

Systematic review of guidelines for managing physical health during treatment for substance use disorders: Implications for the alcohol and other drug workforce

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Abstract

Issues: Substance use disorders are associated with significant physical health comorbidities, necessitating an integrated treatment response. However, service fragmentation can preclude the management of physical health problems during addiction treatment. The aim of this systematic review was to synthesise the recommendations made by clinical practice guidelines for addressing the physical health of people attending alcohol and other drug (AOD) treatment.

Approach: An iterative search strategy of grey literature sources was conducted from September 2020 to February 2021 to identify clinical practice guidelines. Content pertaining to physical health care during AOD treatment was extracted. Quality of guidelines were appraised using the Appraisal of Guidelines Research and Evaluation II (AGREE-II) tool.

Findings: Thirty-three guidelines were included for review. Fourteen guidelines were considered high quality based on AGREE-II scores. Neurological conditions (90.9%) and hepatitis (81.8%) were the most frequent health problems addressed. Most guidelines recommended establishing referral pathways to address physical health comorbidities (90.9%). Guidance on facilitating these referral pathways was less common (42.4%). Guidelines were inconsistent in their recommendations related to oral health, tobacco use, physical activity, nutrition and the use of standardised assessment tools.

Implications and Conclusions: Greater consistency and specificity in the recommendations made for integrating physical health care within addiction treatment is needed. Ensuring that recommendations are applicable to the AOD workforce and to treatment services limited by funding and resource constraints should enhance implementation. Future guideline development groups should

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consider increased consultation with the AOD workforce and inclusion of clinical tools and decision aids to facilitate referral pathways.

KEYWORDS

addiction, clinical practice guidelines, physical health, substance use, treatment

1 | INTRODUCTION

Substance use disorders are often accompanied by serious physical health comorbidities [1]. Relative to the general population, people living with alcohol and other drug (AOD) problems are at an increased risk for developing many types of chronic illness, including cardiovascular disease [1–3], respiratory disorders [1, 2], hepatitis C [2, 4] and diabetes [1, 2]. Although less commonly a focus of literature [5, 6] oral disease and nutritional deficiencies are also disproportionately higher among this population [5, 7, 8]. Health comorbidities may arise as a direct consequence of AOD use (e.g., alcohol dependence and cirrhosis of the liver; blood borne viruses resulting from intravenous drug use). Otherwise, health problems can be caused indirectly by behavioural and lifestyle factors often associated with addiction, including reduced accessibility to healthcare and neglect of physical health concerns while using [7–9]. For example, cardiovascular disease, a leading cause of mortality among people with substance use disorders [3], can be exacerbated by unhealthy lifestyle behaviours such as tobacco use, poor diet and physical inactivity that frequently accompany AOD use [2, 10, 11]. The physical health sequelae of AOD use are not always gradual or cumulative, however. The cardiovascular complications of methamphetamine use for instance (e.g., vasoconstriction, cardiac arrhythmias and pulmonary hypertension) are associated with an increased risk of sudden cardiac death and stroke [12–14].

All physical health conditions, whether directly caused by AOD use or those that have arisen independently of substance use, are relevant to the quality of life and treatment outcomes of those living with substance use disorders. Failing to address physical health while people are in AOD treatment may lead to treatment drop-out and to an increased risk of relapse [15–17]. In contrast, improvements to physical health can enhance motivation to change substance use behaviour and increase the physical and psychological quality of life for people attending addiction treatment [16, 18]. The high prevalence of physical health comorbidities, as well as the impact of physical health on AOD treatment outcomes, supports a growing consensus that integration of AOD services and primary health care is imperative when treating substance use disorders [19]. This kind of

‘integrated care’ approach is advocated by federal drug and addiction agencies [20] and within clinical practice guidelines [21, 22]. Although, there is no consensus on how integrated care should be conceptualised, leading to difficulties for implementation and evaluation of integrated treatment approaches [23]. The term ‘integrated’ will be used from here on to refer to intervention efforts that target both substance use and physical health during treatment for substance use disorders.

Research has highlighted benefits of addressing physical health during AOD treatment, and services have been encouraged to apply recommendations made by practice guidelines to facilitate care for these comorbidities [24–26]. However, physical health needs continue to be inadequately addressed within addiction treatment settings [19, 27, 28]. With the exception of detoxification service providers, the AOD workforce is made up of predominantly non-medically trained professionals, including generalist AOD workers (e.g., welfare workers, support workers), social workers, counsellors and psychologists [29, 30]. The physical health consequences of substance use places additional demands on the AOD workforce who are often required to work across multiple sectors and roles to address client treatment needs [30]. With regards to managing client physical health comorbidities, there remains little research on how the AOD workforce can be better supported [27]. While research efforts dedicated to supporting medical physicians to address AOD problems in primary health-care settings are more substantial [31–35], they too report ongoing knowledge and training gaps when it comes to substance use disorders. Particularly physicians have indicated a strong need for specialist addiction advice and clarity on referral pathways between primary care and specialist AOD services [36].

Literature has reported on some of the structural and organisational factors that can undermine efforts of AOD treatment services and the AOD workforce when addressing physical health comorbidities of those in treatment [37–39]. One factor identified as contributing to sub-optimal management of physical health comorbidities is the way that AOD services are often disconnected from primary health-care providers [40]. This disconnect can cause fragmented service provision, impeding access to necessary health care for people who are attending AOD treatment and hampering efforts to engage primary

health-care practitioners in the treatment of substance use disorders [37]. Service fragmentation can mean that even when physical health needs are identified during AOD treatment, referral pathways from AOD treatment services to primary health care may not be established [19, 39].

Procedures used by AOD treatment services to identify physical health concerns have been identified as another factor precluding adequate care of physical health comorbidities. These include ill-defined assessment procedures resulting from poor integration of clinical instrument and information systems [41], and the use of internally developed assessment processes rather than psychometrically valid assessment tools [27, 42]. The length of time required to administer assessment procedures and perceptions of assessment processes as bureaucratic have also been cited as potential barriers for assessing and monitoring the health needs of clients [27, 41]. Yet, comprehensive screening is a necessary precursor to the identification, referral and management of physical health issues during AOD treatment.

Clinical practice guidelines are a resource that could support clinicians working in AOD treatment services to provide an integrated treatment response. When rigorously developed, clinical practice guidelines can enhance clinical decision-making and support the delivery of quality health care [43]. Clinical practice guidelines provide a link between scientific literature and health care in practice [43]. They offer a means of translating the growing research on integrated AOD treatment into recommendations that can be used by the AOD workforce and primary health practitioners working with substance use disorders. Recommendations made within clinical practice guidelines could provide guidance for improving the management of physical health conditions during AOD treatment. There have been no published systematic reviews examining what practice guidelines recommend for managing physical health comorbidities among people in treatment for substance use disorders.

