

YouthZone

Program Evaluation Report

Marijuana and other Substance use by Diversion Program Youth

The Prevalence of Youth Substance Use

Across YouthZone's service area at least half of youth referred to diversion programs following arrest report they use marijuana occasionally or regularly. This is approximately twice the prevalence of use among Colorado youth of similar age. The statistical link between marijuana and delinquency is of concern because use has health and developmental risks for children and teens, could interfere with school and community involvement, has a possible causal link with the appearance of misconduct and illegal behavior, and acts as a barrier, holding youth back as diversion programs work to restore their emotional, behavioral, and social well-being. The purpose of this evaluation was to examine YouthZone diversion clients' history of marijuana use and their possible needs for substance use intervention.

Only a small minority of Colorado delinquency diversion programs have developed interventions to reduce substance use among their clients. By contrast, YouthZone has assessed the substance problems of their clients continuously for the last 18 years and has tested various approaches to reducing use. This evaluation report looks back on some of the most important lessons learned in YouthZone's service history, scans recent research on the use prevalence, and analyzes substance use data from clients seen during the last three years.

The Epidemiology of Marijuana Use As years have passed, youth use of marijuana and other substances has changed gradually at state and national levels. Significant trends do not become clear for five or more years. For this reason, recent research on the incidence of youth experimenting for the first time and the prevalence or commonness of use have been difficult to read. Some states are relaxing marijuana laws while others have resisted legalization. Further, youth in states that have legalized were always more tolerant and active consumers before laws changed, adding to the complications of answering the question, "Does legalization promote youth use of marijuana?" Some research on marijuana and youth does give new perspective on questions of epidemiology:

- Dembro et al. (2015) attempted to determine youth honesty in answering surveys – the most common means of measuring use. Concurrent surveying and urine testing revealed that young

teens minimized their use on surveys while older youth were more forthright. Youth surveyed in law enforcement, judicial, or probation settings may report much less use than do similarly aged youth in their communities. Survey setting may affect youth responding to substance use questioning.

- Hasin, et al. (2015) accessing US data sources showed that there has been an upward trend in marijuana use over the last decade and a half. The prevalence of marijuana use more than doubled between 2001-2002 and 2012-2013. There has been a large increase in marijuana use disorders during this time. While not all marijuana users experience problems, nearly 3 of 10 marijuana users manifested a marijuana use disorder in 2012-2013.
- Salas-Wright, et al. (2015) found that nationally, older youth over a 10-year period have lessened their disapproval of marijuana use, thereby becoming more tolerant of use.
- Webster, et al. (2014) reported that most (90%) youth cigarette smokers are also at least occasionally marijuana users.
- Weitzman, et al. (2015) found alcohol and marijuana use are associated with one another.

The Substance Abuse and Mental Health Services Agency's *National Survey on Drug Use and Health* is the country's most technically sound, independent, and comprehensive survey of youth substance use. Its data suggest that medical marijuana laws had no immediate effect on teen use, however, accumulating evidence indicates retail sales laws have been followed by rising consumption by youth and young adults. Consistent with these findings of a very gradual rise over more than a decade and a half are reports from the Colorado Department of Education of rising marijuana violations in high schools correlated with medical and retail law changes. In 2015-2016, 73% of all juvenile arrests involved marijuana or other substance violations.

The Colorado Department of Public Health has responsibility for measuring marijuana use prevalence among school-age youth. The 2015 Healthy Kids Colorado Sur-

vey results indicated that use in Region 12 (Eagle, Garfield, Grand, Pitkin and Summit Counties), especially regular use, was substantially higher than both Colorado and the US.

The Rocky Mountain High Intensity Drug Trafficking Area team is Colorado’s official federal-state analyst of substance use and related problems. In September 2016, it reported on youth marijuana use in Colorado, arbitrating statistical findings from various local, state department, and federal agencies sources, reaching the following conclusions:

- Youth past month marijuana use increased 20 percent in the two-year average (2013/2014) since Colorado legalized recreational marijuana compared to the two-year average prior to legalization (2011/2012). Nationally youth past

month marijuana use declined 4 percent during the same timeframe.

