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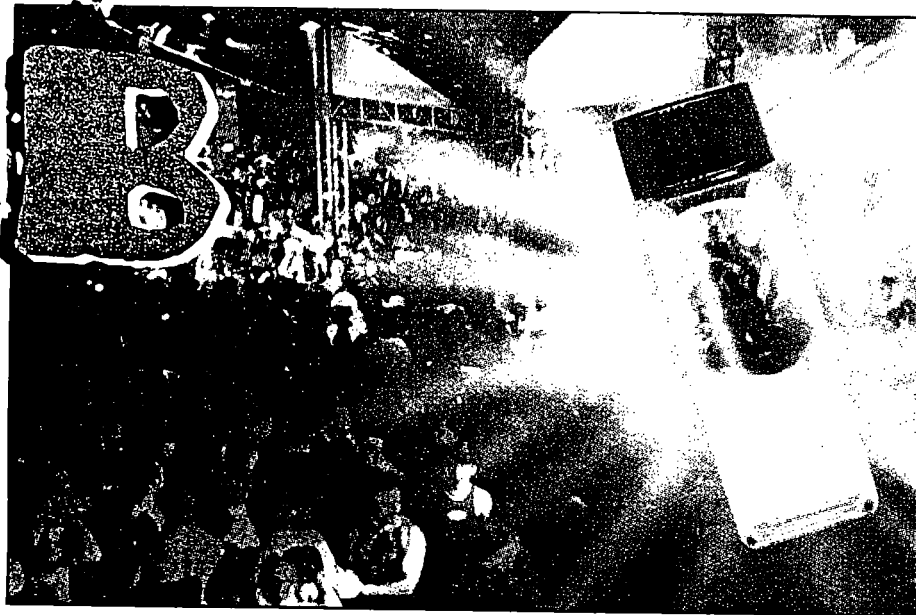
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ISSUES -
Addiction -
Gay Men

GHB



The latest alphabet drug shut down a Hotlanta party and led one local club to take a public stand against its use

by LAURA BROWN

When the third ambulance carrying a overdosing party-goer pulled away from the Sheraton Colony Square Hotel, Atlanta authorities reportedly pulled the plug on Hotlanta River Expo's signature Saturday night party.

Hotlanta officials said the Atlanta police department shut down the party, scheduled to end at 7 a.m. Sunday morning, about 45 minutes early after at least three participants had to be taken to the hospital.

"They have a 'three strikes, you're out' type of policy," said Prentice Satterfield, vice president of sales and sponsorships for Hotlanta River Expo. "It was GHB ... the most god awful nasty drug known to man."

Known on the party circuit as "G," gamma hydroxy butyrate has had a presence at raves and the gay circuit for several years, but anecdotal evidences suggest

its usage here in Atlanta may be increasing.

While its affects on individual may vary, GHB packs a mean wallop. A study by researchers at the University of Florida suggests the drug can result in physical addiction, with long-term users reporting withdrawal symptoms lasting three to 12 days including insomnia, anxiety and tremors.

Usually a clear, almost odorless liquid, GHB can be mixed with water or other drinks and is almost impossible to detect. Users say they like it for the cheap, quick high it produces. But especially mixed with alcohol, GHB earns one of its other street names—Grievous Bodily Harm—causing extreme nausea, convulsions, respiratory distress, coma and even death.

(See "ABCs of GHB," page 20).

As Backstreet Atlanta summed things

up in a new ad for the 24-hour nightclub, "GHB Kills!"

Even some users who say they enjoy the drug acknowledge its danger when used in excess or in combination with other substances, including common over-the-counter allergy medications and sleep aids.

"The major, major, major concern is alcohol," said John, a local Ph.D. student in immunology and microbiology who uses GHB recreationally. "All of the people that I know who have any experience with it say 'I can't do that because I'm drinking,' or 'I can't drink because I'm doing it.' You have to be really careful."

"I have an acquaintance who died last year in Ft. Lauderdale from taking Valium and GHB, so it does happen."

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Legislating gay lives

Congress voted on a barrage of anti-gay bills in the last two weeks, and four out of five passed. But gay leaders still proclaim a net gain for gay rights



TUES. ELECTION RESULTS

Lt. Governor (Democrat)

With 96 percent of precincts reporting at press-time, Sen. Mark Taylor topped Sen. Mary Margaret Oliver with 58.6 percent of the vote to her 41.4 percent. Oliver, a longtime gay community ally, received an early endorsement from the Georgia Equality Project's political action committee. Taylor did not complete a GEP-PAC survey or interview with the group.

Lt. Governor (Republican)

With 96 percent of precincts reporting, moderate-turned-conservative Mitch Skandalakis led conservative Clint Day by a very slim margin—51.8 to 48.2 percent. Skandalakis declared victory, but the votes will automatically be recounted if the margin ends up less than one percent.

Cobb County Commission District 3 (Republican)

In a major win for gay rights supporters, attorney and civic leader Sam Olens ousted incumbent Cobb County Commissioner Gordon Wysong.

Wysong, architect of Cobb's infamous anti-gay resolution, took 41.6 percent of the vote to Olens' 58.7 percent. Before the run-off, Wysong sent out mailers branding Olens "a Democrat disguised as a Republican" who

"told a homosexual publication that he supports special rights for gays and lesbians and would change Cobb County's non-discrimination policy to include sexual orientation."



Gordon Wysong loses in Cobb

Fulton County Commission At-large Post 2 (Democrat)

GEP-PAC's endorsed candidate, Dean Chronopoulos, lost to Karen Elaine Webster by a two-to-one margin.

GHB

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Hotlanta: policing the parties

Among the gay party circuit's numerous events, last weekend's Hotlanta River Expo has worked to be known as the "party with a purpose," with this year's proceeds earmarked for AID Atlanta.

Those community-minded ideals made the early end of Saturday's "Platinum Playground" party hard for Hotlanta officials to digest, Satterfield said.

"The weekend was a big success, and anytime someone comes in and does this [overdoses on GHB], it makes us all look bad," he said. "It's not what we're there for—we want to show that you can throw a great party, meet people from all over the country, enjoy yourself and do good for the community. This puts a damper on that."

