



Practical factors determining adolescent substance use treatment settings: Results from four online stakeholder panels

Sean Grant^{a,b,*}, Sarah B. Hunter^b, Eric R. Pedersen^b, Beth Ann Griffin^c

^a Department of Social & Behavioral Sciences, Indiana University Richard M. Fairbanks School of Public Health, 1050 Wishard Blvd, RG 6046, Indianapolis, IN 46202, USA

^b RAND Corporation, 1776 Main Street, Santa Monica, CA 90401, USA

^c RAND Corporation, 1200 South Hayes Street, Arlington, VA 22202-5050, USA

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ABSTRACT

Practical factors can significantly influence the setting, or level of care, where an adolescent receives substance use treatment. This study aimed to identify practical factors that stakeholders find most critical to consider when planning adolescent substance use treatment. We conducted online panels with four stakeholder groups: providers, policymakers, researchers, and parents. Stakeholders nominated, rated, and commented on the importance of 10 practical factors that could influence treatment setting decisions. We assessed consensus on the rated importance of practical factors using the RAND/UCLA Appropriateness Method. We thematically analyzed stakeholders comments to explain how they differentiated relative importance. 153 stakeholders (66 providers, 38 policymakers, 27 researchers, and 22 parents) identified continuity of care, coordination of care across service sectors, and quality of care as the practical factors of highest importance. Participants rated higher the practical factors they perceived to (1) trump clinical appropriateness as the reason for placing an adolescent in a given setting, (2) steer adolescents toward specific settings, or (3) steer an adolescent away from specific settings. Conversely, participants rated lower the practical factors they perceived (1) applicable to clinical intervention rather than treatment setting, (2) unrelated to initial recommendations, (3) relevant to any setting, or (4) applicable only to certain contexts and sub-populations. These findings help elucidate why stakeholders view certain practical factors as critical to consider in actual decisions about substance use treatment settings for adolescents. Future research should investigate how to incorporate these practical factors alongside clinical needs and treatment goals in placement criteria and treatment matching.

1. Introduction

Alcohol and illicit drug use are critical issues for the wellbeing of adolescents in the United States. Nearly one million adolescents aged 12 to 17 meet the diagnostic criteria for substance use disorders (SUDs) (Substance Abuse and Mental Health Services Administration, 2018). SUDs often lead to a variety of negative physical health, mental health, social, and financial consequences for adolescents and their families (Chassin, Hussong, & Beltran, 2009). Fortunately, a sufficient number of evidence-based interventions exist for adolescents; therefore, effective treatment options are potentially available to meet an adolescent's substance use treatment needs and goals (Winters, Tanner-Smith, Bresani, & Meyers, 2014). Moreover, numerous measures exist to assess the nature of an adolescent's substance use, consequences of use, important co-occurring issues, and overall treatment needs to help with

treatment planning and patient placement (Winters, Fahnhorst, Botzet, Nicholson, & Stinchfield, 2014). Findings from these comprehensive assessments are increasingly used to match adolescents with the treatment modalities and models offered in the most appropriate treatment settings to address the adolescent's individual needs across multiple dimensions (Fishman, 2014).

While advances in assessment instruments, treatment planning, and patient placement criteria are undoubtedly encouraging, practical factors are also highly influential in determining the treatment modalities, models, and setting to which an individual is recommended. The principal (and laudable) goal of patient placement criteria specifically is to facilitate the process of matching adolescents with the most clinically appropriate setting and services (Mee-Lee, 2013). Unfortunately, in reality, adolescents and their families often face restrictions in utilizing the most clinically appropriate setting and services. For example,

* Corresponding author at: Department of Social & Behavioral Sciences, Richard M. Fairbanks School of Public Health, Indiana University, 1050 Wishard Blvd, Indianapolis, IN 46202, USA.

E-mail addresses: spgrant@iu.edu (S. Grant), shunter@rand.org (S.B. Hunter), ericp@rand.org (E.R. Pedersen), bethg@rand.org (B.A. Griffin).