- The latest 2013/2014 results show Colorado youth ranked #1 in the nation for past month marijuana use, up from #4 in 2011/2012 and #14 in 2005/2006.
- In school year 2015/2016, 62 percent of all drug expulsions and suspensions were for marijuana violations, per school counselors and resource officers.

Together, these studies and reports show that across the country, more children and teens are experimenting with marijuana with the passage of years, that legalization probably pushes this background trend along a little more quickly, and that the YouthZone’s service catchment area is among the most heavily impacted by youth consumption at this time in Colorado.

Data: YouthZone Clients Use of Marijuana and Other Substances

Table 1 presents YouthZone client reports of their marijuana use from surveys of clients seen during 2010-2013 and in 2013-2016. The last two columns show cumulative use in the two samples. During these years there has

been a shift to greater consumption, with fewer clients having no marijuana use and some using more regularly. Now, essentially every other boy and girl at intake will be a substance user of one degree or another.

Table 1. Client Responses: “How do you like to use marijuana?”
(All Clients Completing Intake Screening)

Response Category	Frequency		Percent		Cumulative Percent	
	2010-2013	2013-2016	2010-2013	2013-2016	2010-2013	2013-2016
I do not use it	556	423	63.2%	55.1%	63.2%	55.1%
Just a puff or two	88	103	10.0%	13.5%	73.2%	68.6%
Enough to feel it a little	103	106	11.7%	13.8%	84.9%	82.4%
Enough to feel it a lot	52	63	5.9%	8.2%	90.8%	90.6%
Until I get really stoned	81	72	9.2%	9.4%	100.0%	100.0%
Total	880	767	100.0%	100.0%		

Client Characteristics and Marijuana Use Research on why some youth use and others do not has found that, where marijuana is available, the extent of youth use is related to four factors: parent standards and enforcement of non-use rules, extent of peer use of marijuana, school prevention efforts, and social norms about use

and enforcement of laws in the larger community. These forces no doubt drive use among YouthZone clients. Statistical analyses in this evaluation identified other features that distinguished no use, experimentation, and dependence (regular use) by clients. Table 2 summarizes these findings.

Table 2. Client Characteristics and Extent of Marijuana Use: 2013-2016 Survey

Characteristic	Youth Characteristics Relationship to Marijuana Use
Age	Older youth use more marijuana. Among older clients use tends more often to be regular than occasional. Marijuana dependency occurs, however, in all age groups.
Sex	There is a tendency among YouthZone clients for more girls to be non-users. However, there are no statistical differences in marijuana dependency between boys and girls.
Ethnicity	Ethnicity was unrelated to marijuana use.

Characteristic	Youth Characteristics Relationship to Marijuana Use
Family Type	Marijuana use was unrelated to the type of family with which the client was residing.
Previous Client	Youth who had previously been a YouthZone client were more often regular (dependent) marijuana users.
Referral Source	Youth referred to YouthZone by community sources (self, parents, school, YouthZone) were nearly always using marijuana and more than half were marijuana dependent.
YouthZone Screening Scales	Marijuana dependency was highly correlated with <i>YouthZone Screening for Positive Youth Development</i> (“Screening”) scales, showing that use is intertwined with the emotional and behavioral problems identified in the <i>Screening</i> and suggests that resolution of these problems is inextricably bound to reduction of marijuana dependence.

Findings in Table 2 can be summarized with several conclusions:

- First, older diversion clients are more likely to be regular consumers of marijuana products. About one-in-four clients 16 years and older will be dependent/habitual users.
- The characteristics vs. use information show also that boys and girls are equally likely to be marijuana dependent, though more girls report not using at all.
- Among YouthZone clients, ethnic status does not seem to influence their access to and use of marijuana nor does their type of family.
- When clients have been served previously by YouthZone, most will have at least tried marijuana and use will be greater than for youth who have not been seen previously.

- Community-referred, as contrasted with court-referred youth are more likely marijuana using clients.
- The YouthZone *Screening* tool will identify most clients who are using marijuana.

Epidemiological studies with national and state populations and in other Colorado regions find similar links between youth characteristics and marijuana use. In some regions, the connection between youth ethnicity and use is stronger than in the YouthZone population.