Andy Philhower, vice president of events for Hotlanta River Expo, said the music stopped and lights came on in the Colony Square ballroom about an hour before the sold-out, 3,500-plus participant party was scheduled to stop.

"At least three times, ambulances had to be called for 'G' casualties, from people who were I guess doing too much too quick, being stupid, careless and irresponsible," Philhower said. "The police could have shut down the party earlier than they did, but they kept giving us that one more time, and the last one was the icing on the cake."

Capt. N. Grissom of the Atlanta Fire Department confirmed that the department's medical units responded to three calls about overdoses at the Sheraton during the hours of the Hotlanta party.

While Philhower could not cite an exact number of off-duty police officers and other security officers present at the party, he said Hotlanta River Expo complied with all regulations regarding ratios of security staff to patrons. He said Hotlanta staff did what they could to care for those who "partied too hard," but placed blame for the problems squarely on the individuals involved.

"The event Saturday night was so well attended that you can't control what any individual is going to do or not do," he said. "It's no secret that at a lot of circuit events, drug use is going on—that's part of the animal. ... The hotel and the police are not upset with River Raft, because they know that we can't control everything people are going to do."

Philhower said that after the problems Saturday night, Hotlanta had "immediate signage for all of the other events stating that there would be no GHB tolerance," but he acknowledged that the committee could not really prevent the drug's usage. "Hell, if you want to drink a bottle of poison, we can't stop you, and you can expect to reap the benefits of that ... but it doesn't create a very 'party' atmosphere when you see people being physically carried out by their friends, and it looks like they're dead."

GHB was a bigger problem at this year's Hotlanta River Expo than any other year,



'No GHB' buttons on Backstreet staffers (front row) Mark Robertson, Tim Olsen, James Foster, Robb Kibler and (back row) general manager Michael Fritts and Doug Youngblood.

Satterfield said, and while the event has always had a policy against drug use, board members will evaluate this year's Expo to determine whether other specific measures can be taken.

Hotlanta officials will also consider working with Grady Hospital's ambulance service to get the names of those who were taken to the hospital due to GHB, Philhower said. "The idea is to write them a personal letter about how they jeopardized a community event whose goal is to have a good time and make money for organizations that really need the support," he explained.

Backstreet: facing the problem

One popular Atlanta nightclub is also taking a stand against GHB. Instead of the usual show schedules and mind-warping graphics, the Backstreet advertisement in this week's *Southern Voice* issues a serious warning to patrons: "Backstreet does enforce a zero tolerance policy on illegal drugs. Anyone found using or possessing illegal drugs will be turned over to the police and prosecuted to the fullest extent of the law."

"Basically all of these people were going into comas, although luckily no one has died here from GHB. It's awful," said Michael Fritts, Backstreet's general manager. "We're taking a stand against it because I want the club to be a fun, safe place, and going into a coma isn't a fun." Backstreet employees are also wearing "No GHB" buttons to publicize the policy.

Fritts said he "honestly couldn't answer" the number of times ambulances have been called to Backstreet to help patrons overcome by GHB, "but it happens quite a lot. It's been going on for a while, but it's getting worse." Although some club-goers obviously use the drug, Fritts said he has heard only positive response over his very public anti-GHB stand.

"We just started with the buttons on Thursday, and the reaction has been very positive. I've even had employees from other clubs wanting to buy the buttons," he said. "We did have an incident where we had to call an ambulance Friday night, and we gave the driver a button, and he came back later asking to get them for the staff at Grady [Hospital]."

Several members of Atlanta's club scene contacted by *Southern Voice* said they had used illegal drugs at Backstreet and other bars in the past, but Fritts said the club has always had policies prohibiting the use of those substances, although they are now focusing on GHB.

"We have signs posted saying that your bags will be searched, and we've been doing that since the Otherside was bombed," Fritts said, but the

focus against GHB does not mean Backstreet officials will be "digging through compacts and pockets" and peeing over bathroom stalls.

"GHB has gotten so widespread that my security guards have gotten very good at detecting if someone is on it before they even come in," he said.

Circuit fans: hearing the message?

While John, the Ph.D. student, said he has no plans to stop using GHB, other circuit party attendees said they stay away from the drug.

Mary, a lesbian who reported trying most of the drugs popular on the party circuit, said her experience with "G" was markedly different than John's.

"Imagine being drunk, and the room is just spinning and spinning, and you can't even walk. That's what G is like," she said. "I've done crystal and coke and K and Ecstasy, and G is nothing like that—it really fucks you up. You really can't even walk."

Still, Mary said she probably will not take GHB in the future, only "because there's just too much homemade shit going around compared to two years ago when I did it."

According to information provided by the Georgia Bureau of Investigation, GHB can be produced using only butyrolactone, a common industrial solvent found in paint removers, and sodium hydroxide, found in Drano and similar products.

Law enforcement officials and GHB users warn that small differences in production can produce big—and dangerous—differences in the drug's effect.

Milton, a veteran circuit party fan, said he is no "drug virgin," but knowing the ingredients and watching too many people "fall out" from GHB convinced him not to try the drug.

"I never would put what is basically a lye acid in my body, first of all," he said. "And I've seen what happens—the shaking, the nausea, the throwing up I've brought too many people out of the G-hole, and if I'm sitting in a bar, I can tell when someone is getting ready to slide."

"I think more people than not will stay with GHB," John said, "because it's very cheap, very clean and very easy."

John estimated that a two to five hour supply of GHB costs about five to six dollars per vial, while an equivalent dose of Ecstasy costs about \$20-\$30. Cocaine currently costs about \$80 per half-gram, "which is easy to go through in an evening," while ketamine ("K") costs about \$50 for a gram that will last about 2-3 days, depending on use.

THE ABC'S OF GHB

Also known as: "G" on the gay party circuit. Other reported street names include Grievous Bodily Harm, Georgia Homeboy, gamma-OH, Somatomax PM. Chemical name is gamma hydroxy butyrate.