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previous literature suggests that limited availability, family finances, community resource constraints, and perceived stigma from others for seeking care are included as practical constraints and determinants of the actual treatment setting and services people may receive (McLellan & Meyers, 2004; Mensinger, Diamond, Kaminer, & Wintersteen, 2006; Wu, Blazer, Li, & Woody, 2011). Given that fewer than 20% of adolescents in need of SUD treatment actually receive it (Substance Abuse and Mental Health Services Administration, 2018), utilizing patient placement criteria may not be sufficiently effective or feasible due to these types of practical constraints. In addition to these issues, there is an increasing desire to improve treatment planning and patient placement for adolescents with SUDs by also considering the practical strengths of placements and programs, such as the quality, coordination, and continuity of care (Rieckmann et al., 2011; Sterling, Weisner, Hinman, & Parthasarathy, 2010). As patient placement criteria continue to evolve, further research on the role of practical determinants is needed.

This study aimed to contribute to the literature on strategies for effective adolescent treatment placement by examining the practical determinants that multiple stakeholder groups find most critical to be considered alongside clinical needs and treatment goals. Different stakeholders—such as providers, policymakers, researchers, and parents—could have different perspectives on these practical determinants given their positions within the adolescent substance use treatment ecosystem. We sought to identify which practical determinants these stakeholder groups found most critical, along with their rationales for judging the relative importance of the different practical determinants, to be considered alongside clinical needs and treatment goals during the patient placement process for adolescents with SUDs.

2. Material and methods

This study is part of a larger mixed-methods project to develop well-operationalized, empirically-supported adaptive interventions—sequences of decision rules for altering treatment levels of care (or settings) based on an adolescent's substance use treatment needs and goals (Grant et al., 2017). The data underlying the analyses in this paper come from the first project phase: an online Delphi process that aimed to assess stakeholders' views on the relative importance of specific factors when deciding the setting for an adolescent's substance use treatment (Grant, Pedersen, Hunter, Khodyakov, and Griffin, under review). We developed this manuscript in accordance with the American Psychological Association Journal Article Reporting Standards for mixed methods research (Levitt et al., 2018).

2.1. Participants

We sought adults (at least 18 years old) residing within the United States who identified with one of four stakeholder groups: (1) providers of adolescent substance use treatment; (2) policymakers involved in program planning at the clinic, health-system, state, or federal levels; (3) researchers of adolescent substance use treatment; or (4) parents of adolescents who have received substance use treatment. We sent invitation emails to potential participants identified through published research, professional organizations, adolescent substance use treatment centers listed in the Substance Abuse and Mental Health Services Administration (SAMHSA) Treatment Locator, and suggestions from the project's team and advisors. We also explicitly encouraged individuals whom we contacted to share our invitation email to any other potentially interested stakeholders (Sadler, Lee, Lim, & Fullerton, 2010). Based on methodological research on online Delphi processes, we aimed to recruit 20 to 40 participants per stakeholder group to form four panels of manageable sizes that still included a diverse, significant group of stakeholders (Khodyakov et al., 2011). Participants received a \$200 Amazon gift card for completing the entire process.

2.2. Design and procedures

We used SelectSurvey™ for stakeholder recruitment. Stakeholders who accessed the recruitment survey and indicated interest in the online modified-Delphi process completed a demographics questionnaire. We then used RAND's ExpertLens web-based system (Dalal, Khodyakov, Srinivasan, Straus, & Adams, 2011) to conduct an online modified-Delphi process. Over three rounds, participating stakeholders provided their views on the relative importance of specific individual needs for deciding the appropriate setting (i.e., outpatient, intensive outpatient, residential, or inpatient) and treatment outcomes (i.e., focus of treatment such as reduced substance use) for an adolescent's substance use treatment. In Round One, participants used 9-point Likert scales (1 = lower importance to 9 = higher importance) to rate the importance of 48 specific individual needs and 10 specific treatment outcomes that were taken from the Global Appraisal of Individual Needs–Initial (GAIN-I) instrument (Dennis, Titus, White, Unsicker, & Hodgkins, 2003). The individual needs items mapped onto the six dimensions of the American Society of Addiction Medicine (ASAM) Criteria, while treatment outcomes mapped onto the 10 SAMHSA National Outcome Measures (NOMs) domains. In Round Two, participants discussed Round One results in an anonymous and asynchronous online discussion forum moderated by the study team. In Round Three, participants re-rated individual needs and treatment outcomes in light of Round Two discussions.

