

## Research Paper



## Availability of substance use screening and treatment within HIV clinical sites across seven geographic regions within the IeDEA consortium

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## ABSTRACT

**Background:** Overwhelming evidence highlights the negative impact of substance use on HIV care and treatment outcomes. Yet, the extent to which alcohol use disorder (AUD) and other substance use disorders (SUD) services have been integrated within HIV clinical settings is limited. We describe AUD/SUD screening and treatment availability in HIV clinical sites participating in the International epidemiology Databases to Evaluate AIDS (IeDEA) consortium.

**Methods:** In 2020, 223 IeDEA HIV clinical sites from 41 countries across seven geographic regions completed a survey on capacity and practices related to management of AUD/ SUD. Sites provided information on AUD and other SUD screening and treatment practices.

**Results:** Sites were from low-income countries (23%), lower-middle-income countries (38%), upper-middle income countries (17%) and high-income countries (23%). AUD and SUD screening using validated instruments were reported at 32% (n=71 located in 12 countries) and 12% (n=27 located in 6 countries) of the 223 sites from 41 countries, respectively. The North American region had the highest proportion of clinics that reported AUD screening (76%), followed by East Africa (46%); none of the sites in West or Central Africa reported AUD screening. 31% (n=69) reported both AUD screening and counseling, brief intervention, psychotherapy, or Screening, Brief Intervention, and Referral to Treatment; 8% (n=18) reported AUD screening and detox hospitalization; and 10% (n=24) reported both AUD screening and medication. While the proportion of clinics providing treatment for SUD was lower than those treating AUD, the prevalence estimates of treatment availability were similar.

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*Conclusions:* Availability of screening and treatment for AUD/SUD in HIV care settings is limited, leaving a substantial gap for integration into ongoing HIV care. A critical understanding is needed of the multilevel implementation factors or feasible implementation strategies for integrating screening and treatment of AUD/SUD into HIV care settings, particularly for resource-constrained regions.

## Introduction

Alcohol and other substance use disorders are common among people with HIV and are associated with poor HIV care and treatment outcomes. Globally, nearly a third of people with HIV may also have a possible alcohol use disorder (AUD) (Duko et al., 2019; Necho et al., 2020). AUD among people with HIV can lead to numerous suboptimal non-HIV related health outcomes, such as liver disease, as well as suboptimal ART adherence and viral suppression. Other substance use disorders (SUD) involving both injecting and non-injecting drug use are prevalent in most countries in the world and also often reported among people with HIV (Deegenhardt et al., 2017; El-Bassel et al., 2014; Lancaster et al., 2018). Similar to AUD, SUD hinders engagement across the HIV care treatment cascade from testing, linkage to care, retention, and ultimately viral suppression (Amin & Douaihy, 2018; Gonzalez et al., 2011; Lucas, 2011; Vagenas et al., 2015; Velloza et al., 2020). Despite known adverse health effects of AUD and SUD, drinking and drug use are largely not addressed within HIV care settings (Edelman et al., 2021; Oldfield et al., 2020; Shahrir et al., 2020; Wyse et al., 2019). The UN Political Declaration on HIV and AIDS in 2016 recommended enhancing integration of AUD and SUD service delivery for people with HIV (United Nations, 2016). Integrating these services can capitalize on limited resources and also directly improve clinical HIV and SUD clinical outcomes for people with HIV (Haldane et al., 2017).

Evidence-based approaches exist for integrating screening and treatment of AUD and SUD into HIV care settings, yet implementation of these approaches remain suboptimal, particularly in LMIC (Parcesepe et al., 2020). A recent review of the global coverage of syringe exchange programs, opioid agonist treatment, and other harm reduction services identified modest increases in availability in recent years, however, availability of these services remains low and not reaching those most in need, such as people with HIV within HIV care settings (Colledge-Frisby et al., 2023). Among a sample of HIV care and clinical sites participating in the International epidemiology Databases to Evaluate AIDS (IeDEA) consortium in 2017, availability of substance use-related screening and referral varied substantially by geographical region and by country income level. Approximately 71% of sites in high income countries reported substance use screening and referral, which was notably higher than 35% of sites in low and lower middle-income countries (LMICs) (Parcesepe et al., 2020). As AUD and other SUD service integration can improve HIV outcomes and advance progress to the Joint United Nations Programme on HIV/AIDS 95-95-95 goals, (Kaaya et al., 2013) timely and updated assessments of the availability of these services within HIV care will provide valuable insights on identifying persistent gaps in implementation.