1.1 | The current study

Through a systematic review of clinical practice guidelines, the current study aims to synthesise existing guidelines and their recommendations for integrating physical health care during AOD treatment. The review alone is not intended to prescribe what 'should' be done by the AOD workforce when addressing the physical health conditions of clients. Rather it aims to clarify what existing guidance recommends, as a starting point for enhancing the way that physical health is managed as part of

providing integrated treatment. A synthesis of clinical practice guidelines would provide insight on their usefulness for members of the AOD workforce and inform future considerations to better support the AOD workforce when addressing client physical health needs. Specifically, a systematic review was undertaken to answer the following:

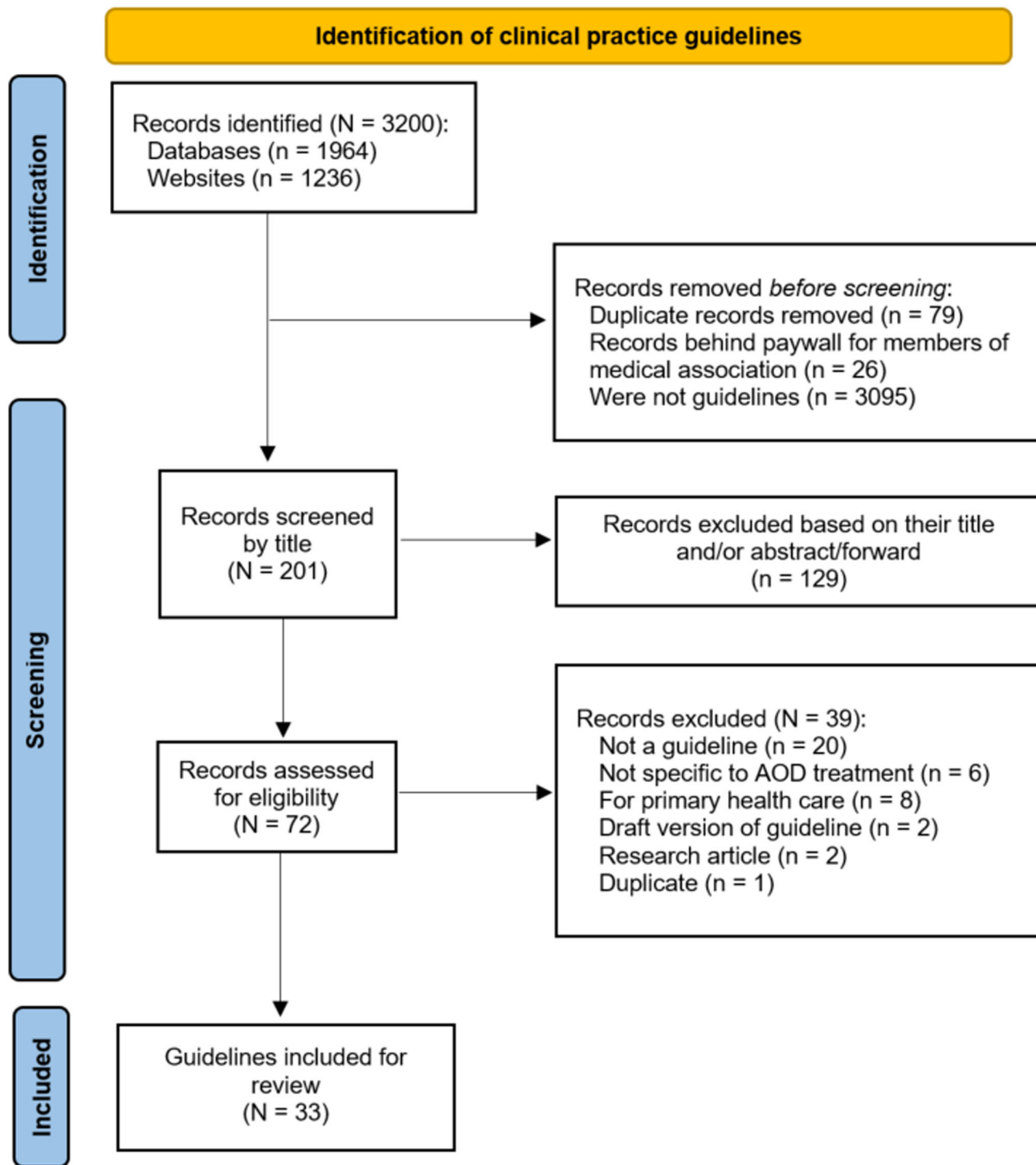
1. What physical health conditions do treatment guidelines recommend addressing during AOD treatment?
2. What recommendations are made for the management of physical health conditions during AOD treatment?

2 | METHOD

This systematic review protocol was registered in PROSPERO (International Prospective Register of Systematic Reviews; identification number: CRD42019123311). The principal aims were to determine what physical health conditions were identified by guidelines as relevant to the treatment of substance use disorders, as well as the recommendations made for managing these conditions as part of AOD treatment.

2.1 | Search strategy

A grey literature search was conducted to identify clinical practice guidelines for the treatment of substance use disorders. Guidelines published in English between the years 2010 and 2021 were searched using guideline specific databases and organisational websites including: The Guidelines International Network, The New Zealand Guidelines Group, The Scottish Intercollegiate Guidelines Network and The National Institute of Clinical Excellence (NICE). Other grey literature sources were also examined, these included Trove, Advanced Google searches and government/peak body websites (e.g., World Health Organization, Australian Institute of Health and Welfare, European Monitoring Centre for Drugs and Drug Addiction). Where possible, search engines embedded within organisation websites including Advanced Google searches were used with search terms for publication type (e.g., 'guideline'), condition (e.g., 'alcohol', 'drug', 'substance') and setting (e.g., 'treatment', 'rehab*'). To make sure that no guidelines were overlooked by the search strategy, medical practitioners who were experienced in treating people with substance use disorders were consulted and guidelines were reviewed for references to other guidelines.



Page MJ, McKenzie JE, Bossuyt PM, Boutron I, Hoffmann TC, Mulrow CD, et al. The PRISMA 2020 statement: an updated guideline for reporting systematic reviews. *BMJ* 2021;372:n71. doi: 10.1136/bmj.n71

FIGURE 1 PRISMA flow chart of search results at each stage of the screening process with inclusions and exclusions [44]

2.2 | Eligibility criteria

Initial searches identified 3200 records (Figure 1). Records that were not guidelines or that were not

publicly available were excluded. Duplicates were also removed. Remaining records ($n = 201$) were screened based on their title and abstract/forward where available. Eligible guidelines included for full analyses ($n = 33$)

fulfilled the following criteria: (i) were a clinical practice guideline*; (ii) were produced for AOD specialist treatment services†, in full or in part; (iii) recommendations related to the treatment of alcohol or drug use, either collectively or for specific substances; (iv) concerned the treatment of adult populations, either in full or part (i.e., not exclusively for the treatment of adolescent populations); (v) referenced 'physical health' in the text; and (vi) were published in English.

Search results were excluded if they were: (i) developed for use exclusively by medical practitioners; (ii) treatment service specifications‡; (iii) developed by a private organisation for use within that organisation only; (iv) a fact sheet, commentary or editorial article; or (v) original studies investigating the effectiveness of the clinical practice guideline.

2.3 | Data extraction

Physical health conditions and the types of recommendations made by guidelines for managing these conditions were categorised following reviews of the literature and team discussions involving all authors. Categories were established for binary classification of the data collected from guidelines. Information related to physical health conditions and recommendations for managing physical health comorbidities were extracted from guidelines by author Briony Osborne.

The following data were extracted:

- Guideline characteristics: title of guideline, authoring organisation, year of publication, target population and substance (e.g., alcohol, opioids, methamphetamine), target treatment group and intended audience.
- Physical health conditions and recommendations: The physical health conditions identified by guidelines were extracted (e.g., hepatitis, cardiovascular diseases, dental health). All health problems identified, including those directly related to substance use or caused indirectly through the behavioural or lifestyle factors associated with substance use disorders were extracted as part of this review. Physical health conditions were categorised as both specific health events (e.g., stroke) and as conditions of broad organ systems (neurological problems of the nervous system). This approach was used in an effort to capture any reference to physical health conditions made throughout guidelines. Guidelines were also reviewed to determine what recommendations were made for managing these physical health conditions (e.g., referral to general practitioner).