On the final page of the Round One survey, we included an open-ended question for participants to discuss other non-clinical factors that are important to consider when deciding the substance use treatment setting for an adolescent. This question read as follows: “While our panel has focused on adolescent clients' clinical needs and goals, we appreciate that additional factors often influence decisions about the setting for an adolescent's substance use treatment. Please feel free to use the space below to discuss any other factors (besides an adolescent client's individual needs and treatment goals) that you think are important to consider when deciding the substance use treatment setting for an adolescent.” One author (SG) read, re-read, and condensed these suggestions into individual themes. SG then reviewed these suggested themes with two authors (SBH and ERP) who assisted in moderating the Round Two discussion. SG, SBH, and ERP reduced these suggested themes into a non-redundant list of 10 practical factors that could influence decisions about an adolescent's substance use treatment setting. SG, SBH, and ERP then shared this list with the larger project team, who assisted in clarifying the wording of the themes and their description prior to the launch of Round Three (see Table 1 for final list of practical factors and their descriptions). In Round Three, participants used the same 9-point Likert scales for the specific individual needs and treatment outcomes to rate the importance of these 10 practical factors. Participants could also use comment boxes below each practical factor to briefly clarify their ratings in a sentence or two. We provide illustrative quotes throughout the Results section that help describe the rationale for respondent ratings made in Round 3.

2.3. Data analysis

We assessed consensus on the relative importance of practical factors in Round Three using the inter-percentile range adjusted for symmetry (IPRAS) analysis technique from the RAND/UCLA Appropriateness Method (Fitch et al., 2001). This analysis technique first determines whether there is disagreement among participants within a panel on the importance of a given item; if an item has disagreement, it is considered to have uncertain importance. If an item has agreement, the tertile in which the median rating falls indicates the consensus decision on the importance of an item. That is, a median score between 1 and 3 indicates lower importance, 4 and 6 indicates moderate importance, and 7 and 9 indicates higher importance.

We considered practical factors to be of “higher importance” if they

Table 1
Practical factors to consider when planning substance use treatment for adolescents.

Label	Explanation
Ability to pay for treatment	The adolescent's and their family's ability to pay for and/or have insurance covering their recommended setting for substance use treatment
Access to treatment settings	The adolescent's and their family's access to and the availability of their recommended setting for substance use treatment (e.g., transportation options to outpatient settings, available beds in residential settings)
Client-centered treatment planning	Development of a treatment plan in collaboration with the adolescent and their family that is driven by a holistic consideration of the adolescent's needs, strengths, preferences, and values
Continuity of care	Development of a treatment plan that involves long-term, ongoing support for recovery from substance use disorder as a chronic issue
Coordination of care across service sectors	Development of a treatment plan that coordinates and integrates care across substance use, mental health, physical health, and social service providers
Quality of care	Development of a treatment plan involving evidence-based care provided by qualified professionals
Family involvement in treatment and recovery interventions	Development of a treatment plan that directly includes family members
Stigma of substance use	Impact of negative stereotypes about, and prejudices and discrimination toward, adolescents with substance use disorder
Harm reduction approach to treatment	Development of a treatment plan that prioritizes the reduction of negative consequences associated with substance use
Support for educational and vocational skills development during treatment	Development of a treatment plan that includes services specifically aiming to help adolescents progress in their educational and vocational attainment

reached consensus in all four panels (i.e., agreement according to IPRAS as well as a median between 7 and 9 in all panels). Among factors of “higher importance,” we considered those in which the median in all four panels was 8 or greater to be of “highest importance”. To explain how stakeholders differentiated the relative importance of practical factors, we thematically analyzed rationale comments by grouping all rationale comments for a given factor based on the numeric ratings to which they referred (Khodyakov et al., 2017). Overall, participants provided 1128 rationale comments in Round Three, with an average of 272 (SD = 154) comments per panel and 113 (SD = 10) comments per item. Three researchers (SG, SBH, ERP) independently reviewed and coded all qualitative comments inductively. SG then reviewed all coding results to identify themes that could be used to explain how stakeholders rated the relative importance of practical factors when deciding the substance use treatment setting for an adolescent (Bowling, 2009; Erlingsson & Brysiewicz, 2017).