Alcohol and substance-related policies, such decriminalization and legalization of harm reduction services, can shape alcohol and drug availability and significantly reduce consumption (Manthey et al., 2019; Park & Kim, 2020). Such policies can potentially serve as a catalyst AUD and other SUD service availability and, by extension, their provision within HIV care settings. In healthcare settings, people who use alcohol or other drugs often face discrimination and stigma that are perpetuated by punitive policies and legal systems (Carvalho et al., 2019; Csete et al., 2016; Van Boekel et al., 2013). As a result, people may be less likely to disclose alcohol or drug use within HIV care settings especially when screening is not routinely conducted, which prevents identification of hazardous alcohol and substance use and linkage to appropriate care (Carvalho et al., 2019; Hammarlund et al., 2018). However, national harm-reduction alcohol and drug-related policies could signal

governments' commitment to addressing AUD and SUD and availability of services. For example, national alcohol policies, including BAC (Blood Alcohol Content) limits, may raise public awareness on alcohol related harms, which may motivate HIV people with HIV to seek support when routinely screened for in HIV care settings. Documenting differences in AUD and SUD service availability in HIV care settings by national policy environment may provide insights for future policies.

Here, we assess the availability of alcohol and substance use validated screening and treatment among sites that participated in the IeDEA 2020 site assessment survey. We examined differences in screening and treatment by HIV treatment site characteristics, region, and income level. We then explored differences in service availability by national policy environment, drawing from publicly available country-level alcohol consumption and substance use harm reduction policy data. Findings may improve our understanding of the policy, regional, and resource factors that influence the provision of AUD and other SUD services within HIV care.

## Methods

IeDEA is an international research consortium that was established in 2006 by the National Institutes of Health (NIH) to collect observational HIV care data across the globe (Egger et al., 2012; Gange et al., 2007; IeDEA, 2021). The IeDEA consortium is comprised of HIV clinical sites across seven geographic regions: East, Central, Southern, and West Africa, as well as the Asia-Pacific, North America (NA-ACCORD) and the Caribbean, Central, and South America (CCASAnet). HIV clinical sites that participate in the IeDEA consortium are located within an IeDEA region and have the capacity to routinely contribute electronic data. HIV clinical sites participating in IeDEA are primarily public-sector health facilities, including both academic and community-based hospitals and health centers.

### 2020. IeDEA site assessment survey

Data for the 2020 IeDEA site assessment survey were collected between September 2020 and February 2021. The design and implementation of the 2020 IeDEA site assessment survey has been previously described (Brazier et al., 2023). Briefly, sites actively contributing patient-level data to the IeDEA consortium (n=238) were eligible to participate, representing 41 different countries across 7 geographic regions. The site assessment survey was developed through a consultative, 18-month process of several content domains related to service availability and care at HIV treatment sites, including substance use. Experts from IeDEA's technical working groups developed the site assessment survey over the course of an 18-month consultative process. This process built on the experience from delivering and analyzing previous site assessment surveys while also allowing for the expansion of content domains related to service availability and care at HIV treatment sites, including substance use. An iterative review process, involving multiple rounds of review, feedback, and editing with experts from IeDEA's technical working groups was conducted to standardize the format of new survey content or questions, while ensuring conformed with best practices in site-level survey design and measurement developed through prior IeDEA site assessment surveys. Paper and online versions of both site assessment surveys are available in English and French and were piloted in both languages before survey launch. Clinic staff with in-depth knowledge of the care and services provided to adult and children/adolescents HIV patients completed the self-administered

survey in English or French, using paper forms and online Research Electronic Data Capture (REDCap) electronic versions of the questionnaire, depending on the country context. Site-level partners selected staff with in-depth knowledge about the care and services provided in facility to complete the questionnaire. As necessary, selected staff were encouraged to consult with staff from other units of the health facility, such as pharmacy and laboratory departments. Of the 238 eligible sites, 223 participated, with an overall response rate of 95% (11 sites did not begin the survey), and the urban vs. rural distribution of responding sites (69% and 31%, respectively) matched the distribution of eligible sites (Brazier et al., 2023).

## Indicators

### Screening with a validated instrument

Clinic staff respondents completing the site assessment survey were asked if any HIV patients were screened for AUD or other SUD at their facility. Then a list of instruments used to screen for AUD or other SUD was provided for respondents to select from if they reported screening was available (Table 1).

Facilities reporting that a validated instrument was used for screening were considered facilities that *screen with a validated instrument*. Facilities reporting that screening was available, but not indicating any of the validated instruments were considered facilities that did *not screen with a validated instrument*. Screening instruments were defined as “validated” if they had ever been previously validated in the peer-reviewed literature. Note, the screening instruments listed above have been previously “validated,” but may or may not have been validated in the specific country of, language, population, or setting in which they were being used.