Background: GHB was sold over the counter as a pill or powder in health food stores as a supplement for weight loss and sleep before it was banned by the FDA in 1990. In the United States, it has been researched as a treatment for narcolepsy, a condition that produces brief periods of intense sleep. GHB is found naturally in the central nervous system and is thought to act as a neurotransmitter.

Common form: Usually a clear, odorless liquid mixed with water. Can also be found as a white powder that is dissolved in liquid before taken.

Desired effects: A quick, cheap high. Users report feelings of "out of body" euphoria, increased sex drive and lowered inhibitions.

Extreme effects: Insomnia, anxiety, tremors, nausea, confusion, massive central nervous system depression resulting in coma, seizures, respiratory arrest and death. Serious side effects occur especially when GHB is combined with alcohol or other drugs, including over-the-counter allergy and sleep aid medications.

Felony status: GHB is a Schedule I controlled substance in Georgia, like other drugs, including heroin, cocaine and LSD. Purchasing or possessing GHB is a felony punishable by two to 15 years in prison. Manufacturing, distributing or possessing GHB with an intent to sell is a felony punishable by five to 30 years in prison on a first offense.

*Sources: Centers for Disease Control, Georgia Bureau of Investigation, staff reports



BACKSTREET ATLANTA

The Management and Staff of Backstreet would like to extend our appreciation to our valued members for their patronage.

In order for us to provide a fun and safe environment that everyone can enjoy we must remind everyone that Backstreet does enforce a
**"ZERO TOLERANCE POLICY
ON ILLEGAL DRUGS."**

Anyone found using or possessing illegal drugs will be turned over to the police and prosecuted to the fullest extent of the law.

Thank you for your cooperation,
Backstreet Atlanta

GHB KILLS!

845 PEACHTREE STREET (REAR) • 404-873-1986 • ALWAYS OPEN AND POURING
MEMBERSHIP REQUIRED • MEMBERSHIPS AVAILABLE

FACSIMILE TRANSMISSION

CDC

To: <u>BRAD AUSTIN</u> Name <u>Office Nat'l AIDS Policy</u> Organization <u>202-632-1090</u> Phone <u>202-632-1096</u> Fax	From: Centers for Disease Control & Prevention DHAP: Intervention Research & Support Behavioral Intervention Research Branch 1600 Clifton Rd NE, Mailstop E-37 Atlanta, GA 30333 David Purcell (404) 639-8982 (404) 639-8874 (fax) e-mail: dhp8@cdc.gov Please call if retransmission is necessary.
<u>3/21/98</u> Date	<u>26</u> Number of Pages (including this page)

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Here's the most recent
draft

David

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Running Head: Intertwining Epidemics

**Intertwining Epidemics:
A Review of Research on Substance Use and Abuse
among Gay Men and Their Connection to the AIDS Epidemic**

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DRAFT: DO NOT QUOTE OR DISTRIBUTE**Abstract**

This paper reviews 1) the literature on substance use and abuse among gay men, 2) the data that test whether connections between substance use and abuse and high risk sexual behavior exist among gay men, and finally, 3) ways that HIV intervention activities might address the effects of substance use on high risk sexual behavior. Based on these reviews, research agendas are proposed to advance the understandings of the determinants of the use and abuse of drugs by men who have sex with men as well as to disentangle the effects of substance use on risk-taking behaviors for HIV infection.

Key Words :

gay men, men who have sex with men, substance use and abuse, HIV prevention, HIV/AIDS

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Substantial academic, professional, and public health interest exists about the nature of the complex relationships between substance use or abuse and sexual behaviors that place gay men at high risk of transmitting HIV. The purpose of this paper is to explore this topic by examining: 1) the extent of substance use and abuse among gay men; 2) the scientific data about the associations between substance use and abuse and high-risk sexual behavior among men who have sex with men; and 3) what types of prevention activities might work for gay men who have sex under the influence of drugs and alcohol. Directions for future research, treatment, and prevention efforts will also be suggested.

Before addressing these issues, however, it is necessary to define some core terminology and concepts that will be used here. First, the intersections between sexual behavior, orientation, and identity must be understood. While a person's sexual behavior often corresponds to their sexual orientation and identity, this is not always the case. For example, men who engage in sexual behavior with other men do not necessarily identify as gay, even though some or all of their sexual behavior is "homosexual." Most broadly, this paper will address "men who have sex with men" (MSM), regardless of their actual sexual orientation or identification. Thus, a man who is married to a woman or identifies himself as heterosexual, but who also has sexual relationships with men, would be defined as a "MSM" as would a self-identified gay man. While much of the research in this area has been done with men who identify as gay, some attempts are being made to understand MSM more broadly, and researchers are interested in differences in risk behaviors, if any, between these two types of men. Unless otherwise noted, we will use "MSM" to refer to the broader category of men who have sex with men, regardless of sexual identity and "gay" to refer to men with a social identity as a man who has sex with other men.

A second factor when examining MSM who use or abuse substances concerns the route of administration for drugs (injection versus non-injection). MSM who also inject drugs are an important group to study because they engage in both of the principal risk behaviors by which HIV is spread in the United States. While this paper will address MSM who are both injecting and non-injecting drug users, our primary focus is sexual risk behavior. Since studies examining sexual risk behavior among MSM have focused on non-injecting drug users, conclusions about MSM injectors are necessarily tentative. A third issue concerns the drug(s) used by MSM. Many substance users and abusers, including MSM

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users, rather than having only one drug of choice, are polysubstance users (Stall and Wiley, 1988). Thus, it is often not possible to develop separate conclusions for groups such as "alcoholics" or "cocaine users," as if these men only used one drug, although when possible, such distinctions will be made. For example, MSM who use methamphetamine may be at particular risk for sexual transmission of HIV, regardless of what other drugs they use.

A final definitional issue regards the concepts of substance "use" versus "abuse." A variety of standards and definitions have been used to distinguish substance use and abuse in both treatment settings and research, and detailed exploration of this topic is beyond the scope of this paper. While it is difficult to find universally agreed upon definitions of use and abuse, it is worth noting that drug or alcohol "abuse" is generally distinguished from "use" by measurable physical, social, or psychological harm. If a study being discussed in the paper specifically recruited a particular type of participant or classified them in a particular manner, then the terminology utilized by the authors will be adopted.