3. Results

We approached and assessed 456 stakeholders for eligibility, invited 281 (62% of approached stakeholders) as eligible to participate in the online modified-Delphi process, and ultimately recruited 194 (69% of invited stakeholders) for the study. Of these 194 participating stakeholders (see Table 1), 153 (79%) rated practical factors in Round Three: 66 providers, 38 policymakers, 27 researchers, and 22 parents (see Tables 2 and 3). Participants who rated practical factors predominantly were female (71%), 35 to 54 years old (58%), had a bachelor's or master's degree (71%), were Caucasian/White (82%), and lived in urban communities (69%). Most participating stakeholders had experience with adolescent SUD treatment in outpatient settings (78%), for either cannabis (88%) or alcohol (86%).

3.1. Rating results

We found very little disagreement among our panels on the relative importance rating for each practical factor (Table 4). First, no factors were rated to have “uncertain importance” in any panel. Second, no factors were rated to be of lower importance to consider when deciding the substance use treatment setting for an adolescent. Only one factor—stigma of substance use—was considered of moderate importance, with full agreement by all panels on this ranking. All panels reached full consensus that the remaining nine practical factors are of higher importance to consider when deciding the substance use treatment setting for an adolescent. Of these, three factors reached our criteria for highest importance (i.e., every panel had a median of 8 or higher): continuity of

care, coordination of care across service sectors, and quality of care. Four factors of higher importance—access to treatment settings, family involvement in treatment and recovery interventions, support for educational and vocational skills development during treatment, and client-centered treatment planning—had a median of 8 in only three of the four panels. The remaining two factors of higher importance—ability to pay for treatment and a harm reduction approach to treatment—had a median of 8 in only one of the four panels.

3.2. Rationale for rating practical factors of higher importance

One rationale that participants provided for rating practical factors of higher importance was that, in reality, practical factors often trump clinical appropriateness when determining a treatment setting for adolescents. For example, participants often noted the practical importance of funding issues on what settings are actually chosen in reality: “Unfortunately, the ability to pay and the nature of coverage have everything to do with care available to individuals. This should not be the case. Everyone should have the same level of access to care. But we are far from that” (Parent09). This reality exists even when clinical appropriateness recommends otherwise: “These days most decisions frankly are driven by funding regardless of ... perceived clinical needs” (Provider10). These concerns remained even for families with insurance: “In reality even if the family has insurance, only intensive outpatient or residential treatment might be covered” (Policymaker74). In light of these realities, participants often recommended shared decision-making to ensure that practical factors are given due consideration rather than basing decisions on clinical appropriateness alone: “I think ... these items ... highlight the importance of making these decisions WITH rather than FOR the families, as they are ultimately the ones who have to deal with the logistics and costs of treatment” (Researcher22).

Participants also rated as highly important those factors that they believed point an adolescent to a specific setting. For example, quality of care in the actual settings available to an adolescent could lead to referrals to a setting different than those recommended in placement criteria: “could have a lower level of care if referring to evidence based care. For example studies have shown that evidence based OP [outpatient] or IOP [intensive outpatient] does as well or better than residential treatment” (Provider28). Stakeholders prefer identifying settings that demonstrate evidence-based practices by qualified professionals rather than relying solely on placement based on clinical needs, for example: “proven expertise and a substantiated success rate is always preferred” (Parent18).

Concerns about specific settings also influenced rating certain

Table 2
Demographics of participants who rated practical factors in Round Three.