2.4 | Quality assessment

The Appraisal of Guidelines for Research and Evaluation II (AGREE-II) tool [46] was used to assess the quality of included guidelines. The AGREE-II is a validated tool developed for appraising clinical practice guidelines across six domains: (i) scope and purpose; (ii) stakeholder involvement; (iii) rigour of development; (iv) clarity of presentation; (v) applicability; and (vi) editorial independence. A total of 23-items across the six domains are scored on a seven-point Likert scale where scores range from 1 = strongly disagree to 7 = strongly agree. Consistent with previous systematic reviews that used the AGREE-II [47–49], we considered a guideline to be 'high quality' when scores on subscale 3 'rigour of development' which concerns methodology used for guideline development was $\geq 50\%$ of the maximum possible score. All guidelines were independently rated using the AGREE-II by author Briony Osborne, following completion of the AGREE-II training modules [50]. A proportion of guidelines (21%) were rated by a second reviewer, who held a Master's degree in clinical psychology and had also completed the AGREE-II training modules. Meetings between the reviewers were held to reach a consensus in scoring for items rated with a difference of more than two points.

3 | RESULTS

Thirty-three guidelines fulfilled the inclusion criteria for full data extraction. Guideline characteristics including authoring organisations, year of publication, target population group and substance type, are provided in Table 1. There was significant diversity in the substances targeted by guidelines as well as the intended audiences. Most guidelines ($n = 20$) directed recommendations for the misuse of alcohol and other drugs broadly and were non-specific in the substances that they targeted. Other guidelines made recommendations for specific substances exclusively; alcohol ($n = 4$), opioids ($n = 4$), benzodiazepines ($n = 2$), methamphetamines, volatile substances and cannabis (all, $n = 1$).

The intended audience of guidelines was extensive, including a wide scope of professionals. Most guidelines specified that their intended audience was broad, including social-welfare and medical professionals (i.e., medical practitioners, allied health professionals, social workers, case workers and specialist AOD workers or counsellors; $n = 14$). Six guidelines specified a broad intended audience that also included service users (i.e., those in treatment for substance use disorders) and/or their family/carers. Other guidelines ($n = 8$) referred to their intended

TABLE 1 Main characteristics of guidelines

Guideline title (ID)	Year of publication, institute, country	Substance	Target treatment group	Intended audience	Validated measures (containing at least one health-related item)
1 ALDP01: National Community Detoxification Benzodiazepine Guidelines [51]	2017, Ana Liffey Drug Project, Ireland	Benzodiazepines	Persons undergoing detoxification for benzodiazepine dependence	Anyone involved in providing psychosocial and medical support for detoxification in a non-residential treatment setting.	Treatment outcomes profile
2 ALDP02: National Community Detoxification: Methadone Guidelines [52]	2017, Ana Liffey Drug Project, Ireland	Methadone	Persons undergoing detoxification for methadone dependence	Anyone involved in providing psychosocial and medical support for detoxification in a non-residential treatment setting.	Treatment outcomes profile
3 BCCSU03: Provincial Guideline for the Clinical Management of High-Risk Drinking and Alcohol Use Disorder [53]	2019, British Columbia Centre on Substance Use, Canada	Alcohol	Youth (aged 12–25 years) and adult patient populations with high-risk drinking or alcohol use disorder	Physicians, nurses and nurse practitioners, pharmacists, allied health professionals, and all other clinical and non-clinical personnel involved in the care of individuals and families affected by alcohol use.	Clinical Institute Withdrawal Assessment of Alcohol Scale, Revised (CIWA-Ar)
4 BYMO04: Provincial Biopsychosocial/spiritual Withdrawal Management Guideline [54]	2017, B.C. Ministry of Health, the Provincial Health Services Authority, Canada	Broad/non-specific	Individuals receiving withdrawal care	Intended to support and inform health authorities and health authority-funded direct and contracted service providers.	Nil
5 NICE05: Coexisting severe mental illness and substance misuse: community health and social care services [55]	2011 (updated 2016), National Institute for Health & Clinical Excellence, England	Broad/non-specific	People aged 14 and above diagnosed as having coexisting severe mental illness and substance misuse and who live in the community	Staff working in all services who come into contact with this group.	Nil

(Continues)

TABLE 1 (Continued)

Guideline title (ID)	Year of publication, institute, country	Substance	Target treatment group	Intended audience	Validated measures (containing at least one health-related item)
6 CRISM06: CRISM National guideline for the clinical management of opioid use disorders [56]	2018, Canadian Research Initiative in Substance Misuse, Canada	Opioids	People with opioid use disorder (also applicable to adolescents aged 12–17 years)	Physicians and allied health-care providers, nurse practitioners, medical educators or clinical care case managers with or without specialised experience in addiction treatment.	Clinical Institute Withdrawal Assessment of Alcohol Scale (CIWA-A)
7 UKDoH07: Drug misuse and dependence: UK guidelines on clinical management [57]	2017, Clinical Guidelines on Drug Misuse and Dependence Update 2017 Independent Expert Working Group, England	Refers to 'drugs' generally in the Introduction. Otherwise, there is a focus on alcohol, and opioids and a small section on new psychoactive drugs	'People who misuse or are dependent on drugs'	Health-care professionals; Providers and commissioners of treatment for people who misuse or are dependent on drugs; Professional and regulatory bodies; Service users and carers.	Clinical Institute Withdrawal Assessment Scale—Benzodiazepines (CIWA-B)
8 GRIGG08: Methamphetamine Treatment Guidelines: Practice Guidelines for Health Professionals [58]	2018, Turning Point, Australia (funded by Victoria Department of Health)	Methamphetamines	Individuals with methamphetamine use disorder (chronic use and withdrawal)	Health professionals working in the clinical management of methamphetamine use disorder and related presentations.	Nil
9 MAREL09: Guidelines on the management of co-occurring alcohol and other drug and mental health conditions in alcohol and other drug treatment settings [59]	2016, National Health and Medical Research Council and National Drug and Alcohol Research Centre, Australia	Alcohol and other drugs (broadly)	Management of co-occurring, or comorbid, AOD and mental health conditions	AOD workers – we are referring to all those who work in AOD treatment settings in a clinical capacity. This includes nurses, medical practitioners, psychiatrists, psychologists, counsellors, social workers and other AOD workers.	The Camberwell Assessment of Need (CAN); CANSAS; CANSAS-P; CAN-Clinical (CAN-C); CAN-Research (CAN-R); General Health Questionnaire

(Continues)

TABLE 1 (Continued)