SUBSTANCE USE AND ABUSE AMONG GAY MEN

When researchers first began examining questions about substance use and abuse among gay men, many assumed that rates would be substantially elevated compared to heterosexual men, perhaps as a result of the difficulties of coping with a stigmatized social identity in combination with the development of a new identity within a sub-culture that has been historically bar-focused. Over the past 25 years, there has been an ongoing debate about the extent of substance abuse among gay men. It is important to briefly discuss this controversy because it still affects both the rhetoric and the research in this area. Most of the early researchers focused on alcohol use and abuse, which will be examined first. Only more recently have researchers addressed the use and abuse of other substances.

Alcohol Use and Abuse by Gay Men

Research on alcohol abuse published in the 1970's and early 1980's supported assumptions of elevated rates of alcohol abuse among gay men, finding that about one-third of gay men sampled were alcohol abusers (Fifield et al., 1977; Lohrenz et al., 1978; Morales and Graves, 1983; Saghir and Robins, 1973). If this rate of alcohol abuse was true, then gay men had one of the highest rates among any subgroup in the United States, and a rate considerably higher than the 10% usually ascribed to the

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general population. However, these early studies suffered from a number of methodological flaws, not the least of which was that participants were recruited primarily or exclusively from gay bars.

With the advent of the AIDS crisis in the mid-1980's, more representative samples of gay men were examined (Martin, 1990a; McKirnan and Peterson, 1989b; Stall and Wiley, 1988), and questions about substance use were commonly included. While these studies also suffered from methodological limitations (Bux, 1996), they found rates of alcohol abuse among gay men that were more similar to heterosexual men, suggesting that the earlier estimates for gay men were probably exaggerated. For example, in a household-based sample of gay and heterosexual men drawn from the same neighborhood in San Francisco, Stall and Wiley (1988) found that alcohol use patterns were not significantly different between gay men and their heterosexual male neighbors, although the prevalence of heavy drinking was higher for gay men (19%) than for heterosexual men (11%). A community study using psychiatric criteria found no difference in the rates of alcohol abuse and dependence disorders between gay and heterosexual men (Martin, 1990a).

Based on his review of the alcohol abuse literature on gay men over the past 25 years, Bux drew the following conclusions: 1) gay men do not appear to be at higher risk for heavy drinking or alcohol abuse than are heterosexual men; 2) gay men appear less likely to abstain from alcohol than heterosexual men; 3) there has been a decrease in the rates of drinking and drinking problems in the gay community that may be due to the AIDS crisis and changes in community norms about drinking. However, Bux noted that methodological problems continue to confound the interpretation of recent epidemiological data on alcohol use and abuse among gay men. These problems include using atypical samples (e.g., primarily urban dwelling, higher socioeconomic status men), ignoring racial and ethnic differences and variations in sexual identity (e.g., bisexuals), and failing to account for relationship status (as prior research shows that persons in a couple have lower substance abuse rates than single people).

Research on alcohol use and abuse among gay men has been conducted in the context of an important historical fact: bars have functioned as *de facto* community centers and have been one of the very few safe place for gay men to gather in many parts of the United States. It is interesting that even within this social context, cross-sectional rates of current alcohol abuse do not appear to differ between

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gay and heterosexual men, although rates among gay men may have been higher historically. Further research is needed to determine if lifetime rates of alcoholism may be higher for gay men.

The Use of Other Non-Injected Drugs by Gay Men

Several trends emerge in the literature on non-intravenous drug use among gay men. Stall and Wiley (1988) note that: 1) many drug-using gay men are polydrug users, more so than heterosexual men using may different kinds of drugs either in combination or sequentially; 2) there may be certain kinds of drugs that are particularly popular among gay men; poppers and amphetamines are often described in this way; and 3) although gay men as a group use many different kinds of drugs over the course of a year, few men seem to be characterized by frequent use of any one kind of drug at any given point in time (in ways that might suggest abuse). Thus, drug use among gay men is more variable such that, over time, many different drugs are used on specific occasions, but few men use any one drug to excess. Finally, both quantitative and qualitative data suggest that many drugs have a strong sexual meaning for gay men and that understanding the use of such drugs by gay men must take the sexual meanings of these drugs into account (see Reback, 1997 for a description of methamphetamine use and gay men).

In their household-based San Francisco study comparing gay and heterosexual men, Stall and Wiley (1988) found that the prevalence of specific kinds of drug use was significantly higher for gay men for a variety of substances including marijuana, amyl nitrate (poppers), MDMA (ecstasy), psychedelics, barbiturates, and amphetamines. Similarly, McKimman and Peterson (1989b) found higher rates of marijuana, cocaine, and popper use among gay men compared to heterosexual men. However, when Stall and Wiley (1988) examined measures of weekly drug use (suggestive of substance abuse and/or dependence) prevalence of use fell below 6%, with the exception of poppers (at 15%) and marijuana (at 38%) (Stall and Wiley, 1988). Thus, gay men appear to use a wider variety of substances, but do not necessarily use these drugs at a level suggestive of widespread substance abuse.

Substance abusing gay men are also characterized by use of a wide variety of drugs. Paul and his colleagues (1996) found in their sample of men admitted to a gay-identified substance abuse clinic in San Francisco that nearly all of the clients used alcohol, over half used marijuana or stimulants, and at least 20% reported use of poppers and sedatives/opiates. Upon intake, these men reported use of alcohol for

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a mean of about 50 out of the last 90 days and a mean use of 3.4 drugs (including alcohol). Men in this sample who were more sexually active were more likely to continue use, rather than completely eliminate, their substance use patterns over time.

In summary, it is clear that gay male populations are characterized by substantial drug use. Such use raises the possibility that gay men are especially vulnerable to problematic use. The question of whether there are greater lifetime prevalence rates of drug abuse among gay men, compared to heterosexual men, still remains open. This question -- as well as understanding the other health and social effects attributable to substance use -- deserves careful consideration.