Demographic	Total (n = 153)	Providers (n = 66)	Policy makers (n = 38)	Researchers (n = 27)	Parents (n = 22)
Gender					
Female	109 (71%)	52 (79%)	25 (66%)	19 (70%)	13 (59%)
Male	39 (26%)	12 (18%)	11 (29%)	7 (26%)	9 (41%)
Not reported	5 (3%)	2 (3%)	2 (5%)	1 (4%)	–
Age					
18–24	3 (2%)	3 (5%)	–	–	–
25–34	28 (18%)	17 (26%)	4 (11%)	4 (15%)	3 (14%)
35–44	46 (30%)	21 (32%)	15 (39%)	7 (26%)	3 (14%)
45–54	43 (28%)	15 (23%)	10 (26%)	9 (33%)	9 (41%)
55–64	24 (16%)	7 (11%)	7 (18%)	4 (15%)	6 (27%)
65 and older	7 (5%)	2 (2%)	2 (5%)	2 (7%)	1 (5%)
Not reported	2 (1%)	1 (1%)	–	1 (4%)	–
Education					
High school	1 (1%)	–	–	–	1 (5%)
Some college	4 (3%)	–	–	1 (4%)	3 (14%)
Associate's degree	4 (3%)	1 (2%)	1 (3%)	–	2 (9%)
Bachelor's degree	31 (20%)	11 (17%)	7 (18%)	2 (7%)	11 (50%)
Master's degree	78 (51%)	47 (71%)	24 (63%)	3 (11%)	4 (18%)
Professional degree	3 (2%)	2 (3%)	1 (3%)	–	–
Doctoral degree	31 (20%)	4 (6%)	5 (13%)	21 (78%)	1 (5%)
Not reported	1 (1%)	1 (2%)	–	–	–
Hispanic origin					
Yes	9 (6%)	3 (5%)	3 (8%)	3 (11%)	–
No	143 (93%)	62 (94%)	35 (92%)	24 (89%)	22 (100%)
Not reported	1 (1%)	1 (1%)	–	–	–
Race					
African American/Black	13 (8%)	6 (9%)	3 (8%)	2 (7%)	2 (9%)
American Indian/Alaska Native	1 (1%)	–	1 (3%)	2 (7%)	–
Asian	5 (3%)	2 (3%)	1 (3%)	–	–
Caucasian/White	125 (82%)	54 (82%)	30 (79%)	21 (78%)	20 (91%)
Hispanic, Latino, or Chicano	7 (5%)	2 (3%)	3 (8%)	2 (7%)	–
Native American	1 (1%)	1 (2%)	–	–	–
Other	1 (1%)	1 (2%)	–	–	–
Not reported	2 (1%)	1 (2%)	–	1 (4%)	–
Region of United States					
Northeast	34 (22%)	13 (20%)	9 (24%)	6 (22%)	6 (27%)
Midwest	38 (25%)	21 (32%)	7 (18%)	7 (26%)	3 (14%)
South	46 (30%)	18 (27%)	15 (39%)	3 (11%)	10 (45%)
West	34 (22%)	13 (20%)	7 (18%)	11 (41%)	3 (14%)
Not reported	1 (1%)	1 (2%)	–	–	–
Community					
Rural	46 (30%)	24 (36%)	12 (32%)	6 (22%)	4 (18%)
Urban	106 (69%)	41 (62%)	26 (68%)	21 (78%)	18 (82%)
Not reported	1 (1%)	1 (2%)	–	–	–

practical factors—particularly access and ability to pay—as higher importance. Participants discussed long waitlists and bed availability in residential or inpatient settings as reasons why a practical factor influences setting selection: “Location and accessibility is extremely influential. You may want a higher level of care for a youth but if no beds are available then a lower level of care is better than a waiting list, at least temporarily.” (Researcher03). In comparison, participants typically discussed transportation issues and facility proximity as reasons why a practical factor influences treatment placement decisions: “this has to be considered when making recommendations. Establishing that IOP is best for a client is great but if the client cannot realistically attend IOP's demands due to transportation issues, distance issues, etc. than recommending IOP is setting the client up to fail” (Provider92).

3.3. Rationale for rating practical factors of lower importance

One rationale that participants provided when rating specific factors as less important to determining an adolescent's setting for substance use treatment was that they believe the practical factor is more applicable to selecting clinical interventions than the treatment setting: “While this is important, it speaks to treatment planning, not necessarily determining level of care” (Policymaker63). For example, participants saw factors like stigma as more of a practical issue to address once an adolescent was in a treatment setting: “stigma is one of the most

powerful issues that youth face in sustaining recovery.... However, I'm not sure to what extent this influences determinations of treatment placement—it is more an issue to address in treatment and recovery support” (Researcher10). As such, practical factors meeting this criterion could be addressed when updating treatment plans rather than deciding an initial treatment setting: “I believe this is more important to address in treatment plan updating than initial tx [treatment] planning as many of those types of needs cannot be narrowed down or identified in initial treatment planning” (Provider45).