Guideline title (ID)	Year of publication, institute, country	Substance	Target treatment group	Intended audience	Validated measures (containing at least one health-related item)
10 NHMRC10: Consensus-based clinical practice guideline for the management of volatile substance use in Australia [60]	2011, National Health and Medical Research Council, Australia	Volatile substances—solvents, gases and aerosols (including various hydrocarbons, ethers, ketones and alkyl halides)	People who use volatile substances.	This clinical practice guideline has been developed for the use of healthcare workers including doctors, nurses, Aboriginal health workers, Ngangkari, alcohol and other drug workers and allied health professionals including mental health workers.	Strong Souls (A measure of self-reported physical, emotional, social and spiritual wellbeing); DiMascio Extrapyramidal Symptoms Scale
11 NICE11: Alcohol-use disorders: physical complications [22]	2010 (updated 2017), National Clinical Guideline Centre and National Institute for Health & Clinical Excellence (NICE), UK (England and Wales)	Alcohol	Prevention and management of acute alcohol withdrawal and dependence for adults and young people 10 years and older	The guideline is intended for use by the following people or organisations: <ul style="list-style-type: none"> • all healthcare professionals • people with alcohol-use disorders and their carers • patient support groups • commissioning organisations • service providers 	Clinical Institute Withdrawal Assessment (CIWA-Ar); Clinical Institute Withdrawal Assessment (CIWA-AD); EuroQol (EQ-5D) questionnaire; Medical Outcomes Study Short-Form Health Survey (MOS SF-36); EuroQol (EQ-5D) questionnaire
12 NICE12: Alcohol-use disorders, The NICE guideline on diagnosis, assessment and management of harmful drinking and alcohol dependence [61]	2011, National Collaborating Centre for Mental Health, National Institute for Health & Clinical Excellence (NICE), The British Psychological Society, England	Alcohol	The guideline makes recommendations for the treatment and management of alcohol dependence and harmful alcohol use	Primary, community, secondary, tertiary and other health-care professionals who have direct contact with, and make decisions concerning the care of, adults and young people with alcohol dependence and harmful alcohol use.	Alcohol Problems Questionnaire; Clinical Institute Withdrawal Assessment (CIWA-Ar); Leeds Dependence Questionnaire; EQ-5D questionnaire

(Continues)

TABLE 1 (Continued)

Guideline title (ID)	Year of publication, institute, country	Substance	Target treatment group	Intended audience	Validated measures (containing at least one health-related item)
13 NICE13: Psychosis with coexisting substance misuse, the NICE guideline on assessment and management in adults and young people [62]	2011, National Collaborating Centre for Mental Health, National Institute for Health & Clinical Excellence (NICE), The British Psychological Society, England	Substance misuse is a broad term encompassing, in this guideline, the hazardous or harmful use of any psychotropic substance, including alcohol and either legal or illicit drugs.	Assessment and management of adults and young people (aged 14 years and older) with psychosis and coexisting substance misuse	It is intended that the guideline will be useful to clinicians and service commissioners in providing and planning high-quality care for people with psychosis and coexisting substance misuse while also emphasising the importance of the experience of care for people with psychosis and coexisting substance misuse and their families, carers or significant others.	Nil
14 SAMHSA14: TIP 39: Substance Abuse Treatment and Family Therapy, A Treatment Improvement Protocol [63]	2015 (last update), Substance Abuse and Mental Health Services Administration, USA	Substances broadly (substance use disorders described by DSM-IV-TR)	Individuals or families affected by the use of alcohol as well as other substances of abuse	The primary audience for this TIP is substance abuse treatment counsellors; family therapists are a secondary audience.	Nil
15 SAMHSA15: TIP 41: Substance Abuse Treatment: Group Therapy, A Treatment Improvement Protocol [64]	2015 (last update), Substance Abuse and Mental Health Services Administration, USA	Refer to all varieties of substance use disorders described by DSM-IV-TR	People attending therapeutic groups for treatment of substance use disorders	The primary audience for this TIP is substance abuse treatment counsellors; however, the TIP should be of interest to anyone who wants to learn more about group therapy.	Nil
16 SAMHSA16: TIP 29 Substance Use Disorder Treatment For People With Physical and Cognitive Disabilities [65]	2012, Substance Abuse and Mental Health Services Administration, USA	Broadly substance use disorders	People with physical and cognitive disabilities and coexisting substance use disorders	Clinicians, program administrators and payers.	Nil

(Continues)

TABLE 1 (Continued)

Guideline title (ID)	Year of publication, institute, country	Substance	Target treatment group	Intended audience	Validated measures (containing at least one health-related item)
17 SAMHSA17: TIP 42 Substance Abuse Treatment For Persons With Co-Occurring Disorders [66]	2013, Substance Abuse and Mental Health Services Administration, USA	Broadly substance use disorders	Co-occurring disorders have one or more disorders relating to the use of alcohol and/or other drugs of abuse as well as one or more mental disorders	Addiction counsellors and other practitioners.	ASI; Clinical Institute Withdrawal Assessment (CIWA-Ar); Level of Care Utilisation System
18 SAMHSA18: TIP 47 Substance Abuse: Clinical Issues in Intensive Outpatient Treatment [67]	2013, Substance Abuse and Mental Health Services Administration, USA	Broadly substance use disorders	People attending intensive outpatient treatment for substance abuse problems	Practitioners in mental health, criminal justice, primary care, and other health care and social service settings.	ASI; Clinical Institute Withdrawal Assessment (CIWA-Ar)
19 SAMHSA19: TIP 48 Managing Depressive Symptoms in Substance Abuse Clients During Early Recovery [68]	2013, Substance Abuse and Mental Health Services Administration, USA	Broadly substance use disorders	Individuals with co-occurring substance abuse and depressive symptoms	Substance abuse counsellors	Nil
20 SAMHSA20: TIP 37 Substance Abuse Treatment for Persons with HIV-AIDS [69]	2014, Substance Abuse and Mental Health Services Administration, USA	Broad/non-specific but refers mostly to injecting drug use	People attending substance abuse treatment and who may have contracted or may be at risk of HIV/AIDS	Anyone who wants to improve care for HIV-infected substance abusers.	Nil
21 SAMHSA21: TIP 27 Comprehensive Case Management for Substance Abuse Treatment [70]	2015, Substance Abuse and Mental Health Services Administration, USA Could use for Study 4	Broadly substance use disorders	Clients in substance abuse treatment programs	Professionals providing case management for client's with substance abuse problems.	Nil
22 SAMHSA22: TIP 45 Detoxification and Substance Abuse Treatment [71]	2016, Substance Abuse and Mental Health Services Administration, USA	Broadly substance use disorders	Individuals detoxifying after substance abuse	Substance abuse treatment counsellors; administrators of detoxification programs.	Clinical Institute Withdrawal Assessment (CIWA-Ar); ASI
23 SAMHSA23: TIP 51— Substance Abuse Treatment: Addressing the Specific Needs of Women A Treatment Improvement Protocol [72]	2015, Substance Abuse and Mental Health Services Administration, USA	Broadly substance use disorders	Women with substance use disorders	Substance abuse treatment counsellors and administrators.	ASI; Clinical Institute Withdrawal Assessment (CIWA-Ar); Level of Care Utilisation System; Eating Attitudes Test (EAT-26); Drinker Inventory of Consequences (DrInC-2 L)

(Continues)

TABLE 1 (Continued)

