskamp et al., 2020, USA (Huskamp et al., 2020)	OUD outpatient setting	Service delivery trends of medication fills, visits, and urine tests - claims data for commercial and Medicare Advantage from OptumLabs Data Warehouse	Cohort study of an insured population	Two cohorts Jan - May 2020 and 2019 followed up from March -May 2020	During the first 3 months of the pandemic, among patients already receiving OUD medication, there was no decrease in medication fills or clinician visits. However, fewer individuals were initiated on OUD medications, and there was less urine testing across all patients.	In the first 3 months of COVID-19, treatment has been maintained for existing pts but not for new inductions. Increased telehealth use, decreased urine testing probably affected by policy changes and service adaptations.
Thornton et al., 2020, Texas, USA (Thornton et al., 2020)	OUD	Prescribing filling trends for buprenorphine - prescribing and prescription filling data of Texas state-wide prescription monitoring program (PMP)	Data analysis using interrupted time series	02 March 2020, and 12 May 2020, (02 March as the baseline)	The rate of buprenorphine prescribing, and the number of buprenorphine prescribers remained constant in the early phase of the COVID-19 pandemic in Texas despite ambulatory care utilization declined (57%) across the region.	Efforts from providers and policy makers to maintain access to care were effective.
Nguyen et al., 2021, USA (Nguyen et al., 2021)	OUD	Prescription filling trends - retail pharmacy claims for buprenorphine -Symphony health database of USA	Retrospective study of an insured population	01 May 2019, to 28 June 2020, except for the week of 08 March to 15 March 2020, which was transitioning week including 16 March 2020, the date of approval of telemedicine use for buprenorphine prescribing.	Our findings suggest that, since the COVID-19 national emergency declaration, the number of individuals filling buprenorphine prescriptions has plateaued but has not decreased. There was no statistical significance or sudden declines in the level of these prescriptions in March.	Telehealth appears to have contributed to maintaining opioid treatment with buprenorphine during this period.
Clement et al., 2021, USA (Clement et al., 2021)	OUD	Prescription filling trends - for buprenorphine / naloxone and other medications for chronic diseases - data of Symphony Health (SH) on insurance claims and filling from pharmacies (capturing about 93% of the prescriptions dispensed in the US)	Retrospective study	May 2019 to August 2020	From a policy perspective, opioid management programs seem to demonstrate a robust ability to manage existing patients despite disruption. Treatment maintained for existing patients but not for new inductions. Probably a summative effect of all policy and service changes.	New patient inductions on buprenorphine appear to have declined during initial COVID-19 period in 2020.

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Currie et al., 2021, USA (Currie et al., 2021)	OUD	Prescription filling trends - for buprenorphine and opioid analgesics - national database of retail prescriptions (IQVIA's LRx database for the United States)	Cross-sectional study	18 March to 01 September 2020	Generally, use of buprenorphine maintained during COVID-19 despite temporary decrease. Increased number of doses per prescription thereby increased quantity per prescription appeared to have helped. Initiations remained low.	Increased reliance on telemedicine facilitated by changes in federal regulations may have helped existing patients maintain access to medications.
Cremer et al., 2022, USA (Cremer et al., 2022)	OUD	Prescription filling trends - monthly dispensing rates of buprenorphine, naltrexone, naloxone per 100,000 persons - retail pharmacy dataset (IQVIA New to Brand) covering about 92% of dispensed prescriptions in the United States	Longitudinal data analysis	March 2019 to December 2020	Buprenorphine dispensing increased among those aged 40–64 years and ≥ 65 years from March 2019 to December 2020. From March 2019 to December 2020, ER naltrexone dispensing decreased.	Access to buprenorphine has been maintained but not ER naltrexone. Access to all MOUD and naloxone could be further expanded to meet potential needs during and after the public health emergency, given their importance in preventing opioid overdose-related harms.
Barsky et al., 2022, USA (Barsky et al., 2022)	OUD	Service delivery trends - Buprenorphine inductions via telehealth - deidentified commercial and Medicare Advantage claims data from OptumLabs Data Warehouse	Cross-sectional study of a commercially insured population	Pandemic period of 01 April 2020, to 30 April 2021	After relaxation of the Ryan Haight Act's restriction, 13.9% of buprenorphine inductions were via telehealth. Fewer telehealth inductions among older adults and individuals in lower-income counties.	The groups with less telehealth inductions, may have lacked digital literacy or technology to use telehealth.
Hageman et al., 2022, Western Pennsylvania, USA (Hageman et al., 2022)	OUD	Service delivery trends - Buprenorphine treatment program of Mental Health clinic -electronic and paper based medical records	Cross-sectional comparison study	Pre-COVID period -01 September 2019 – 30 March 2020, and post-COVID period 31 March 2020, to 31 March 2021	No statistically significant difference between attendance rates - pre COVID-19 onset (in-person encounters alone) vs post COVID- onset groups (telehealth encounters alone or combined with in- person encounters).	Statistically significant difference between participation in individual therapy from pre COVID-19 to post-onset of the pandemic. Telehealth as an important adaptation for service maintenance in OUD, but therapy sessions affected.
Livingston et al., 2022, USA (Livingston et al., 2022)	OUD	Service delivery trends - medication, therapy/counselling - National Veteran Health Administration (VHA) electronic health record data	Longitudinal retrospective cohort study	Pre-pandemic comparison cohort during October 2017-December 2019, and the pandemic-exposed cohort during January 2019-March 2021, with 27-month observation period for both cohorts	Receipt of treatment was negatively impacted during the pandemic. A reduced likelihood of receiving buprenorphine, methadone, naltrexone, or therapy/counselling found after the onset of pandemic. Among patients who received care, evidence of improved adherence to buprenorphine and methadone was seen during the pandemic compared to prior years.	These changes were despite substantially increased telehealth across VHA.