The Use of Injected Substances by Gay Men

Relatively little research has focused on men who both have sex with men and who also inject drugs (Battjes, 1994) although there is clear evidence of the use of injecting drugs among MSM from the reported risk behaviors of people with AIDS. Of AIDS cases reported among MSM, 11% also reported injecting drug use, and 20% of all male injecting drug users with AIDS also reported sex with men (CDC, 1996). This proportion of the AIDS caseload is much greater than the proportion of men who were found to engage in both sex with other men and who inject drugs in a large national AIDS survey research (Catania et al., 1992), suggesting that MSM injectors are at particularly high risk for HIV infection.

Only a few studies have focused on the sexual and drug use behaviors of MSM who inject drugs (Crofts et al., 1995; Deren et al., 1996; Ross et al., 1992; Stall and Ostrow, 1989; Waldorf, 1994). A few other studies have reported data on the MSM injectors who happen to be in their samples (Lemp et al., 1994; Osmond et al., 1994; Vlahov et al., 1994). This second group of studies typically suffers from small sample sizes, since most of these analyses depend on finding MSM in a sample of injection drug users or injection drug users in a sample of gay men (See Stall and Ostrow, 1989, for a commentary on sampling issues with this group of men). Most studies find that the drugs of choice for MSM injectors include cocaine, amphetamines, either alone or in combination with heroin, and more rarely, heroin alone.

Given the sampling problems and small number of studies making generalizations about MSM injectors is problematic. Nonetheless, most studies that have reported data on MSM injectors find higher rates of HIV infection and sexual risk taking behaviors compared to gay men who do not inject or

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other male injectors (Crofts, et al., 1995; Deren, et al., 1996; Stall and Ostrow, 1989). Studies find few differences in injection risk behaviors between MSM injectors and other men who inject (Ross, et al., 1992; Deren, et al., 1996). Thus, in terms of HIV prevention, it appears that sexual rather than injection risk behaviors may explain the differences in HIV seroprevalence typically found between these two groups. For example, among MSM injectors in Melbourne and Sydney (n=169), HIV seroprevalence was higher than rates found generally among gay men in these two cities (Crofts, et al., 1995). About 15% of the sample reported unprotected anal intercourse with two or more partners in the past month. In another Australian study (Ross, et al., 1992), both gay and bisexual men were more likely to have both insertive and receptive anal intercourse without a condom than heterosexual injectors, although there were no differences in injection risk behaviors between these two groups. In a 15-city American study of injection drug users and crack smokers (Deren, et al., 1996), gay/bisexual male injectors and crack smokers were more likely to be HIV infected than other men who shared the same drug risks. Gay/bisexual men also had more sexual partners and were more likely to trade sex for money or drugs. Again, no differences in injection drug risk were detected. Finally, Stall and Ostrow (1989) reported that gay male injectors were highly likely to be HIV seropositive in the household-based San Francisco Men's Health Study [ADD the %]. Furthermore, although gay male injectors only accounted for [X%] of the total sample, they accounted for about 20% of all high risk acts for the transmission of HIV.

Clearly, there is a need for more research on MSM injectors to try to understand their substance use, and their HIV risk from both sexual and injection behaviors. Other important research includes learning more about how MSM injectors access substance abuse treatment and the processes by which long term sobriety is achieved, examining the effects, and ways to avoid the effects, of long terms substance use, and understanding other infections transmitted through high risk sexual behaviors and/or needle sharing (notably the long term health effects of hepatitis C infection).

Changes in Rates of Substance Abuse Over Time

The issue of changes in substance abuse rates over time is of theoretical interest in public health because it represents the interface between historical process and epidemiology. By understanding more about the power of cultural change to affect individual behavior, we may learn a great deal about how to

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design effective community-level interventions. Insights gained in the study of community-level variables that appear to lower substance use can be important tools in the design of future community-level substance use prevention programs. Thus, study of any reductions in substance use patterns exhibited among gay men over the past 20 years can be an important case study towards the goal of learning how to improve the efficacy of community-based substance abuse prevention programs.

A recent review concluded that alcohol use and related health problems had decreased over time among gay men (Bux, 1996), although rates are at least as high as those found in the heterosexual community. To adequately address whether changes in substance abuse patterns have occurred over time among gay men, three separate effects should be considered: 1) aging (i.e. changes in substance abuse patterns exhibited within the same cohort as the men age); 2) cohort membership (i.e. changes in substance abuse patterns exhibited by gay men who came of age during the 1960s as opposed to those who came of age during the 1980's); and 3) history (i.e. changes in substance abuse patterns among gay men that may have occurred as a result of historical events such as the AIDS epidemic). To offer a simple summary statement for a reasonably complicated literature, there is some evidence that all three kinds of effects may have contributed to reduced rates of substance use among gay men.

Regarding age, there is a well-established decline in substance use as a concomitant of older age among the general population. Some studies have found a similar, though less substantial decline for gay men, or a different pattern of substance use among older gay men. For example, Stall and Wiley (1988) found that the prevalence of substance use declined with increasing age for both gay and heterosexual men in their household-based sample, but the "older" (45+) gay men had substance use profiles that more closely resembled younger gay men than their heterosexual male neighbors. Thus, many substance abusing gay men may "age out" of heavy use (Remien, et al., 1995). Such life course differences in patterns of substance use may have both direct and indirect impacts on health outcomes for gay men.

There is also evidence for reductions in substance use behaviors across generations (cohorts) of gay men. Crosby and his colleagues (1997) conducted an analysis of data from the 1984 and the 1992 San Francisco Men's Health Studies. Both cohorts included men aged 25-29 and similar measures of substance use, allowing for a direct comparison of levels of drug/alcohol use that controlled for age across

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the two "generations." Results revealed significant declines in use of alcohol, marijuana, poppers, cocaine, barbiturates, heroin, amphetamines and ethyl chloride use among young gay men from 1984 to 1992. An increase was found only for ecstasy and no differences were found for hallucinogens. These authors cautioned, however, that while rates of substance use appear to have declined between these two cohorts, substance use is still a problem among gay men, and it is related to HIV seroconversion among this population.