Table 3 provides information about clients’ use of other substances. More than half drink alcohol from time to time or more often. About one-in-eight is a cigarette smoker, like the overall youth rate in Colorado.

Table 3. Client Use of Substances Other than Marijuana
(All Clients Completing Intake *Screening*)

Response Category	Frequency		Percent	
	(Any use other than 1-2 times)		2010-2013	2013-2016
	2010-2013	2013-2016		
Alcohol	556	423	63.2%	55.1%
Tobacco	88	103	10.0%	13.4%
Other substances	103	106	11.7%	13.8%
Total	880	767		

Marijuana Use and Response to Diversion Services

Chemical dependency specialists agree that the psychological, social, and chemical effects of repeated substance use interfere with the motivational and self-reflective functions central to behavior change. They believe that substance recovery should either precede behavior change program enrollment or be closely integrated with these programs in order to achieve and sustain program benefits. The evaluation looked next, therefore, at the correlation between marijuana use and client change during YouthZone diversion services.

The statistical method for determining marijuana use influence on pre-post YouthZone *Screening* scales involved classifying each client with valid pre-post surveys as “not

using marijuana,” “occasional use,” or “regular use.” Statistical analysis compared the pre-post changes of youth in each category to determine whether improvement was the same or different among categories of clients. Table 4 lists findings from this analysis.

Table 4. Marijuana and Program Benefits

Pre-Post Scale	Marijuana Effect on Change
Alcohol, Tobacco, and Other Drug Use	While marijuana dependent clients improved their overall pre-post substance use, their scores were much higher at the end of services than were the intake scores of youth with lower levels of marijuana use

Pre-Post Scale	Marijuana Effect on Change
Optimism and Problem Solving	Regular marijuana users scored lower on this scale at intake and discharge than did youth in the other marijuana use categories
School and Community Involvement	Marijuana dependent youth had poorer school involvement than either of the other two marijuana use categories. In fact, these regular users <i>ended</i> their program with poorer school involvement than was occurring for no-use or occasional-use groups when they <i>enrolled</i> in services.
Delinquency and Aggression	Delinquency and marijuana dependency were found to be closely associated so that after services marijuana youth sustained more delinquent attitudes and behavior than either the non- or occasional users
Self-Deprecation	Results suggest that regular marijuana use is closely associated with self-disapproval and that, while these clients improved somewhat during diversion services, they remained troubled in this aspect of the adjustment when they left their programs

These results would tend to support views of chemical dependency specialists that substance-using delinquent youth need special consideration.

When youth’s behavioral and legal problems are intertwined with their use of marijuana, their condition when arrested and referred to diversion will be more serious and, though they will progress toward a more typical youth development during diversion, will end services with lower levels of adjustment and greater risk for reoffending than non- or occasionally-using clients.

One important diversion service goal is preventing client reoffending. Less than one-in-ten of enrolled clients reoffend during their months with YouthZone. Evaluation found most reoffending youth were marijuana users, and that they were twice as likely to be rearrested as non-users were.

It is likely that during diversions services many clients who had been using marijuana would stop or decrease their use out of concern that their use status might affect their progress through diversion. Reported use at intake and discharge may confirm this possibility. The comparison found in addition that among marijuana-dependent youth three-in-four cut back on use, but did not abstain entirely. Indeed, among dependent clients, 48.8% continued regular use from start of finish of program services.

Discussion: The Need for Marijuana Intervention in Delinquency Diversion Programming

The purpose of this evaluation was to cast a brighter light on YouthZone diversion clients’ history of marijuana use, their response to diversion programs, and their possible needs for support to avoid reoffending.

Most parents, some youth, and all diversion service providers have at least a general sense that regular marijuana use predisposes a young person to school underachievement, some social and legal difficulties, and the possibility of being arrested because of possession or substance use-related misconduct. Because many doubts that occasional use is harmful, tolerance can be casually extended to people for whom marijuana is consumed habitually. This casual tolerance will be accentuated by the documented perceptions among marijuana-dependent youth that all or almost all of the people they know are using regularly.