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Lin et al., 2022, USA (Lin et al., 2022)	OUD	Service delivery trends of treatment visits for buprenorphine - service data of National Veteran Health Administration (VHA)	Retrospective data analysis	Comparison between pre-COVID-19 pandemic (March 2019 to February 2020) and during the first year of the pandemic (March 2020 to February 2021).	Number of patients receiving buprenorphine increased from 103 per month during pre-pandemic period to 265 patients in the first month after policy changes and continues to increase at a rate of 47 patients per month. Decrease in patients reaching 90-day retention and increase in number of days on buprenorphine among patients seen.	Use of buprenorphine as increased following policy changes due to COVID-19 but delivery has shifted to telehealth visits, suggesting any reversal of COVID-29 policies must be carefully considered.
Hughes et al., 2021, Appalachian Mountains, USA (Hughes et al., 2021)	OUD	Service delivery trends of visits - electronic health record data of a family medicine clinic	Retrospective cohort study	16 November 2019, to 15 June 2020, pre-COVID (16 January 2020–15 March 2020), the transition period of COVID-related changes (16 March 2020– 15 April 2020), and COVID period (16 April 2020–15 June 2020)	Total number of visits significantly increased during COVID, while overall new patient visits remained constant. The clinic's overall catchment area increased in size, with new patients coming primarily from rural areas. Length of time between urine drug screens significantly increased.	The patterns of service utilization during this period demonstrate the effectiveness of telehealth. Policy changes in USA, allowing for medications for OUD to be delivered via telehealth, waiving the need for in-person initiation of MOUD, and increased Medicaid compensation for MOUD may play a valuable role in improving access to MOUD during the COVID-19 pandemic and beyond.
McIlveen et al., 2021, Oregon, USA (McIlveen et al., 2021)	OUD	Service delivery trends - service data on medication dosing visits and dispensation of take-away doses - 20 Opioid Treatment Programs (OTPs) - public, non-profit, and for-profit OTPs	Longitudinal data analysis	Three periods - Pre SARS-CoV-2 (February or first half of March), post 1 SARS-CoV-2 (March, April, or May), and post 2 SARS-CoV-2 (April, May, or June)	Following the policy change, medication visits declined 33% and take-home medication increased 97% with 10.4 mean visits per patient and 11.3 mean take-homes per patient. The negative binomial mixed-effects regression model estimated a 54% reduction in mean visits per patient.	The policy change had the intended effect. More research is needed to assess unintended consequences associated with increased access to take-home medication.
Harm Reduction Services						
Whitfield et al., 2020, England, United Kingdom (Whitfield et al., 2020)	NSP through community pharmacies and specialist services	Service delivery trends - regional integrated monitoring system of Needle syringe programs (NSP)	Longitudinal data analysis	Jan to May 2020 - five 4-week periods, with the base period being the four weeks ending the 15 March 2020 (i.e., the period just before implementation of the restrictions)	91% NSP sites (110/115) remained open and 45% of them had reduced working hours or access restrictions. NSP clients decreased by 36%, visits by 36%, and needles distributed by 29% in the first 4 -week period following restrictions in mid-March 2020. NSP coverage for those injecting psychoactive drugs, declining by 50% from 14 needles per-week during this period, and coverage has remained at this level during the study period.	Initial impact of COVID-19 has been reduced utilization of NSP, which suggest increase equipment reuse.

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Picchio et al.2020, Spain (Picchio et al., 2020)	Harm reduction centres (20)	Service delivery trends – structured survey and electronic data	Cross-sectional comparative study	Comparison of March - June 2020 (Most heavily affected months) and March - June 2019	11/20 centres responded, one (01) reported closure for 02 months, and four (04) increased operating hours. The average number of service users across all centres decreased by 22% in comparison to the same period in the previous year and the average needle distribution decreased by 40% in comparison to 2019.	Overall, Spanish harm reduction centres were able to continue operating and offering services by adjusting operating hours. The number of overall service users and needles distributed fell during the Spanish state of alarm lockdown period, suggesting that fewer clients accessed harm reduction services during this time, increasing risks of reusing or sharing injecting equipment.
O'Keefe et al., 2022, Melbourne, Victoria, Australia (O'Keefe et al., 2022)	NSP and syringe dispensing machines (SDMs)	Service delivery trends of presentations - Needle and Syringe Program Information System (NSPIS) data	Descriptive data analysis	September 2017 - December 2020.	Usage of services across both the SDMs and the fixed site NSP declined during the COVID-19 lockdowns, but only the decline in SDM usage was significant	The slight, but significant decline in SDM use suggests barriers to access, though this may have been mitigated by SDM users acquiring needles/syringes from other sources. The decline, may be a concern if it led to lowered needle/syringe coverage and a subsequent increase in injecting risk.