Guideline title (ID)	Year of publication, institute, country	Substance	Target treatment group	Intended audience	Validated measures (containing at least one health-related item)
24 SAMHSA24: TIP 46 Substance Abuse: Administrative Issues in Outpatient Treatment [73]	2012, Substance Abuse and Mental Health Services Administration, USA	Broadly substance use disorders	Individuals with substance use disorders	Administrators and clinicians providing outpatient substance abuse treatment.	ASI
25 MOH25: Service delivery for people with co-existing mental health and addiction in New Zealand [74]	2010, New Zealand Ministry of Health, New Zealand	Broadly substance use disorders	Individuals with co-existing substance use and mental health problems	This guidance document is aimed at all those who have an interest and responsibility for planning, funding and providing mental health and addiction services.	HEEADSSS (The HEADSSS assessment is a screening tool for conducting a comprehensive psychosocial history and health risk assessment with a young person)
26 NSW26: NSW clinical guidelines: treatment of opioid dependence 2018 [75]	2018, NSW Ministry of Health, Australia	Opioids	People requiring opioid treatment in NSW, Australia	Generalist health settings (e.g., primary care, hospital, clinic or community settings) as well as specialised drug and alcohol/opioid treatment clinics.	Australian Treatment Outcome Profile
27 CCSMH27: Canadian Guidelines on Alcohol Use Disorder Among Older Adults [76]	2019, Canadian Coalition for Seniors' Mental Health, Canada	Alcohol	Older adults who have developed an alcohol use disorder	Clinicians	Nil
28 CCSMH28: Canadian Guidelines on Benzodiazepine Receptor Agonist Use Disorder [77]	2019, Canadian Coalition for Seniors' Mental Health, Canada	Benzodiazepines	Older adults who have developed a benzodiazepine use disorder	Clinicians	Clinical Institute Withdrawal Assessment-Benzodiazepine (CIWA-B); Physician Withdrawal Checklist
29 CCSMH29: Canadian Guidelines on Cannabis Use Disorder Among Older Adults [78]	2019, Canadian Coalition for Seniors' Mental Health, Canada	Cannabis	Older adults who have developed a cannabis use disorder	Clinicians	Nil

(Continues)

TABLE 1 (Continued)

Guideline title (ID)	Year of publication, institute, country	Substance	Target treatment group	Intended audience	Validated measures (containing at least one health-related item)
30 CCSMH30: Canadian Guidelines on Opioid Use Disorder Among Older Adults [79]	2019, Canadian Coalition for Seniors' Mental Health, Canada	Opioids	Older adults who have developed an opioid use disorder	Clinicians	Nil
31 VADoD31: Clinical practice guideline for the management of substance use disorders [80]	2015, Department of Veterans Affairs, Department of Defence, USA	Non-specific/various	Veterans Affairs and Department of Defence members/personnel with substance use disorders	Veterans Affairs and Department of Defence healthcare practitioners including physicians, nurse practitioners, physician assistants, psychologists, social workers, nurses, pharmacists, chaplains, addiction counsellors and others involved in the care of Service Members or Veterans who have a suspected or diagnosed substance use disorder.	CIWA-Ar for alcohol; Clinical Opiate Withdrawal Scale for opioids; Patient Health Questionnaire
32 WHO32: WHO mhGAP Guideline Update 2015 (originally published 2010) [81]	2015 (saved as 2016 because of ppt), World Health Organization, Switzerland	Broadly alcohol use disorders and/or drug use disorders	People with mental, neurological or substance use disorders	Non-specialised health-care providers working at first and second-level health-care facilities.	Nil
33 WHO33: Management of physical health conditions in adults with severe mental disorders [21]	2018, World Health Organization, Switzerland	Broadly alcohol use disorders and/or drug use disorders	People with severe mental disorders including substance use disorders	Health-care workers providing services at all levels of the health-care system, including outpatient and inpatient care. Health-care providers may include primary care doctors, nurses, specialists or other members of the health-care work force.	Nil

Abbreviations: ASI, Addiction Severity Index; CANSAS, Camberwell Assessment of Need Short Appraisal Schedule.

TABLE 2 Methodological quality according to the AGREE-II represented as % out of maximum possible score for respective domains (seven-point Likert scale, 1 = strongly disagree to 7 = strongly agree)

	Guideline title (ID)	1. Scope and purpose	2. Stakeholder involvement	3. Rigour of development	4. Clarity of presentation	5. Applicability	6. Editorial independence	Overall score (out of 7)
1	ALDP01	72	64	10	53	27	0	3.5 ^a
2	ALDP02	75	56	13	39	27	0	3.5 ^a
3	BCCSU03	94	67	83	78	71	83	6
4	BYMO04	56	50	29	89	38	0	4
5	NICE05	94	83	90	89	88	50	6
6	CRISM06	86	94	94	94	38	79	6 ^a
7	UKDoH07	50	78	29	61	46	25	4
8	GRIGG08	53	14	22	56	52	21	4.5 ^a
9	MAREL09	94	78	46	89	50	25	6
10	NHMRC10	94	89	92	100	79	67	6
11	NICE11	83	94	85	89	83	50	7
12	NICE12	94	89	83	78	75	67	6 ^a
13	NICE13	100	89	83	72	75	75	6
14	SAMHSA14	33	61	19	44	58	42	4
15	SAMHSA15	33	61	27	56	54	17	4
16	SAMHSA16	78	44	21	61	50	17	4
17	SAMHSA17	78	78	23	56	63	42	5
18	SAMHSA18	39	67	35	89	71	17	5
19	SAMHSA19	61	61	44	44	83	8	5
20	SAMHSA20	39	61	23	72	67	17	4
21	SAMHSA21	39	50	23	44	63	17	4
22	SAMHSA22	61	67	23	44	71	42	4
23	SAMHSA23	83	72	25	50	67	25	4
24	SAMHSA24	39	61	21	39	79	17	3
25	MOH25	50	50	15	33	67	17	4
26	NSW26	56	56	23	56	50	0	4
27	CCSMH27	56	44	77	83	58	67	5
28	CCSMH28	50	39	75	78	54	67	5
29	CCSMH29	61	28	77	78	54	67	5
30	CCSMH30	94	44	75	89	67	67	5
31	VADoD31	100	78	89	97	52	42	6 ^a
32	WHO32	67	89	100	89	54	92	6
33	WHO33	89	81	93	94	58	79	6 ^a

^aAGREE-II assessment performed independently by two reviewers.

audience in vague terms, such as, ‘healthcare providers’ ($n = 1$), ‘healthcare professionals’ ($n = 3$) or ‘clinicians’ ($n = 4$). Five of the guidelines indicated that the AOD workforce specifically were the target audience of their publication, using terms such as ‘substance abuse treatment counsellors’.

3.1 | Quality of the guidelines: AGREE-II appraisal results

The overall AGREE-II scores ranged from 3.0 to 6.0 out of 7 (see Table 2). Of 33 guidelines included, 14 were of ‘high quality’ based on the methodology used for their

TABLE 3 Physical health conditions identified by guidelines

	<i>n</i> (%)
Neurological problems/seizures ^a	30 (90.9)
Hepatitis ^b	27 (81.8)
Respiratory ^c	26 (78.8)
Cardiovascular ^d	26 (78.8)
Women's health ^e	26 (78.8)
Injury or accident ^f	26 (78.8)
HIV/AIDS	25 (75.8)
Malnutrition ^g	23 (69.7)
Diabetes ^h	21 (63.6)
Liver/cirrhosis	21 (63.6)
Weight concerns ⁱ	19 (57.6)
Tobacco smoking	19 (57.6)
Renal/kidney ^j	18 (54.5)
Psychomotor/mobility ^k	17 (51.5)
Chronic pain ^l	16 (48.5)
Sexual health ^m	16 (48.5)
Dental ⁿ	15 (45.5)
Bacterial infections ^o	14 (42.4)
Musculoskeletal ^p	13 (39.4)
Stroke	13 (39.4)
Blood/circulatory ^q	12 (36.4)
Digestive/pancreatitis ^r	11 (33.3)
Dermatological ^s	10 (30.3)
Immune compromised ^t	7 (21.2)

^aNeurological problems including seizures, multiple sclerosis, epilepsy, neuropsychological impairments affecting skill acquisition.

^bHepatitis; including hepatitis B, hepatitis C and hepatitis type unspecified.