### Available treatments and syringe exchange program

Sites reporting screening with a validated instrument were asked the following question: “For patients who screen positive for alcohol use disorders/substance use disorders (other than alcohol use), what treatment interventions are available at this health facility? Check all that apply” Ultimately, responses for both AUD and SUD included three types of treatment: 1) counseling, brief intervention, psychotherapy (motivational interviewing, cognitive behavioral therapy), and Screening,

**Table 1**

List of validated instruments used to assess AUD, other SUD or both.

Instrument name	Use to screen for:		
	AUD	Other SUD	Both
Alcohol Use Disorders Identification Test (AUDIT) (Organization, 2001; Saunders et al., 1993)	X		
Alcohol Use Disorders Identification Test-C (AUDIT-C) (Bradley et al., 2003; Bush et al., 1998)	X		
Cut down, Annoyed, Guilty, Eye-opener (CAGE) (Ewing, 1998)	X		
Alcohol, Smoking and Substance Involvement Screening Test (ASSIST) (WHO ASSIST Working Group, 2002)			X
Tobacco, Alcohol, Prescription medication and other Substance use (TAPS) (Carter et al., 2022; McNeely et al., 2016)			X
Substance Abuse and Mental Illness Symptoms Screener (SAMISS) (Whetten et al., 2005)			X
Car, Relax, Alone, Forget, Friends, Trouble (CRAFT) (Dhalla et al., 2011)			X
Cut down, Annoyed, Guilty, Eye-opener Adapted to Include Drugs (CAGE-AID); (Brown et al., 1998)		X	
Addiction Severity Index (ASI) (McLellan et al., 1980; McLellan et al., 1992)		X	
Drug Abuse Screening Test (DAST) (Skinner, 1982; Yudko et al., 2007)		X	

Brief Intervention, and Referral to Treatment (SBIRT); 2) detox hospitalization; 3) medication (e.g., Disulfiram, Naltrexone, Acamprosate, methadone replacement therapy, or other pharmacological treatments), and (only for SUD), 4) syringe exchange

### Alcohol and drug use policies

To capture AUD policies of the countries in which the sites were located, we extracted data from the World Health Organization *Global status report on alcohol and health 2018*. (World Health Organization, 2019) Specifically, we created binary country-level variables for the presence or absence: national alcohol policy; excise tax on wine, beer or spirits, legally binding advertisements laws, legally binding product placement laws, and national or subnational BAC (Blood Alcohol Content) limits while driving.

To capture SUD policies of the countries in which the sites were located, we extracted data from the *Global State of Harm Reduction - 2021 Update* (Harm Reduction International, 2022). Specifically, we created binary country-level variables for the presence or absence: Harm Reduction Policy (e.g., explicit supportive reference to harm reduction in national policy documents); At least one syringe exchange program operational in country; and at least one opioid agonist therapy program operational in country.

### Site characteristics

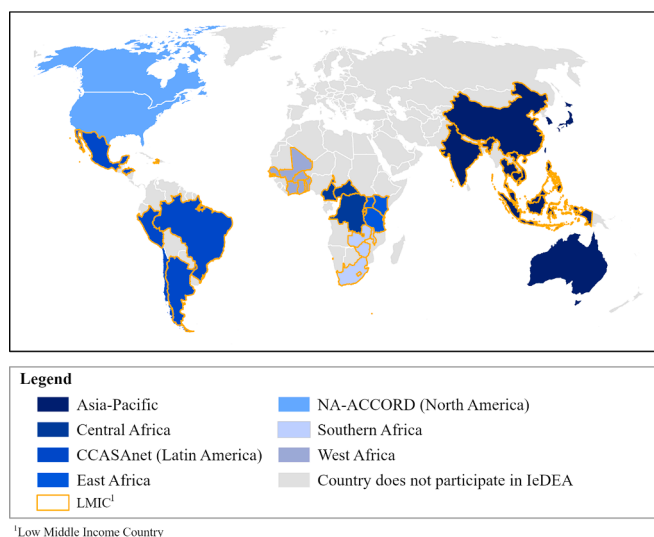
The survey collected self-reported rurality (urban/mostly urban, mostly rural/rural), facility type (health center, district hospital, regional, provincial or university hospital), and population served (adults, adults and children/adolescents, children/adolescents). World Bank Income designation of the country in which the site was located was captured as of July 2021.

## Analysis

Descriptive statistics summarize the prevalence of reported screening and treatment of AUD and SUD, by site characteristics, region, country income level, and country policies.

## Results

A total of 223 sites completed the 2020 site assessment survey from 41 different countries (Fig. 1). Of these 223, 68% (n=150) were urban or mostly urban, 38% (n=83) served only adults, 50% (n=111) served adults and children, 12% (n=26) served only children, 77% (n=172)



**Fig. 1.** Geographic distribution of countries with IeDEA HIV clinical sites that participated in the 2020 site assessment surveys.

were in low- and middle-income countries (LMICs). With respect to IeDEA region, 33% (n=74) were from East Africa and 23% (n=51) were from the Asia-Pacific, while 4% (n=8) were from CCASAnet (Latin America) and 6% (n=14) were from West Africa.