Finally, evidence for reductions in substance use and abuse due to the effects of history (e.g, the AIDS epidemic) is found in a series of papers based on AIDS cohort data (Martin et al., 1990; Ostrow et al., 1990). The reductions within these studies were so substantial and rapid that neither the potential confounding of aging nor cohort effects seem to be likely explanations for the decline. The remaining possibility -- the effects of history -- has been widely accepted as the primary explanation for the decrease in substance use among these cohorts of gay men, with specific focus on the effects of the AIDS epidemic (Remien et al., 1995).

While it appears that there has been a decrease in substance abuse among gay men over time, it is important not to minimize substance abuse as a problem for gay men. Because it is generally acknowledged that American society has an alcohol and drug abuse problem, then it is also fair to assume that gay men and lesbians also have health and social problems attributable to substance abuse, despite this apparent historical decline to levels more like those of heterosexual men.

Research Directions on Substance Use and Abuse Among Gay Men

Although the scientific literature on the epidemiology of substance use among gay men has grown substantially as a result of research on AIDS, some basic questions remain unanswered. First, it is necessary to expand the literature beyond the examination of quantity and/or frequency of substance use to measuring the social or medical problems that gay men experience in connection with substance use. Conversely, understanding the reasons and processes that gay male substance abusers use to resolve their problematic use (that is, a health rather than a disease focus) might teach us a great deal about how to design more effective treatment regimens. Both of these issues suggest the need to understand issues that may govern substance use among gay men across the lifespan. A third important question concerns

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identifying the predictors of heavy substance use and problematic use among gay men, because, with the exception of a few studies (e.g., McKirnan and Peterson, 1989c), investigators have focused much less on identifying the characteristics of those people who are most likely to use substances in a dangerous or problematic way. Fourth, research on substance abuse issues among gay populations has focused almost entirely on white (and male) populations -- thus we know very little about whether the epidemiological profile of gay men of color is the same or different than that found among white gay men. A final question is why changes in substance use patterns appear across generations of gay men (as well as other populations), which potentially help researchers in designing effective community-level interventions.

To date, our understandings of the epidemiology of substance use among gay men have been driven by an AIDS agenda. The questions outlined here -- not directly relevant to explaining the spread of HIV or the natural history of AIDS -- are nonetheless very important to prioritizing public health agendas for MSM. They are also centrally important to understanding how to design effective primary prevention programs for both substance abuse and for HIV.

THE RELATIONSHIP BETWEEN SUBSTANCE USE AND SEXUAL ACTIVITY

In this section, we first discuss the relationship between the use of substances and sexual activity and the impact of treatment on this relationship. Then, we will review data on the relationship between substance use and high-risk sexual activity and explore the implications of these data.

The Role of Alcohol and Drugs in Sexual Behavior

Substance use and sex have been linked throughout Western history and across many cultures in literature, art, and music. Some drugs are said to act as "aphrodisiacs" because of their direct pharmacological effects on sexual arousal or performance (e.g. poppers and "ecstasy"). The cognitive expectations about the effects of a drug, as well as the learned use of a drug, also can be powerful factors in determining whether a drug is used in a sexual situation (Ostrow, 1996). It has been argued that substance use and sex may be particularly linked in the gay community for a number of reasons including that: 1) the center of gay community life, historically, has been gay bars; 2) engaging in same-sex behavior is breaking a social taboo that may initially be made more permissible through the use of substances; 3) men who first have sex with other men under the influence may continue to repeat this

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sexual pattern as part of their sexual socialization; and 4) certain drugs such as poppers, "ecstasy," and methamphetamine are used by gay men specifically to enhance sex (Lewis and Ross, 1995). While some of these reasons may apply to heterosexuals, the combination of these factors is unique to gay men.

For gay men who have used substances repetitively to decrease anxiety, being able to express their sexuality after starting substance abuse treatment and/or "recovery" from substance abuse can be difficult. Not only do such men need to focus on ending a problematic substance use pattern, but they must also learn new social skills around meeting other gay men and having sex while sober. Many gay men in recovery also report that having sex brings up many drug using "cues" and urges, especially for men whose sexual expression typically also included the use of substances. For such men, relearning how to have sex while sober becomes a challenge. One slogan used in drug treatment to express this idea is "new playmates, new playgrounds." This statement is intended to capture the concept that men who are used to meeting other men in bars or other high substance use settings and having sex with other substance using individuals, may have difficulty figuring out how to express their sexuality in new settings and with new types of people.

One of the strategies that gay men in recovery use includes finding new, non-bar, social settings in which gay men can meet. Thus, in many American urban settings, cafes are becoming new gay male meeting grounds, especially for men in recovery. New social networks that are accepting of the need for gay men to avoid the use of alcohol or other drugs are often constructed in such settings. Other men join clubs organized around activities that do not include substance use (e.g., athletic contests, political or religious groups). Conversely, one of the ways to measure the extent to which alcohol and other forms of substance use permeate gay male culture is to observe the strategies that gay men in recovery must adopt to find ways to participate in gay culture without risking their new-found sobriety. For such men, access to bar-centered gay male sexual culture becomes more abbreviated, but strong ties to more specific social groups are often formed instead.

The Relationship Between Substance Use and High Risk Sexual Behavior

Over the past decade a series of empirical papers have been published about whether gay men who combine alcohol or drugs with sexual activity are more likely to engage in high risk sexual behavior

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(see Leigh & Stall, 1993 for a review of this literature). If so, interventions to prevent the combination of substance use and sexual behavior might effectively prevent the continuing spread of HIV infection. However, the findings from this literature have been inconsistent, with some studies finding a statistical relationship between drug or alcohol use during sexual activity and the likelihood of participating in high risk sexual activity (Crosby et al., 1997; Davidson et al., 1992; Martin, 1990b; McKirnan and Peterson, 1989a; McKusker et al., 1990; Ostrow et al., 1990; Siegal et al., 1989; Stall et al., 1986) while other studies have not found such evidence for alcohol alone (Bolton et al., 1992; Weatherburn et al., 1993).