^cRespiratory problems including asthma, pneumonia, chronic obstructive pulmonary disease (emphysema, chronic bronchitis) and respiratory depression caused by high doses of opioids.

^dCardiovascular problems including high blood pressure, heart attack, lipid abnormalities and disorders, heart arrhythmias and myocardial ischemia.

^eWomen's health including menstrual health issues, contraception, pregnancy and the need for screening procedures such as mammograms.

^fInjury and accidents including traumatic brain injury, other undefined brain injuries and traffic accidents (not including self-inflicted injury or suicide).

^gMalnutrition included nutritional deficiencies and malabsorption issues leading to conditions such as anaemia. Guidelines that suggested dietary support only were not included here.

^hDiabetes or metabolic disorders.

ⁱWeight concerns included being overweight or being underweight. Weight gain or weight loss as a side effect of treatment for substance use disorders (e.g., weight changes subsequent to using Acamprostate for alcohol use disorder).

^jKidney and renal problems including hepatic encephalopathy.

^kPsychomotor and mobility issues included nonspecific physical disabilities, peripheral neuropathy, myopathy, gait issues and carpal tunnel.

^lChronic pain linked to comorbid physical health conditions or as an unrelated condition.

development and expressed by scores >50% on the rigour of development subscale. Higher scores on this subscale indicate sufficient explanation on the search strategies used to identify scientific evidence and how the research was used to inform the final recommendations made by the guideline. Most guidelines presented recommendations in a clear and unambiguous way as indicated by scores >50% on subscale, clarity of presentation ($n = 25$). Scores above 50% on this subscale are also indicative of being able to locate recommendations easily within the text. Scope and purpose were adequately explained by most guidelines ($n = 24$). Higher scores on this domain indicate that objectives, the intended audience and the intended outcome of the guideline were clearly described. Most guidelines scored >50% on the stakeholder involvement subscale ($n = 24$), suggesting concerted efforts to consult with people affected by substance use and the workforce involved in treating substance use disorders. Majority of guidelines ($n = 24$) also scored >50% on the applicability subscale, indicating sufficient information on the barriers and facilitators for applying recommendations as well as advice and/or tools for implementation was provided. For subscales editorial independence, most guidelines scored <50%. Only one-third of guidelines ($n = 11$) scored >50% on this subscale, where lower scores indicate insufficient detail on funding sources and how conflicts of interests were addressed during the guideline development process.

3.2 | Physical health conditions addressed by guidelines

There was variation in the types of physical health conditions addressed by guidelines (see Table 3). The most frequently identified conditions were neurological

^mSexual health included sexually transmitted infections, sexual dysfunction and sexual behaviour influencing the health status of the individual and/or their sexual partners.

ⁿDental health problems including tooth decay (cavities), tooth loss, periodontal disease and poor oral health generally.

^oBacterial infections addressed non-specifically as well as tuberculosis, bacterial endocarditis, syphilis, meningitis, rheumatic fever, nosocomial infections and streptococcal pharyngitis.

^pMusculoskeletal problems including osteoporosis and arthritis.

^qBlood and circulatory conditions including infections of the blood vessels, deep vein thrombosis, haemorrhages, cancer of the blood vessels (e.g., Kaposi's sarcoma), septicaemia and peripheral vascular disease.

^rDigestive disorders including pancreatitis, gastritis, gastrointestinal bleeding and abdominal pain associated with substance use.

^sDermatological problems including skin infections and abscesses.

^tImmune compromised referred to conditions resulting from immune dysfunction (such as bacterial pneumonia) and when autoimmune conditions were referred to non-specifically.

TABLE 4 Recommendations and information provided by guidelines for addressing comorbid physical health conditions as part of treatment for substance use

Recommendation	Description	Examples from guidelines	n (%)
Passive referral ^a	Recommends that referrals should be made or contact with primary health care should be arranged.	SAMHSA21 'Establish and maintain relations with civic groups, agencies, other professionals, governmental entities, and the community at-large to ensure appropriate referrals, identify service gaps, expand community resources, and help to address unmet needs'. ALDP02 'In the event of service user relapse, the key worker should make a referral to medical support'. CRISM06 'Additionally, while this document offers a brief overview of the available evidence specifically related to opioid use disorder treatment in pregnant women, it emphasises the importance of specialist referral and further research and training in this area'.	30 (90.9)
Information on associated physical health comorbidities	The guideline gave at least a single example of a physical health comorbidity known to be associated with use of a substance and/or described pharmacological contraindications of prescription medicines used for the treatment of some substance use disorders.	NICE05 'Given the wide range of physical comorbidities associated with alcohol use, there are also potential benefits from improving generic staff competencies in a wider range of healthcare settings. Staff working in these generic settings need to be competent to identify, assess and manage the complications of alcohol misuse'. The guideline goes on to give examples of physical health comorbidities that have been associated with alcohol misuse 'malnutrition, congestive cardiac failure, unstable angina, chronic liver disease'. WHO33 provides detail on considerations for people in treatment who have diabetes—'The drug interaction review showed moderate interaction between metformin and some psychotropic medicines (fluoxetine, risperidone and clozapine) for which monitoring of blood glucose and dose adjustment may be needed'.	29 (87.9)
Ongoing monitoring of physical health	The guideline recommended ongoing monitoring of client physical health status and/or health concerns.	SAMHSA20 'Quantification of HIV RNA is the best method of monitoring the client with HIV infection, particularly when antiretroviral therapy has begun'. WHO32 'Offer all persons continued treatment, support, and monitoring after successful detoxification, regardless of the setting in which detoxification was delivered'.	27 (81.8)
Use of biomarkers	Guidelines that advocated the use of biomarkers to indicate the presence and severity of disease states. Biomarker testing refers to the use of laboratory tests of body fluid, blood or tissue to determine the presence of disease or illness. Examples include blood tests (including hepatitis virus panel), salivary swabs, urinalysis and liver function tests.	UKDoH07 'Blood tests including HCV antibody, PCR and liver function tests (LFTs) are used to help diagnose HCV infection and to assess the current state of progression of any liver disease'. NICE13 '• Biological – urine or saliva testing can be helpful to corroborate self-reports; • Haematological – full blood count, liver function test, hepatitis B, C, HIV; • Electrocardiogram – important for people prescribed methadone who are also prescribed other medication that can cause QT-elongation'.	24 (72.7)

(Continues)

TABLE 4 (Continued)