*Alcohol use disorder screening and treatment among HIV clinical sites*

Thirty-two percent (n=71) of sites reported screening HIV patients for AUD with a validated instrument, hitherto “AUD screening.” (Table 2) Overall, 23% (n=50) reported screening *all patients with HIV* with a validated instrument (as opposed to just screening specific subgroups). (Table 3) Reported AUD screening was similar in urban/mostly urban sites and mostly rural/rural sites. Sites that serve only children/adolescents less commonly reported AUD screening than sites that serve adults only or adults and children/adolescents (8% vs 40% and 32%). (Table 2) A larger proportion of high income country sites reported AUD screening than of LMIC sites (high income country sites: 49% vs low income country sites 8%). Differences in AUD screening varied by region. Seventy-six percent of NA-ACCORD (North America) sites reported AUD screening and half of sites in East Africa reported AUD screening. No sites in West or Central Africa reported AUD screening.

Of the 223 sites, 31% (n=69) reported both AUD screening and counseling, brief intervention, psychotherapy, or SBIRT; 8% (n=18) reported both AUD screening and detox hospitalization; and 10% (n=24) reported both AUD screening and medication. (Table 2) A larger proportion of urban/mostly urban sites reported both AUD screening and all three types of treatment (i.e., 1) counseling, brief intervention, psychotherapy, and SBIRT; 2) detox hospitalization; and 3) medication) than mostly rural/rural sites, though reports were similar for AUD screening and counseling, brief intervention, psychotherapy, or SBIRT. Sites that served only adults or adults and children/adolescents most commonly reported both AUD screening and treatment; very few sites that reported serving only children/adolescents reported both AUD screening and any of the three treatments. High income country sites most commonly reported both AUD screening and all three types of treatment.

In low-income countries (n=51), the only types of reported treatment were counseling, brief intervention, psychotherapy, or SBIRT. Regionally, a larger proportion of NA-ACCORD (North America) sites reported both AUD screening and all three types of treatment compared to sites in the other regions.

Among the 223 participating sites, alcohol use policy data was only available for 221 sites.(World Health Organization, 2019) 106 sites were located in countries that had a national alcohol policy, 219 sites were located in countries with excise taxes on beer, wine or spirits, 109 were located in countries with legally binding advertisement laws, 97 were located in countries with legally binding product placement laws, and 212 were located in countries with blood alcohol content (BAC) limits while driving. A larger proportion of sites located in countries with a national alcohol policy reported AUD screening for all HIV patient populations compared to sites located in countries without a national alcohol policy. (Table 3) Similarly, a larger proportion of sites located in countries with a national alcohol policy reported availability of all three types of treatments compared to sites located in countries without a national alcohol policy. The same trends were found for sites located in countries with legally binding advertisement laws compared to sites located in countries without legally binding advertisement laws.

*Substance use disorder screening and treatment among HIV clinical sites*

Twelve percent (n=27) of sites reported screening for SUD with validated instrument, hitherto “SUD Screening.” (Table 4) A larger proportion of urban/mostly urban sites (14%) reported SUD screening compared to mostly rural/rural sites (9%). A lower proportion of sites that serve only children/adolescents reported SUD screening compared

**Table 2**  
Site characteristics by availability of alcohol use disorder screening and treatment (N=223).

n (row %)	Screening	Screening &		
		Counseling, Brief Intervention, Psychotherapy, or SBIRT	Detox Hospitalization	Medication
Total (N=223)	n=71	n=69	n=18	n=24
Rurality				
Urban/ mostly urban (n=150)	48 (32)	47 (31)	16 (11)	22 (15)
Mostly rural/Rural (n=70)	23 (33)	22 (31)	2 (3)	2 (3)
Missing (n=3)				
Facility type				
Health Center (n=122)	40 (33)	39 (32)	11 (9)	16 (13)
District Hospital (n=15)	11 (73)	11 (73)	1 (7)	1 (7)
Regional, provincial, university hospital (n=79)	19 (24)	18 (23)	6 (8)	7 (9)
Missing (n=7)	1	1		
Population served				
Adults only (n=83)	33 (40)	32 (39)	12 (14)	19 (23)
Adults & Children (n=111)	36 (32)	35 (32)	6 (5)	5 (5)
Children only (n=26)	2 (8)	2 (8)	0 (0)	0 (0)
Missing (n=3)				
IeDEA region				
NA- ACCORD (North America) (n=29)	22 (76)	22 (76)	10 (34)	17 (59)
CCASAnet (Latin America) (n=8)	2 (25)	2 (25)	0 (0)	0 (0)
Asia-Pacific (n=51)	8 (16)	7 (14)	2 (4)	2 (4)
East Africa (n=74)	34 (46)	33 (45)	5 (7)	4 (5)
West Africa (n=14)	0 (0)	0 (0)	0 (0)	0 (0)
Central Africa (n=21)	0 (0)	0 (0)	0 (0)	0 (0)
Southern Africa (n=26)	5 (19)	5 (19)	1 (4)	1 (4)
Country income group				
Low Income (n=51)	4 (8)	4 (8)	0 (0)	0 (0)
Lower Middle Income (n=84)	33 (39)	31 (37)	5 (6)	4 (5)
Upper Middle	9 (24)	9 (24)	1 (3)	1 (3)