Participants also gave practical factors lower ratings when emphasizing that the factor may affect the ultimate decision but not the initial recommendation. For instance, while the final decision may be determined by practical factors, an option or list of options based on clinical appropriateness may serve explicitly as the initial default: “I was going to give this a higher rating but I believe one would suggest several options, from best to less so; one of the options should be doable” (Policymaker67). Stakeholders rating importance due to this rationale emphasized the importance of always making recommendations (at least initially) based on individual needs and treatment outcomes: “the appropriate level of care for the adolescent should always be recommended regardless of the family's ability to pay for the services or transportation/bed available issues and attempts should be made at helping the family to gain funds to grant access to the needed placement and to gain access to transportation, and case management

Table 3
Participant experiences with adolescent substance use treatment.

Stakeholder experience	Total ^a	Providers (n = 66)	Polymakers (n = 38)	Researchers (n = 27)	Parents (n = 22)
Treatment settings					
Outpatient	119 (78%)	53 (80%)	33 (87%)	23 (85%)	10 (45%)
Intensive outpatient	66 (43%)	26 (39%)	15 (39%)	12 (44%)	13 (59%)
Residential	56 (37%)	17 (26%)	15 (39%)	11 (41%)	13 (59%)
Inpatient	18 (12%)	2 (3%)	9 (24%)	5 (19%)	2 (9%)
Other	2 (1%)	–	–	–	2 (9%)
Substances used by adolescents					
Alcohol	132 (86%)	65 (98%)	34 (89%)	24 (89%)	9 (41%)
Amphetamines	94 (61%)	47 (71%)	25 (66%)	15 (56%)	7 (32%)
Cannabis	135 (88%)	65 (98%)	35 (92%)	23 (85%)	12 (55%)
Cocaine	91 (59%)	45 (68%)	24 (63%)	15 (56%)	7 (32%)
Hallucinogens	88 (58%)	44 (67%)	25 (66%)	13 (48%)	6 (27%)
Heroin	82 (54%)	39 (59%)	26 (68%)	15 (56%)	2 (9%)
Inhalants	76 (50%)	43 (65%)	23 (61%)	9 (33%)	1 (5%)
Methamphetamine	78 (51%)	41 (62%)	23 (61%)	12 (44%)	2 (9%)
Over-the-counter medicines	95 (62%)	51 (77%)	28 (74%)	13 (48%)	3 (14%)
PCP	45 (29%)	17 (26%)	16 (42%)	12 (44%)	–
Prescription medicines	106 (69%)	52 (79%)	31 (82%)	16 (59%)	7 (32%)
Sedative, hypnotic, or anxiolytic	71 (46%)	40 (61%)	20 (53%)	8 (30%)	3 (14%)
Synthetic cannabis	96 (63%)	50 (76%)	31 (82%)	12 (44%)	3 (14%)
Tobacco/nicotine	108 (71%)	58 (88%)	29 (76%)	13 (48%)	8 (36%)
Other	16 (10%)	7 (11%)	2 (5%)	4 (15%)	3 (14%)
Adolescent ages					
Early adolescence (11–13 years old)	51 (58%)	46 (70%)	N/A	N/A	5 (23%)
Middle adolescence (14–16 years old)	73 (83%)	60 (91%)	N/A	N/A	13 (59%)
Late adolescence (17 years and older)	67 (76%)	63 (95%)	N/A	N/A	4 (18%)
Treatment referrals methods					
Mandated (justice system, school)	70 (80%)	63 (95%)	N/A	N/A	7 (32%)
Recommendation by service provider	4 (18%)	N/A	N/A	N/A	4 (18%)
Request of family	14 (64%)	N/A	N/A	N/A	14 (64%)
Self-initiated	3 (14%)	N/A	N/A	N/A	3 (14%)
Other	1 (5%)	N/A	N/A	N/A	1 (5%)
Treatment financing					
Public insurance	68 (77%)	60 (91%)	N/A	N/A	8 (36%)
Private insurance	48 (55%)	36 (55%)	N/A	N/A	12 (55%)
Out of pocket	36 (41%)	25 (38%)	N/A	N/A	11 (50%)
Other	21 (24%)	19 (29%)	N/A	N/A	2 (9%)

Notes: “N/A”: not applicable for this stakeholder group.