Recommendation	Description	Examples from guidelines	n (%)
Staff training and professional development	Recommends training/professional development opportunities for staff. May provide specific information on staff training resources.	NHMRC10 recommends that staff working with people who present for misuse of volatile substances undergo formal training. This guideline refers to training opportunities by multiple services (e.g., National Centre for Education and Training on Addiction) and details training materials that the reader can access (e.g., 'Petrol sniffing and other solvents: a resource kit for Aboriginal communities').	24 (72.7)
Primary health-care appointment for physical health review	Recommends that individuals entering treatment be reviewed by a medical practitioner or that staff coordinate an appointment with an external healthcare provider such as a general practitioner.	MAREL09 'General practitioners (GPs) in particular play an important role in delivering care to people with comorbidity, as they are often their first and most consistent point of contact [110,111]. Ideally, case management and treatment should be shared by health care providers/services, and there should be good communication and sharing of information between these professionals'.	23 (69.7)
Exercise or physical activity	Recommends physical activity as a component to treatment for substance use disorders. May describe the benefits of exercise for physical health and/or psychological wellbeing.	BYMO04 'Participants have access to a range of exercise activities that promote general wellness and a healthy mind/body connection and that are suitable to their needs and capacity. Such activities may include for example: daily walks; stretching; yoga; and swimming'.	23 (69.7)
Nutritional support and/or education	Guidelines may have recommended that information on nutrition be provided OR encouraged monitoring of food intake for improved dietary habits. May have included additional information on the role of nutrition in recovery from substance use disorders and improved physical health.	BCCSU03 'Conduct a nutritional assessment and advise on supplementation. Assess and provide advice to correct fluid imbalances and electrolyte deficiencies. It is recommended that all patients with AUD receive multivitamin supplementation including thiamine (100 mg), folic acid (1 mg), and vitamin B6 (2mg)'. SAMHSA23 recommends providing dietary support to people in treatment. The guideline provides an example of how this could be done: 'This exercise is not a simple pros-and-cons list for one side of the argument, but rather it involves looking at the benefits and costs for both sides of the argument; e.g., pros and cons for going on a diet as well as pros and cons for not going on a diet'.	21 (63.6)
Assessment tools for screening physical health	Guidelines recommended the use of a validated screening or assessment tool as part of assessing the physical health needs of people entering treatment for substance use. Tools only needed one item related to physical health to be included. Internally developed, unvalidated tools were excluded.	VADoD31 'Possible components of measurement-based care included biomarkers and patient reports. Measurement instruments included the Brief Addiction Monitor (BAM) and measure of patient health (e.g., Patient Health Questionnaire [PHQ-9]'. UKDoH07 'Routine screening tools such as the Alcohol Use Disorders Identification Test (AUDIT) or outcome measures such as the Treatment Outcomes Profile may provide prompts for further discussion of psychosocial issues'.	19 (57.6)
Tobacco cessation/nicotine replacement therapy	Guidelines recommended that smoking cessation support be provided and/or nicotine replacement therapy options	NSW26 'For dependent smokers, pharmacotherapy is proven to double the chances of successfully quitting. Pharmacotherapy options include nicotine replacement therapy (NRT) and anti-craving medicine (e.g.,	17 (51.5)

(Continues)

TABLE 4 (Continued)

Recommendation	Description	Examples from guidelines	n (%)
Consumer and/or carer information	<p>be provided to clients attending treatment for substance use disorders who are using tobacco.</p> <p>Recommendations related to providing service users and/or their carers with information to support improved physical health; also included recommendations to consult with the family and/or carers of the service user when obtaining healthcare information.</p>	<p>varenicline and bupropion). These can be prescribed for patients on methadone or buprenorphine for limited courses (12 weeks supply) and are subsidised by the Pharmaceutical Benefits Scheme'.</p> <p>GRIGG08 includes harm reduction tips for clients to help them reduce the risks associated with methamphetamine use. These include 'Brush and floss teeth regularly, especially after food and sweet drinks, to prevent dental disease' and 'An untreated overdose can have severe consequences, including heart attack or even death. If you suspect you or someone else has overdosed, call the Emergency Call Service 000'.</p>	16 (48.5)
Active referral ^b : Resources for coordination of referral pathways	<p>Guidelines included information, contact details or other resources to facilitate referrals for the management of service user health needs. These guidelines went beyond recommending passive referrals and provided guidance for the establishment of referral pathways.</p>	<p>MAREL09 'Where referral is non-urgent (e.g., they do not require urgent medical or psychiatric attention), the referral process may be passive, facilitated, or active. In the case of clients with comorbid conditions, active referral is recommended over passive or facilitated referral'.</p> <p>CRISM06 recommends use of BASE eConsult for connecting addiction specialist services with primary health-care providers.</p> <p>GRIGG08 provides links to resources to support coordination of referral pathways.</p>	14 (42.4)

^aPassive referral = instances where guidelines recommended referrals should be made or contact with primary health care should be arranged.

^bReferral pathway information = Provides links between physical health conditions and specific health professionals or organisations that could be contacted.

conditions (including seizures; 90.9%) and hepatitis (81.8%). Cardiovascular, respiratory and health conditions specific to women were also addressed frequently by guidelines (all 78.8%). Among the least frequently cited health problems were digestive conditions (including pancreatitis) (33.3%), dermatological conditions (30.3%) and compromised immunity (21.2%). Refer to Table S1 for physical health conditions identified within each individual guideline.

Some guidelines provided more general descriptions of physical health comorbidities: 'People with AOD use disorders are at an increased risk of physical health problems such as cardiovascular, respiratory, metabolic and neurological diseases' [59, p. 105]. Other guidelines were more specific, particularly when the guideline had been developed for specific substances or populations. For example, NICE12 details the way that malabsorption syndromes are common among people who misuse alcohol, perpetuating malnutrition among this population group and increasing their risk for neurological conditions such as Wernicke's encephalopathy [61].

3.3 | Recommendations for integrating physical health care and AOD treatment

The frequency of recommendations provided in the guidelines are summarised in Table 4. For recommendations made within guidelines individually, refer to Table S2. Instructions to initiate passive referrals to address health comorbidities, was the most frequent recommendation made across the guidelines (90.9%). Passive referral approaches involve providing information to service users and/or encouraging them to use health-care services so that their health comorbidities can be addressed. Recommendations to use active referrals (e.g., contacting the health-care provider directly and liaising with them on behalf of the person in treatment) were made less frequently (42.4%). Most guidelines (87.9%) gave examples of the types of physical health comorbidities that clinicians should be aware of when working with people attending treatment for substance use disorders (e.g., alcohol misuse and liver disease). Just over half of the guidelines (57.6%) recommended the use of validated assessment tools for screening the physical health needs of people entering AOD treatment. Guidelines included a wide range of assessments, including the Treatment Outcomes Profile (TOP), Clinical Institute Withdrawal Assessment Scale (CIWA), Camberwell Assessment of Need Short Appraisal Schedule and the General Health Questionnaire, among others (see Table 4). Of these assessment tools, those that were not created primarily for monitoring substance withdrawal,

typically contained a single item for assessing physical health (e.g., the Camberwell Assessment of Need Short Appraisal Schedule, the TOP). About half of the guidelines contained recommendations related to tobacco cessation or nicotine replacement therapy (51.5%) and the provision of information for consumers attending treatment and their family/carers (48.5%).

4 | DISCUSSION

The quality of the guidelines in this review was variable. Less than half of the guidelines were rated as 'high quality' according to scores on the AGREE-II. While most guidelines cited research evidence as the basis for informing final recommendations, recommendations were at times limited in their applicability within specialist AOD treatment settings. NICE guidelines (NICE05, NICE11, NICE12 and NICE13) consistently scored above >50% on the applicability subscale and provide good examples for optimising implementation of guideline recommendations. For example, NICE12 is specific on assessment tools that can be used on entry into AOD treatment and to monitor client outcomes (e.g., AUDIT, CIWA-Ar). These tools are then included as appendices in this guideline for ease of access and use. Access to funding and resources across AOD treatment services is not equal [37] and will limit the extent to which research findings and guideline recommendations can be applied by individual service providers [39]. Efforts to improve guideline applicability, particularly for AOD treatment services that face funding and resource constraints may encourage these services to implement recommendations related to the management of client physical health.

4.1 | Physical health conditions addressed by guidelines

The range of physical health conditions identified in this review (see Table 3) highlights the significant variation in health comorbidities addressed by guidelines. Encouragingly most guidelines made mention of health conditions disproportionately experienced by people with substance use problems, including neurological conditions, hepatitis and cardiovascular disease [3, 28, 82–85]. Other health problems were consistently less commonly identified. These tended to be acute medical conditions that require immediate intervention such as stroke (39%), or conditions that may be less severe and typically non-acute, such as dermatological concerns (30%).