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Table 2 (continued)

n (row %)	Screening	Screening &		
		Counseling, Brief Intervention, Psychotherapy, or SBIRT	Detox Hospitalization	Medication
Total (N=223)	n=71	n=69	n=18	n=24
Income (n=37)				
High Income (n=51)	25 (49)	25 (49)	12 (24)	19 (37)

SBIRT=Screening, Brief Intervention and Referral to Treatment.

to sites that serve adults only or adults and children/adolescents (only children/adolescent: 4% vs adults only: 17% and adults and children/adolescents: 11%). A larger proportion of high income country sites reported SUD screening than LMICs sites (high income: 24% vs LMICs: 0-14%). Of note, none of the low-income country sites reported SUD screening. In regard to regional differences, NA-ACCORD (North America) sites most commonly reported SUD screening (38%) and no sites from West, Central or Southern Africa reported SUD screening.

Of the 233 sites, 11% (n=24) reported both SUD screening and counseling, brief intervention, psychotherapy, or SBIRT; 5% (n=10) reported both SUD screening and detox hospitalization; 5% (n=12) reported both SUD screening and medication. (Table 4) Additionally, three sites reported both SUD screening and syringe exchange program (two sites located in the East Africa Region (both in Kenya), and one located in the United States in the NA-ACCORD (North America) Region). A larger proportion of urban/mostly urban sites reported both SUD screening and all three types of treatment than mostly rural/rural sites. A larger proportion of sites that served only adults or adults and children/adolescents reported both SUD screening and treatment; few sites that reported serving only children/adolescents reported both SUD screening and any of the four treatments. High income country sites most commonly reported both SUD screening and all three types of treatment. Regionally, a larger proportion of NA-ACCORD (North America) sites reported both SUD screening and all three types of treatment compared to the other regions.

Among the 223 participating sites, substance use policy data were only available for 221 (Harm Reduction International, 2022). A total of 186 sites were located in countries that had a national harm reduction policy, 162 were located in countries that had at least one operation syringe exchange program, and 175 were located in countries that had at least one operational opioid agonist therapy program. A larger

proportion of sites located in countries with a harm reduction policy reported SUD screening for all HIV patients compared to sites located in countries without a harm reduction policy; however, the reported screening for specific sub-populations were similar. (Table 5) Reporting sites were located in NA-ACCORD (North America), Asia-Pacific, and East Africa. Similarly, a larger proportion of sites located in countries with a harm reduction policy reported availability of all three types of treatments compared to sites located in countries without a harm reduction policy. Of note, two sites located in countries (Brazil and China) without a harm reduction policy reported availability of counseling, brief intervention, psychotherapy or SBIRT and none of the sites located in countries without a harm reduction policy reported any other SUD treatment. The same trends were found for sites located in countries with at least one operational syringe exchange program and at least one operational opioid agonist therapy compared to sites located in countries without.

## Discussion

Integration of AUD and other SUD services within HIV clinical settings is a global priority to improve AUD, other SUD, and HIV outcomes for people with HIV (World Health Organization & Joint United Nations Programme on HIV/AIDS, 2022). Within this large international sample of HIV clinics from 2020, considerable gaps exist in the availability of AUD and other SUD services, particularly for LMICs. Screening with a validated instrument and treatment for both AUD and other SUD were largely unavailable within clinic sites serving children/adolescents populations, which serve patients well into adolescence (IeDEA Pediatric Working Group, 2013). Geographic disparities in AUD and other SUD service availability were also identified, with countries located in Central Africa, West Africa and Asia Pacific, reporting limited to no provision of AUD and other SUD services within HIV clinics, despite high burden of HIV and AUD or SUD (Lancaster et al., 2018).