One possible cause of the inconsistencies may be the way in which questions measuring sex under the influence are posed. Leigh and Stall (1993) divided research on this issue into three types of studies: 1) those measuring associations between overall measures of alcohol or drug use and likelihood of having high-risk sex (global measures); 2) those examining associations between drug use behavior in the context of sexual behavior (situational measures); and 3) those focusing on the associations between high risk sex and substance use at the level of specific sexual event (event measures). In general, global and situational measures tend to detect a positive association between patterns of substance use and high risk sexual behavior. Most of these studies report cross-sectional correlations between various substance use patterns and the likelihood of having high risk sex. Under this kind of research design, substance use could cause sexual behavior, sexual behavior could cause drug use, or some third variable (such as having a "risk-taking personality", or some other characteristic) could cause both substance use and high risk sex separately (Kalichman, et al., 1996). However, event-level measures, which are most useful for determining whether a causal relationship exists between substance use and risky sexual behavior, generally do not report a positive association between patterns of substance use and high risk sexual behavior (Leigh and Stall, 1993).

The inconsistency of these findings has given rise to controversy over whether there is a link between alcohol or drug use and high risk sex, and whether some other variables underlie any observed relationship between substance use and high risk sex. At the extreme, some people have argued that if it cannot be established that substance use causes unsafe sex, then interventions should not address this purported connection. It is important to note, however, that there is actually a second question focusing

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on the relationships between substance use and HIV among gay men. The first, which has already been discussed examines the relations between measures of self-reported sexual behavior and substance use, and the contradictory findings from this research are difficult to interpret. The second question examines the relationship between measures of self-reported substance use and HIV seroconversion itself.

The findings from the series of studies on self-reported substance use and HIV seroconversion show that gay men with higher levels of non-injection substance use at baseline are more likely to become infected with HIV over time (Buchbinder et al., 1994; Burcham, et al., 1989; Chesney et al., 1998; Penkower et al., 1991; Silvestre et al., 1989). Because there is little or no error in measuring HIV status, HIV seroconversion is a more valid as well as medically meaningful outcome variable in trying to understand the divergent findings discussed previously. Thus, it may be important to try to understand why the literature linking substance use and self-reported high risk sexual behavior yields contradictory findings. However, the studies that demonstrate a link between higher levels of non-intravenous substance use and later HIV infection may be most relevant to considering whether the relationship between substance use and high risk sexual behavior is an appropriate target of AIDS prevention efforts.

New Research Directions for the Relationship Between Substance Use and Sexual Behavior

Regarding future research agendas, a series of methodological experiments and the development of new measurement approaches might resolve some of the questions that make the behavioral literature so difficult to interpret. For example, one notable problem with event level measures is that as a general rule, one set of sexual events (say the most recent safe and unsafe event) is measured for an entire sample without regard to whether the sexual events in question were typical for a respondent. If non-random recall and/or reporting bias exists in the selection of sexual events by respondents within a sample, then the event level measures of the association between substance use and high risk sexual behavior are flawed. Assessing whether the assessed sexual event(s) are "typical" is one way to tease this apart.

Statistical reanalysis of existing data sets might resolve some of the methodological problems in this field, such as whether there are important historical time period effects. For example, a sensitivity analysis could determine whether the association between substance use and high risk sex was easier to detect earlier in the epidemic, when levels of substance abuse were also higher.

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Another research agenda would be to collect data from a set of careful outcome evaluations of the effectiveness of AIDS prevention that employ different strategies to attempt to weaken the link between substance use and high risk sexual behavior among gay men. This research should also be designed not only to determine whether particular approaches are "effective", but also to test the theory underlying these distinct intervention approaches.

It is also plain that qualitative contributions to the study of this relationship are long overdue. Inductive, qualitatively-derived theory building may raise specific hypotheses that will prove invaluable in explaining the cluster of correlations that have already been detected in the relationships between substance use and risky sexual behavior as well as the cluster of studies where correlation is notably absent. For example, qualitative research could be used to test hypotheses about men engaging in different sexual behaviors depending on whether they and/or their partner have used substances.

HIV PREVENTION FOR GAY MEN WHO HAVE SEX UNDER THE INFLUENCE

It is unlikely that a single HIV prevention intervention or message will change the behavior of all gay men who have sex under the influence of alcohol or drugs. There is undoubtedly a place in HIV prevention for a variety of different approaches to HIV prevention, ranging from individual- to community-level interventions. Interventions specially designed for specific populations might be expected to be particularly efficacious (e.g., separate interventions for MSM who use injection drugs versus those who use non-injection drugs at weekend dance parties).

The next sections will address HIV prevention for men in substance abuse treatment versus those who are not in treatment. The vast majority of substance users and abusers are not in treatment and have not been in treatment recently (Grant, 1997). Thus, it is important to design interventions for men who vary widely in their substance use and willingness to stop abusing substances. There are other distinctions besides in-treatment versus out-of-treatment that we will not address here but that may be important when tailoring interventions or prevention messages. These include sexual orientation or identity (e.g., MSM versus bisexual versus gay identified men), drug of choice (e.g., methamphetamine versus alcohol), and route of drug administration (e.g., injecting versus non-injecting drug use).

HIV Prevention for MSM in Substance Abuse Treatment

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Because there is strong evidence that gay men who use more drugs or who drink heavily are more likely to become HIV seropositive than gay men who do not, the central question then becomes: how can we best design AIDS interventions for gay men that into account take drugs and alcohol use? One approach to intervening in the relationship between HIV seroconversion and heavy alcohol or drug use would be to focus our intervention efforts among gay men who are or recently were heavy substance users. For example, rates of recent high risk sex reported by gay men in substance abuse treatment approached those recorded before the AIDS epidemic was discovered (Paul et al., 1993; 1994).

HIV prevention among men in treatment can be thought of from at least two perspectives. First, substance abuse treatment itself can be thought of as an HIV prevention strategy because effective treatment can reduce both direct and indirect risks of HIV. Evaluations of a variety of substance abuse treatment programs have shown their overall effectiveness in improving the lives of participants across a broad array of domains (McLellan et al., 1994; see also Academy for Educational Development (AED), 1997). These improvements have been shown to lead to decreased injection drug risk behaviors (AED, 1997). Studies on treatment outcome have been less likely to look at changes in sexual behavior as a treatment outcome (see Shoptaw and Frosch, this issue). For gay men, it may be particularly important to focus on sexuality during treatment, because some men report never having had sex with a man without being high and because, for some men, gay identity and substance use are tightly connected (Reback, 1997).