^a Percentages in “Total” column based on sample size of applicable stakeholder groups.

services should be provided while the client is waiting for the bed” (Provider11).

Lower ratings by participants were accompanied by statements that the practical factor was not applicable to setting determination. For instance, “There is considerable stigma about substance use, but less relevant in choosing the appropriate treatment setting” (Parent17). Additionally, participants also explained that some practical factors are relevant to any setting and therefore have no bearing on the specific setting chosen: “This is the ideal way to do treatment planning because

it values the individual and his/her family as participants (and not recipients).... However, it should be available in all settings, so I'm not ranking it high here in terms of choosing a treatment setting” (Researcher42).

3.4. Moderators of the importance of practical factors

Participants also noted that the importance of a practical factor may be moderated by contextual issues. For example, a practical factor

Table 4
Panel consensus on the identified practical factors.

Item	Providers			Polymakers			Researchers			Parents		
	Median	IQR	Decision	Median	IQR	Decision	Median	IQR	Decision	Median	IQR	Decision
Continuity of care	8	7–8	+	8	7–9	+	8	7–9	+	8.5	8–9	+
Coordination of care across service sectors	8	7–8	+	8	8–9	+	8	7–9	+	8	7–9	+
Quality of care	8	7–9	+	8	7–9	+	8	7–9	+	8	8–9	+
Access to treatment settings	8	7–8	+	8	6–9	+	8	7–9	+	7.5	7–8	+
Family involvement in treatment and recovery interventions	7	6–8	+	8	7–9	+	8	7–8	+	8	7–9	+
Support for educational and vocational skills development	7	6–8	+	8	7–8	+	8	6–8	+	8	7–8	+
Client-centered treatment planning	8	7–9	+	8	7–9	+	7	6–9	+	8	7–9	+
Ability to pay for treatment	7	5–8	+	7	3–9	+	7	5–9	+	8	6–8	+
Harm reduction approach to treatment	7	6–8	+	7	6–8	+	8	5–9	+	7	6–8	+
Stigma of substance use	6	4–7	±	5.5	4–7	±	5	5–7	±	6	5–7	±

Notes: IQR = inter-quartile range. “+” indicates higher importance (median score of 7–9, without disagreement), “±” indicates moderate importance (median score of 4–6, without disagreement), and “–” indicates lower importance (median score of 1–3, without disagreement). No panels found any factors to be of lower importance.

might be less important in urban areas and more important in rural locations: “in the rural areas, there are not enough clients to do an outpatient program” (Provider110). A practical factor might also be more important in a particular setting if that setting itself is in a particular location, such as a school-based outpatient setting: “In some areas this might be more relevant than in others. For example, in a school setting placing a client in an after-school group as opposed to an individual session with a counselor might lead to the rest of the school knowing the client is receiving services. If the clients substance use is not an imminent safety risk for themselves right now it might be worth considering for level of care purposes to start with individual sessions rather than group” (Provider92).

Similar to location, certain sub-populations also mitigated participant ratings about the importance of practical factors to treatment setting decisions. For instance, availability might be particularly important for younger populations: “depending on age, [it] can be hard to find suitable setting” (Parent12). Certain practical factors might also be more important for adolescents with more severe substance use: “This for me would depend on the severity of the substance use disorder and other factors that could potentially contribute successes and challenges of the adolescent.” (Policymaker49). The socioeconomic status (SES) of a particular adolescent's family can also significantly influence the relative importance of practical factors: “for families with fewer resources this may be a determining factor. For families of higher SES, then the range of options, including level of care, location, transportation, including ability to visit if the youth is in residential treatment, is much less constrained” (Policymaker10).