Of the clinics that reported AUD and other SUD screening with a validated instrument, the majority reported that treatment was available within the same health facility. Offering validated screening in conjunction with treatment is promising and follows World Health Organization's recommendations for streamlining AUD and other SUD care services (World Health Organization & Joint United Nations Programme on HIV/AIDS, 2022). Integration and increased availability of services can directly improve clinical outcomes for people with HIV, such as slowing disease progression and improving viral suppression, as well as optimizing resources by leveraging care delivery system commonalities and facility sharing (Haldane et al., 2017). It is important to note that AUD and SUD treatment was only evaluated for sites reporting validated

Table 3

Availability of alcohol use disorder screening and treatment at HIV clinical sites by country-level alcohol consumption policies (N=221).

n (column %)	National* Alcohol Policy (n=110)	No National Alcohol Policy (n=111)	Legally Binding Advertisement laws (n=108)	No Legally Binding Advertisement laws (n=113)
Screening with validated instrument	36 (33)	35 (32)	41 (38)	30 (27)
Patient population screened with validated instrument				
All patients with HIV	26 (24)	24 (22)	26 (24)	24 (21)
Specific patient populations with:				
Possible symptoms of AUD	9 (8)	10 (9)	15 (14)	4 (4)
Therapeutic failure	5 (5)	10 (9)	12 (11)	3 (3)
Suboptimal ART adherence	6 (5)	11 (10)	12 (11)	5 (4)
Other	1 (1)	1 (1)	0 (0)	2 (2)
Screening with validated instrument and treatments available				
Counseling, Brief Intervention, Psychotherapy, or SBIRT	35 (32)	34 (31)	39 (36)	30 (27)
Detox Hospitalization	13 (12)	5 (5)	7 (6)	11 (10)
Medication	20 (18)	4 (4)	6 (6)	18 (16)
None	1 (1)	1 (1)	2 (2)	0 (0)

Global status report on alcohol and health 2018 did not include any data for Taiwan, China (1 site) or Haiti (1 site);

\*Canada (sites n=2), the Democratic of Republic of the Congo (site n=1), and India (n=3) had subnational policies.

SBIRT=Screening, Brief Intervention and Referral to Treatment.

**Table 4**  
Site characteristics by availability of both substance use disorder screening and treatment (N=223).

n (row %)	Screening	Screening &		
		Counseling, Brief Intervention, Psychotherapy, or SBIRT	Detox Hospitalization	Medication
Total (N=233)	n=27	n=24	n=10	n=12
<b>Rurality</b>				
Urban/ mostly urban (n=150)	21 (14)	19 (13)	9 (6)	11 (7)
Mostly rural/Rural (n=70)	6 (9)	5 (7)	1 (1)	1 (1)
Missing (n=3)				
<b>Facility type</b>				
Health Center (n=122)	13 (11)	12 (10)	5 (4)	7 (6)
District Hospital (n=15)	6 (40)	4 (27)	1 (7)	0 (0)
Regional, provincial, university hospital (n=79)	8 (10)	8 (10)	4 (5)	5 (6)
Missing (n=7)				
<b>Population served</b>				
Adults only (n=83)	14 (17)	14 (17)	7 (8)	10 (12)
Adults & Children (n=111)	12 (11)	9 (8)	3 (3)	2 (2)
Children only (n=26)	1 (4)	1 (4)	0 (0)	0 (0)
Missing (n=3)				
<b>IeDEA region</b>				
NA- ACCORD (North America) (n=29)	11 (38)	11 (38)	6 (21)	9 (31)
CCASAnet (Latin America) (n=8)	1 (13)	1 (13)	0 (0)	0 (0)
Asia-Pacific (n=51)	3 (6)	3 (6)	1 (2)	1 (2)
East Africa (n=74)	12 (16)	9 (12)	3 (4)	2 (3)
West Africa (n=14)	0 (0)	0 (0)	0 (0)	0 (0)
Central Africa (n=21)	0 (0)	0 (0)	0 (0)	0 (0)
Southern Africa (n=26)	0 (0)	0 (0)	0 (0)	0 (0)
<b>Country income group</b>				
Low Income (n=51)	0 (0)	0 (0)	0 (0)	0 (0)
Lower Middle Income (n=84)	12 (14)	9 (11)	3 (4)	2 (2)
Upper Middle	3 (8)	3 (8)	0 (0)	0 (0)

**Table 4 (continued)**

n (row %)	Screening	Screening &		
		Counseling, Brief Intervention, Psychotherapy, or SBIRT	Detox Hospitalization	Medication
Total (N=233)	n=27	n=24	n=10	n=12
<b>Income (n=37)</b>				
High	12 (24)	12 (24)	7 (14)	10 (20)
<b>Income (n=51)</b>				

SBIRT=Screening, Brief Intervention and Referral to Treatment.

screening, therefore, more sites may have treatment without validated screening and would not be reported with this analysis. These results may be underreporting treatment availability. Also, some clinic sites reporting only screening may have standardized referral processes. However, the quality and extent of screening strategies, referral procedures, and treatment availability should be further examined as barriers to linkage of care may exist.