Tolerance and normative pressures combined with the commercialization of marijuana can create access and an environment that eases already vulnerable young people

(e.g., those struggling with their sexual or ethnic identity, who are affected by adverse social circumstances, or have a history of trauma) into use that might otherwise be avoided. Indeed, studies with incarcerated youth show their consumption is motivated primarily by the need and desire for relief from stress, to feel better, and for sleep. These are circumstances that shape the young person who comes to YouthZone for diversion services. Facts from this evaluation document the need for marijuana interventions in diversion programming.

Epidemiology and Intervention Need Studies of marijuana use by teens have not resolved fully whether legalization raises prevalence, though the prospect of easier access and some study statistics suggest that increasingly, youth will experiment with the substance and more will become dependent, regular users. About half of Colorado high school students are surveyed periodically by the Colorado Department of Public Health and Environment with the Health Kids Colorado Survey. Only small increases in marijuana use have been seen year

over year. Other surveys show rises in youth use. In schools, discipline for marijuana use and professionals' concern for student use have increased greatly. Evidence from YouthZone clients finds they are twice as likely to be substance users as comparably aged students in local high schools.

The epidemiological perspective argues that a diversion program should be prepared to address substance use as a risk factor for delinquency.

Client Characteristics and Intervention Need Evaluation showed, when a client was 16 years or older, had had previous brushes with the law, perhaps had been referred in school for behavior problems, and whose score on the YouthZone *Screening* substance scale was average or above, that he/she would benefit from a supplemental substance use assessment. This intervention would identify early in program services a client's need and referral made for programs with promise of reducing consumption and reoffending.

Response to Diversion Programs Reoffending and the Need for Intervention When statistics on response to YouthZone overall diversion programs were disaggregated by client's placement in categories of "non-use," "occasional-use," and "regular-use," it became clear in the evaluation how detrimental marijuana and other substance use was to clients' overcoming delinquent attitudes and behavior. A boy or girl beginning case management who gave a history of regular/dependent use revealed they were less optimistic about their futures, less engaged at school, had more anti-authoritarian attitudes and antisocial behavior, and lower self-opinion than was true for other clients. The more involved with substances the more maladjusted they were in all areas of concern with juvenile offenders.

The YouthZone client who is using marijuana regularly and seeks its intoxicating effects, as compared to the youth who never uses or experiments occasionally with peers in a social setting, does indeed benefit from diversion program services, but concludes their involvement with more behavioral risk factors present. These statistical facts are an additional argument for diversion programming specifically for and with an evidence-base of effectiveness with young people using marijuana regularly.

Evidence-Based Intervention A consensus of research on programs for substance-using youth in community-based diversion settings is that little is known about what may distinguish effective and ineffective interventions. The five models receiving the greatest national research attention now:

- A 6-week intervention consisting of two sessions of individual motivational enhancement therapy plus three sessions of group cognitive behavioral therapy (MET/CBT5)
- A 12-week intervention consisting of two sessions of motivational enhancement therapy plus 10 sessions of group cognitive behavioral therapy treatment (MET/CBT12)
- A 12-week intervention consisting of MET/CBT plus the family support network, a multi-component intervention that includes parent education, family therapy and case management
- A 12-week intervention based on the adolescent community reinforcement approach (ACRA), an individual behavioral treatment approach designed to help adolescents and their parents reshape their environment and learn new skills
- Multi-dimensional family therapy (MDFT), a multi-faceted, developmentally and contextually oriented family-based model targeting individual, family and social systems

Outcomes at one-year have indicated that though the treatments for marijuana dependence were more effective than less systematized treatments, two-in-three adolescents were still having problems 12 months later.

Experience in community-based interventions with youth behavioral problems shows that the service setting, available funding, community factors, cultural influences, and individual youth characteristics and circumstances all affect program outcomes. It may be a decade or more before promising programs have been aligned with these influential factors so interventions can be tailored to youth for the most favorable results. Until then, youths referred to YouthZone and other Colorado diversion programs are best served by local program development and testing so that substance-using clients leave services with an equal chance at positive youth development as non-using adolescents.