Second, beyond the effect of treatment itself, substance abuse treatment programs provide the opportunity to implement specific HIV prevention programs for substance users, and potentially for their sexual partners and broader social networks. While MSM in treatment represent only a small fraction of substance users, they can potentially provide access to a larger network of sex partners and friends who use or abuse substance but who are not currently in treatment (AED, 1997). In addition, because substance dependence is thought of as a potentially chronic condition needing repeated treatment, some portion of men currently in treatment (and in "recovery") are likely to relapse. This reality has led to some conflict over teaching "harm reduction" approaches as part of HIV prevention programs in treatment. Some substance abuse specialists think that injection drug users in treatment

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should be taught the importance of using a clean needle every time they inject, and as a less desirable alternative, how to clean needles, because of the possibility that they will relapse (a harm reduction approach). In 1997, the United States Public Health Services (USPHS) published a bulletin indicating that health professionals should inform injection drug users that using a sterile syringe is safer than reusing syringes, including those that have been disinfected with bleach (USPHS, 1997). Others argue that such a prevention messages violates one of the core values to be learned during treatment; the importance of abstinence from drugs and alcohol. Thus, they would argue against any discussion of future needle use and safest needle use practices during treatment.

Research is necessary to evaluate new intervention strategies to reduce sexual risk-taking among gay men undergoing substance abuse treatment (and drug risk taking among MSM injectors). Evaluations should be framed to capture more than the simple question of whether the intervention reduced sexual risk taking; rather the evaluation should be designed so that we understand more about the predictors of sexual risk-reduction and how to translate these understandings into the design of effective interventions. For example, studies with injectors show that HIV prevention intervention are more successful at reducing drug-risk behavior than sexual risk behaviors (Battjes et al., 1995; Lewis & Watters, 1994; Wiebel et al., 1996), suggesting that we must learn more about how to reduce sexual risk behavior. In addition, the issue of introducing harm reduction approaches in treatment should be examined. This ongoing work can be expected to improve not only the quality of AIDS prevention services for substance abusing gay men, but it may also improve the quality of substance abuse treatment for gay men as well.

HIV Prevention for Out-Of-Treatment MSM

As noted earlier, most substance using and abusing MSM are not currently in treatment, even if they may have had treatment in the past. There has been debate regarding the actual message(s) to present in HIV prevention programs for men who are actively abusing substances. Some have argued that it is dangerous to present messages that enforce the general perception that one is not responsible for high risk sex if one is drunk or high, because men may then get intoxicated *in order* to have high risk sex (Bolton et al., 1992; Stall et al., 1986). Today, many interventions for substance using men use a

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harm reduction approach that encourages men to reduce their sexual risk in the context of continuing to use substances. For example, prevention packets have been designed for MSM who use methamphetamines and have sex, with the primary message being that the men should plan their drug use so that the tools for safer sex are available and easily accessible. Other approaches to HIV prevention have only recently been attempted, such as interventions to raise levels of gay community awareness of the health costs of amphetamine use or specific outreach to affect peer norms among men who typically have sex under the influence.

Research Directions on HIV Prevention for MSM Who Have Sex Under the Influence

The overall research task should be to find ways to design and evaluate interventions that lower rates of high risk sex in populations that use or abuse substances. A first step might be to conduct basic research on the mechanisms underlying the established relationship between greater substance use and greater likelihood of engaging in high risk sex. Although some quantitative studies have examined this relationship at the level of the sexual event (Leigh & Stall, 1993), to our knowledge only one study has been completed that examines sexual risk-taking at the level of the sexual event using a qualitative approach. This study -- funded by the San Francisco AIDS Foundation -- asked nearly 200 gay male respondents in open-ended qualitative interviews to first describe the circumstances leading up to a safe and then unsafe anal sex event. By determining the differences between safe and risky events within the same individual, the usual knowledge, attitude and belief items that are used to explain sexual risk-taking are methodologically controlled. Probes were included in these qualitative discussions to examine the events that lead up to the sexual event, the mood of the respondent, the relationship with the sexual partner, the setting of the sex, drug/alcohol involvement, reasons for condom use (or not condom use), perceived HIV status of the partner, and how the respondent felt about the sexual event later. Analysis of some of these accounts found that a cluster of circumstances differentially preceded the risky event, circumstances suggesting a concurrent emotional distancing by the individual during his sexual activities and a later intense regret and concern about the sexual risk-taking after it occurred. Drug and alcohol use was sometimes part of the constellation of "distancing" events that preceded the risky behavior (Diaz, 1996). Continuing qualitative work to understand the place of drug and alcohol use as part of the

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preparation for unsafe sex seems to be indicated. In fact, a CDC-funded study is currently underway among HIV-seropositive men in New York and San Francisco that examines sexual events qualitatively.

We also need to initiate research on interventions to lower rates of sexual risk-taking among gay male substance abusers who are not in substance abuse treatment. An understanding of community process and the effectiveness of community-level interventions will be useful in this task. Harm reduction approaches to sexual behavior may also prove to be important contributions to keeping new infection rates low in this population. For example, if a prevention program is not able to get a substance abuser to get treatment, then a prevention goal might be to help the person engage in safer behaviors when he is under the influence of drugs or alcohol. If the high rates of sexual risk-taking typically found among substance abusing gay men can transmit HIV to men outside of this group, applying these approaches to the study of men in heavy substance using and high risk sexual networks may work to lower HIV incidence rates not only among substance abusing gay men, but in the larger gay male community as well.

Conclusions

Our understandings of the forces that drive substance use and high risk sexual behavior among gay men are still evolving. New insights regarding how the epidemics of substance abuse and HIV among MSM are interrelated and how they are distinct can be expected. The research agenda that we have proposed will help to advance our understandings not only of the epidemiology of substance use among gay men but also the ways that the substance use and AIDS epidemics intersect, and the manner in which prevention interventions can best be utilized to address these two problems.

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