4. Discussion

We engaged 153 providers, policymakers, researchers, and parents in online panels to identify and rate the relative importance of practical factors that could influence decisions about an adolescent's substance use treatment setting. Of 10 practical factors, stakeholders rated continuity of care, coordination of care across service sectors, and quality of care as the practical factors of highest importance. Results indicated that access to treatment settings, family involvement in treatment and recovery interventions, support for educational and vocational skills development during treatment, and client-centered treatment planning were the practical factors stakeholders believed to be of next highest importance. Ability to pay for treatment and a harm reduction approach to treatment were deemed of high importance by all groups but not as highly as the aforementioned factors. All stakeholders groups found stigma of substance use as moderately important when deciding on the treatment setting for an adolescent's substance use.

According to a thematic analysis of their rationale comments for their ratings, participants considered practical factors to be of higher importance when they perceived a practical factor to: (1) trump clinical appropriateness as the reason for placing an adolescent in a given setting, (2) steer an adolescent toward a specific setting, and (3) steer an adolescent away from specific settings. Conversely, participants rated lower the practical factors they perceived (1) applicable to clinical intervention rather than treatment setting, (2) unrelated to initial recommendations, (3) relevant to any setting, or (4) applicable only to certain contexts and sub-populations.

The following should be considered when interpreting the results of this study. While we recruited a large sample in relation to online panel methods, we did not randomly sample from the populations of interest. Our findings are most reflective of stakeholder sub-samples who have Internet access, have available time to respond, and are based in the US. Our sample is also predominantly urban, Caucasian/White, and experienced with adolescent substance use treatment for cannabis or alcohol in outpatient settings. As is typical with Delphi processes, participants across all stakeholder groups rated most factors highly; due to this restricted range, we emphasize that findings discriminate the relative importance of a set of practical factors that all are important.

5. Conclusions

We believe that our study supports efforts to better incorporate practical factors into patient assessment, treatment matching, and placement tools for adolescent substance use (McLellan & Meyers, 2004; Mensinger et al., 2006; Rieckmann et al., 2011; Sterling et al., 2010; Wu et al., 2011). Currently, stakeholders (parents and caregivers in particular) face challenges in getting credible information on these practical factors when recommending a specific placement for a specific adolescent patient. Further efforts are needed to develop trusted sources that provide valid, independent, and standardized data on these metrics. Such trusted sources of information could facilitate explicitly incorporating practical factors alongside clinical needs and treatment goals (rather than as an afterthought) into placement recommendations. As these practical factors can be extremely determinant of treatment placements, their incorporation in patient placement criteria and tools is in line with the goal of matching individual adolescents with the most appropriate setting and services, as the placement will be based on a comprehensive assessment of all important factors that influence the placement in reality (Fishman, 2014; Mee-Lee, 2013; Winters, Fahnhorst, et al., 2014). Our findings can help identify which practical factors to include in patient placement or matching tools as well as help elucidate why stakeholders might view certain practical factors as critical to consider in specific instances of real-world shared decision-making about the most appropriate substance use treatment setting for an adolescent. Future research should continue to investigate the role of practical determinants in planning adolescent SUD treatment and how precisely to incorporate these practical factors alongside clinical needs and treatment goals in into patient assessment, treatment matching, and placement tools.

Acknowledgments

Ethics approval

Study procedures were determined exempt from review by the RAND Human Subjects Protection Committee (ID 2015-0268-AM01).

Author contributions

SG, ERP, SBH, and BAG conceived of the study. All authors contributed to study design and data collection. SG, ERP, and SBH analyzed the data. SG wrote the first draft. All authors contributed to and approved the final draft.

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Data availability statement

The protocol, data, and research materials used to collect data for this study can be found at <https://osf.io/m7uas/>.

Author access to data

SG had full access to all the data in the study and takes responsibility for the integrity of the data and the accuracy of the data analysis.

Previous presentation

Preliminary findings from this study were presented at the 2017 College on Problems of Drug Dependence Conference, and the 2017 and 2018 Addiction Health Services Research Conference.

Declaration of competing interest

SG's spouse is a salaried employee of Eli Lilly and Company, and owns stock. SG has accompanied his spouse on company-sponsored travel. All other authors declare that they have no competing interests.

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