Availability of AUD and other SUD services varied geographically and were less commonly reported in LMIC clinics when compared to high income country clinics. Limited availability of AUD and other SUD services in LMICs has been identified previously (Colledge-Frisby et al., 2023; Hejdra Suasnabar & Hipple Walters, 2020; Nakimuli-Mpungu et al., 2021; Parcesepe et al., 2020). The geographic distribution of other SUD services within HIV clinical setting is similar to prior reviews of services for people who inject drugs (Colledge-Frisby et al., 2023). Colledge-Frisby and colleagues also noted high and moderate coverage of services in Australasia, south Asia, and North America, while sub-Saharan Africa how the lowest coverage (Colledge-Frisby et al., 2023). Notably, the review did not examine coverage in HIV care settings, however, does also identify major gaps in service availability likely highlighting lack of political will for service expansion.

Several integration models have been utilized for implementing and evaluating approaches for integrating AUD and other SUD care within HIV clinical settings, however, many of these frameworks have been developed within high income country and may not necessarily translate to the unique contexts of LMIC (Haldane et al., 2017; Hitch et al., 2019). HIV clinics situated within LMIC settings are likely embedded within healthcare systems that are fragmented and under resourced, thus requiring contextually tailored integration models. Furthermore, health system governances may lack policy and legislative frameworks to promote AUD and other SUD services, for people with HIV and the general population (Crowley et al., 2017; Petersen et al., 2017). While this analysis was specific to a small number of IeDEA clinics within each country and thus limiting ability to examine intercountry policy differences, more sites reported AUD and SUD service availability located in countries with alcohol and drug policies. Notably, we identified AUD and other SUD policies were less common among LMICs than high income country which may widen the gap for integration within HIV care services.

Children and adolescents across the globe experience AUD and other SUD and thus have need for AUD and other SUD screening and treatment (Adejumo et al., 2015; Evangeli, 2018). Yet, reported AUD and other SUD services were uncommon within children/adolescent clinics, similar to the reports from IeDEA sites in 2014/2015 and 2017 (Parcesepe et al., 2020). The availability screening and evidence-based treatment programs for adolescents remain scarce, (Adams et al., 2021; Pilowsky & Wu, 2013) particularly for youth living with HIV (Gamarel et al., 2017; Mbuagbaw et al., 2012). The lack of investment in developing and implementing youth-friendly, appropriate screening and treatment programs for children/adolescents populations is a crucial gap in the field of alcohol and substance use and should be prioritized in future research efforts.

**Table 5**

Availability of substance use disorder screening and treatment at HIV clinical sites by country-level substance use policies (N=221).

n (column %)	Harm reduction policy (n=186)	No harm reduction policy (n=35)	≥ One syringe exchange program operational (n=162)	No syringe exchange program operational (n=59)	≥ One opioid agonist therapy operational (n=175)	No opioid agonist therapy operational (n=46)
<i>Screening with validated instrument</i>	25 (13)	2 (6)	25 (15)	2 (3)	25 (14)	2 (4)
NA-ACCORD (North America)	11 (6)	0 (0)	11 (7)	0 (0)	11 (6)	0 (0)
CCASAnet (Latin America)	0 (0)	1 (3)	0 (0)	1 (2)	0 (0)	1 (2)
Asia-Pacific	2 (1)	1 (3)	2 (1)	1 (2)	2 (1)	1 (2)
East Africa	12 (6)	0 (0)	12 (7)	0 (0)	12 (7)	0 (0)
West Africa	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
Central Africa	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
Southern Africa	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
<i>Patient population screened with validated instrument</i>						
All patients with HIV	20 (11)	1 (3)	20 (12)	1 (2)	20 (11)	1 (2)
Specific patient populations with:						
Possible symptoms of SUD	5 (3)	1 (3)	5 (3)	1 (2)	5 (3)	1 (2)
Therapeutic failure	4 (2)	1 (3)	4 (2)	1 (2)	4 (2)	1 (2)
Suboptimal ART adherence	3 (2)	1 (3)	3 (2)	1 (2)	3 (2)	1 (2)
<i>Screening with validated instrument and treatments available</i>						
Counseling, Brief Intervention, Psychotherapy, or SBIRT	22 (12)	2 (6)	22 (14)	1 (2)	22 (13)	2 (4)
Detox Hospitalization	10 (5)	0 (0)	10 (6)	0 (0)	10 (6)	0 (0)
Medication	12 (6)	0 (0)	12 (7)	0 (0)	12 (7)	0 (0)
None	2 (1)	0 (0)	2 (1)	0 (0)	2 (1)	0 (0)
<i>Screening with validated instrument and treatments available and syringe exchange program</i>						
Syringe exchange program	3 (2)	0 (0)	3 (2)	0 (0)	3 (2)	0 (0)

*Global State of Harm Reduction – 2021 Update* did not include data for the Republic of the Congo (2 Sites).