Results of the review highlighted the omission of some health conditions that, relative to the general

population, affect people with substance use disorders at higher rates. Just over two-thirds of guidelines discussed nutritional deficiencies as a consequence of substance use. Since malnutrition is reported to be prevalent among those in AOD treatment [9, 42] and has been linked to all types of substance misuse [6, 8], it is surprising that it was not addressed more globally across guidelines. Just over half of the guidelines addressed weight concerns and tobacco use, while sexual health, sexually transmitted infections and oral health were mentioned by less than half of guidelines as relevant to the treatment of physical health comorbidities. This is despite all of these health conditions being disproportionately experienced by people living with a substance use disorder [5, 7, 10, 42, 86].

Greater consistency in the physical health conditions identified by guidelines as relevant to the treatment of substance use disorders could improve their utility for the AOD workforce. Aside from a missed opportunity to support adequate management of existing health problems, the AOD workforce need to screen for physical health comorbidities that are relevant to the health and safety of addictions treatment. In detoxification and the early stages of abstinence health problems such as epilepsy or Long QT δ syndrome will have implications for treatment options and dosing of medication [87–89]. Other conditions rely on detection and ongoing intervention throughout and following AOD treatment (e.g., asthma, hepatitis, cardiovascular disease and liver cirrhosis) [1, 3]. Moreover, the AOD workforce can play an important role in helping service users to manage their own health needs (e.g., providing nicotine replacement therapy to service users who smoke tobacco) [11].

4.2 | Recommendations for integrating physical health care and AOD treatment

Recommendations made in guidelines for managing the physical health comorbidities of those attending treatment for substance use disorders were wide-ranging. Almost all recommended passive referral to external service providers when health concerns were unable to be managed internally by the AOD service. Most guidelines provided examples of some health comorbidities that staff working in AOD programs should be aware of. In many guidelines there was also agreement on the importance of staff training and professional development for the AOD workforce and the use of biomarkers to assess physical health.

Most guidelines specified that non-medically trained members of the AOD workforce were a part of their intended audience (Table 1). Yet recommendations

related to biomarkers seemed to assume that non-medically trained AOD staff will know about such biomarker tests (e.g., use of blood tests and urinalysis) and will seek the appropriate medical support to have these completed and/or interpreted. Efforts to specify how the AOD workforce (particularly those without medical training) can use recommendations such as these is needed. Since gaps in professional knowledge of AOD workers has been cited as a barrier for assessing and managing client physical health [27, 37, 39, 90], staff training related to diagnostic testing and biomarkers may also be useful.

About two-thirds of guidelines contained recommendations related to physical activity and nutrition. Some guidelines identified malnutrition as a health comorbidity without recommending that nutritional support or information be provided as part of AOD treatment. Recommendations for increasing physical activity were not always in reference to addressing client weight concerns. These findings suggest a missed opportunity within some guidelines given the reported benefits of improved dietary intake and reduced sedentariness while people are engaged with AOD treatment [8, 9, 91, 92]. Studies have also reported on the feasibility of these kind of interventions that can easily be embedded within AOD treatment programs [11, 93].

The use of standardised screening tools to assess the physical health status of people entering AOD treatment were recommended by just over half of the guidelines. Standardised screening tools are necessary for reliable monitoring of intervention response among people accessing AOD treatment services [41]. They also support the establishment of referral pathways by informing what type of supports an individual is going to need during addiction treatment (e.g., financial aid, housing support, brokerage, physical health care). However, validated assessment tools such as the TOP, the CIWA and General Health Questionnaire are limited in their potential to inform urgency and timeliness needed for referral and follow-up care of physical health problems. This is an issue that warrants further consideration for improved delivery of an integrated treatment response. Uncertainty related to the severity of particular health conditions or presenting symptoms can mean that referral pathways are not established when they should be [27].

Less than half of guidelines included recommendations and information for the facilitation of active referrals for managing the physical health comorbidities of service users. Of the guidelines that did contain recommendations for active referral, additional information was provided that could be used by readers to initiate appropriate referral pathways. This included naming specific health professionals or services that should be

contacted for particular health conditions, providing contact information for relevant primary health-care providers, and/or detailing the eligibility criteria for services that provided physical health care. Recommendations that emphasise the benefits of active referrals and follow-up by the AOD workforce would reduce the likelihood that gaps in service delivery preclude health comorbidities from being managed during addiction treatment. Investment in inter-agency partnerships with external primary healthcare providers is another economical option for improved coordination of care. Inter-agency partnerships can establish more seamless referral pathways, linking those in treatment for substance use to appropriate health-care providers in the community [39], including services such as acute hospital care, comprehensive primary care, dental care and specialist services such as hepatology clinics. Guideline development groups should also consider the advantages of including localised guides for referral pathways as was done by some of the guidelines in this review.

4.3 | Limitations

A limitation of this review was that grey literature searches were limited to only those published in English. This review did not consider guidelines for the treatment of comorbid mental health conditions. It may be that such guidelines do contain important research evidence and recommendations for integrated AOD treatment that was not captured by this systematic review. Further, an iterative approach was used to search for guidelines. This means that there may have been some guidelines that were not identified. Despite this, the search strategy involved extensive manual and systematic searching where experts were also consulted to ensure that no eligible guidelines were inadvertently excluded from the review.

4.4 | Future directions and conclusion

Findings suggest that the ability of clinical practice guidelines to inform best practice for the integration of physical health care during AOD treatment could be improved. Significant variation in recommendations made across guidelines means inconsistencies in the guidance provided to AOD services and staff. Greater consistency in this regard would support enhanced decision-making, as clinical practice guidelines are intended to do [43]. A more universal approach to recommendations related to oral health, tobacco use, physical inactivity and dietary habits during AOD treatment should be considered. The irregularity in which these

health behaviours were mentioned in guidelines was an unexpected finding of the review, particularly given literature reporting on the way that AOD services are well-placed to deliver healthy lifestyle interventions [9, 11, 92–95].

This review highlights a need for greater specificity for recommendations that can be interpreted and applied by the AOD workforce, particularly those who are non-medical professionals. Guidelines should also consider the impact of funding mechanisms on the capacity of addiction services and staff to implement recommendations related to the management of client physical health. Providing tools (e.g., assessment and screening measures) and resources (e.g., decision aids) within the guideline or its appendices is one way in which guidelines may mitigate the limitations of funding constraints for delivering integrated care.

AUTHOR CONTRIBUTIONS

All authors participated in writing the manuscript and have reviewed and accepted the final version. Briony Osborne conceived and designed the analysis with guidance from authors Peter J. Kelly and Briony Laranca.

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CONFLICT OF INTEREST

No conflicts declared.

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ENDNOTES

* A systematically developed statement to assist practitioners and consumer decisions about appropriate health care for specific circumstances [43].

† AOD specialist services included outreach, counselling services, withdrawal services, residential rehabilitation or other/not specified, adapted from reports by the National Centre for Clinical Research on Emerging Drugs [45].

‡ This is because treatment service specifications have the intention of providing guidance to services on organisational structure, conditions and resources; different from clinical guidelines which provide direction to clinicians working with individual clients.

§ QT refers to the QT interval of the electrocardiogram [87].

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SUPPORTING INFORMATION

Additional supporting information can be found online in the Supporting Information section at the end of this article.

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