Regardless of age, more robust global integration of AUD and other SUD services in HIV clinical settings is hindered by a myriad of barriers (Parcesepe et al., 2018). These barriers include lack of training, screening tools, guidelines for providing AUD and other SUD screening and management, limited policy level support for integrated AUD, other SUD and HIV care, stigma associated with substance use, and limited clinical resources for alcohol and substance misuse and disorder treatment (Lancaster et al., 2018). HIV care clinicians can provide evidence-based AUD and other SUD management services without extensive specialized training, such as counselling-focused interventions for reducing alcohol or substance use (Haldane et al., 2017). However, successful integration may require a more robust referral system to primary care, mental health and social services to address multiple and diverse patient needs when treatment needs are not able to be successfully addressed within the HIV clinical setting (Durvasula & Miller, 2014; Haldane et al., 2017). For example, the absence of healthcare facilities dedicated to AUD and other SUD treatment and other support severely limits the ability of HIV care programs to link identified cases of AUD and other SUD to appropriate care. Many IeDEA HIV clinics located within urban areas would benefit from at least one substance use treatment center to facilitate linkage to care. Even in the absence of specialists, there are still evidence-based models of care for providing AUD and other SUD treatment to people with HIV (Haldane et al., 2017).

Enhancing the availability and integration of AUD and other SUD services in HIV clinical settings may require comprehensive policy frameworks with an emphasis on training and capacity building, data and monitoring systems, and community engagement (Haldane et al., 2017; Parcesepe et al., 2020). Policies supporting training programs integration of care for healthcare professionals and task-shifting can build skillsets as well as encouraging colocation of services, provide more compressive care, reduce stigma, and improve access for people with HIV with AUD and other SUD (Haldane et al., 2017). HIV funding bodies could incorporate opportunities to specifically enhance training and capacity for HIV care settings to integrate AUD and SUD availability, such as screening and referral procedures. This may be particularly

valuable in settings with co-occurring HIV and AUD and SUD epidemics. Establishing data and monitoring systems, that are supported through national policies, can provide timely empirical evidence to inform decision-making, improve service delivery, and ensure better clinical outcomes of those receiving care. Furthermore, fostering collaboration between government sections and community members may encourage policy development that more appropriately reflects community needs, while ultimately dismantling punitive systems based on stigma and discrimination that lead to poor outcomes for people with HIV and AUD and other SUD (Colledge-Frisby et al., 2023; Lancaster et al., 2022; Strathdee et al., 2015).

Assessment of validated screening and treatment of AUD and other SUD was limited to the 223 sites completing IeDEA's 2020 site assessment survey. Accordingly, comparisons are based on relatively small cell sizes. Further, all screening and treatment practices were self-reported, not independently verified for frequency or fidelity. Additionally, IeDEA sites are not globally representative and may be better resourced than HIV care facilities not participating in IeDEA. Therefore, our results may not be generalizable, and it is likely that screening and treatment for AUD and other SUD are even less commonly practiced across the globe.

Given the variability in screening for AUD and SUD, including invalid questions or tools, the site assessment survey gathered information on validated instruments to provide greater consistency on screening availability across multiple countries and regions. It is possible that more sites may screen for AUD and SUD, however, the quality and extent should be further examined with specialized AUD and SUD service delivery survey across IeDEA sites. We recognize that the screening instruments designated as "validated" are widely used globally, though it is possible that they have not been validated specifically among people with HIV or in the specific country where they are being employed. Finally, the country-level policy data, particularly for AUD, is slightly dated, though it is to our knowledge the most up-to-date global compilation of country-level policy data available. Regardless, as global data on the availability of integrated AUD and other SUD services into HIV care is extremely lacking, our findings offer needed descriptive data

on AUD and other SUD screening and treatment across the globe.

## Conclusions

Among the IeDEA sites surveyed in the 2020 site assessment, validated screening for both AUD and other SUD was limited, and treatment was even more scarce. We identified some key gaps AUD and other SUD service availability. Specifically, AUD and other SUD screening and treatment are less commonly reported in more rural settings compared to more urban settings and extremely limited among sites that serve only children/adolescents, sites in LMIC and sites in West, Central, and Southern Africa. Gaps were more severe for other SUD than for AUD. Targeted efforts to integrate AUD and other SUD screening and treatment into HIV care in such settings are urgently needed to address these disparities. Further, research into feasible implementation strategies for integrating AUD and other SUD screening and treatment into HIV care settings in resource-constrained regions is critical.

## Ethics approvals

IeDEA site assessments were reviewed by the Vanderbilt University Human Research Protection Program Health Sciences Committee and received a non-human subjects determination; as there is no human study subject and no consent or waiver of consent was needed.

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The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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