

Community Health Improvement Partners (CHIP)

White Paper:

Best Practices and Cost Benefit of Substance Abuse Prevention in Health Care Settings

CHIP Substance Abuse Work Team

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May 12, 2000

Magnitude of the Problem

Substance abuse, including illicit drugs and alcohol, causes illness and disease, results in high use of medical services placing a multibillion-dollar burden on the national economy yearly. Estimated at \$290.1 billion in 1995, this represents a \$1,103 cost for every individual living in the U.S.¹

Experts measure the costs of substance abuse in terms of the following: (1) *core health costs* are health care costs incurred by substance abusers. Included are both direct medical care expenses and indirect costs associated with reduced or lost productivity and premature death; and (2) *other related costs* which include costs of the non-health effects of substance abuse such as the costs related to motor vehicle accidents, crime and social welfare expenditures.

This methodology was applied in an analysis of the costs of drug and alcohol abuse in 1995 in San Diego County.² Of the total \$1.8 billion cost, core health costs related to alcohol and drug abuse exceed \$1 billion. Direct expenditures on medical care to treat substance abuse-related health conditions accounted for one-third of the total amount. In spite of these costs, combined expenditures for alcohol and drug abuse prevention and treatment comprised less than 3 percent of total health costs. Clearly, the magnitude and distribution of these costs suggests that if the high future costs of substance abuse are to be avoided, effective practices must be found to prevent and ameliorate the adverse health consequences of substance abuse.

Why Include Substance Abuse Prevention in Health Care Settings?

Health care agencies can play a critical role in substance abuse prevention. Fully 80% of Americans have contact with a physician every year, including the 20% to 25% who are at-risk for alcohol and drug related problems.³ Most of these persons go undetected during routine contact with health care providers. Likewise, physicians often fail to actively address these problems even when identified. It is therefore crucial that innovative strategies be implemented to assist health care providers in identifying and intervening with patients with alcohol and other drug problems.

Recent research shows that the majority of alcohol-related problems are attributed to the group of light and moderate problem drinkers rather than to the smaller number of dependent drinkers (alcoholics). According to the National Academy of Sciences, Institute of Medicine's (IOM) 1990 report, "If the alcohol problems experienced by the population are to be reduced significantly, the distribution of these problems in the population suggests that a principal focus should be on persons with mild or moderate alcohol problems."⁴

A study conducted at the University Hospital in Madison, Wisconsin found that substance use disorders, (defined as a maladaptive pattern of use manifested by recurrent and significant negative consequences related to the repeated use of alcohol⁵) are prevalent among inpatients of general medical hospitals.⁶ Among a sample of 363 patients recruited from general medical, general surgery and orthopedics

* Definitions regarding amounts and frequency of alcohol consumption for specific categories of drinkers vary slightly depending on the particular study, author, etc. According to *The Physicians' Guide to Helping Patients With Alcohol Problems*, produced by the National Institute of Alcohol Abuse and Alcoholism, persons at risk for alcohol-related problems are men who consume more than 2 drinks per day and more than 4 on any single occasion and women who consume more than 1 drink per day and more than 3 on any single occasion.

services, current and lifetime prevalence rates of substance use disorders were 21.8% and 49.6% respectively. Males had nearly a 30% current prevalence rate of substance use disorders. The researchers conclude that alcohol and drug screening, assessment, and intervention programs have the potential to prevent future health and social problems.

What is a “Best Practice”?

The National Institute for Drug Abuse (NIDA), the Center for Substance Abuse Prevention (CSAP), National Center for the Advancement of Prevention (NCAP), Office of Juvenile Justice and Delinquency Prevention (OJJDP) as well as the Department of Education (DOE) deem strategies or programs as "best practices" if they are based on research conducted by scientists or researchers. A best practice is a service, function or process that has been fine-tuned, improved and implemented to produce superior outcomes.⁷ These "practices" have been shown through substantial research and evaluation to be effective at preventing and/or delaying substance abuse.

These organizations have also designated a category called “promising practices” which include programs and/or strategies that have some quantitative data showing positive outcomes in delaying substance abuse over a period of time, but lack enough research or replication to support generalizable outcomes.

To be successful in today’s cost-conscious health care market, strategies must not only be clinically effective in reducing substance abuse. They must also be cost-effective, meaning that the cost of implementation is offset by the monies saved in avoiding the future high costs of problems attributed to substance abuse.

Screening and Brief Intervention – A Best Practice for Health Care Settings

Through a review of the literature regarding substance abuse prevention in health care settings, screening and brief intervention (SBI) appears to be the most effective and practical strategy applicable to the wide variety of healthcare environments. Although there is variation in screening and brief intervention protocols, in general, SBI involves interviewing patients regarding their substance use, providing brief interventions based on patients’ risk levels and referring patients for further assessment and/or specialized treatment as needed.

Numerous screening and brief intervention programs that target alcohol and other substance use have been effectively implemented in a variety of healthcare settings. These prevention efforts are employed in emergency rooms, general medical, general surgery and primary care environments. In addition, SBI projects have targeted specific populations including older adults, pregnant women, ethnic minorities and adolescents. The results demonstrate that these procedures are effective in reducing alcohol use, future healthcare utilization and costs for healthcare agencies and the public. For dependent drinkers, SBI programs have increased patient participation in specialized treatment services, with the resulting cost benefit. Refer to the chart on page three (3) for the synopsis of various SBI project studies.

In its April 1999 *Alcohol Alert*, the National Institute of Alcohol Abuse and Alcoholism reported that, “many studies suggest that brief intervention can help non-alcohol-dependent patients reduce their drinking. In a meta-analysis of 32 brief intervention studies, Bien and colleagues reported that the average positive change observed for intervention groups was about 27 percent. Positive changes were often observed for control groups, suggesting that the assessment of drinking behavior and related problems may, in itself, have led motivated patients to alter their drinking behavior.”⁸

Best Practices and Cost Benefit of Substance Abuse Prevention in Health Care Settings

Author/ Study Name	Year	Ref #	Target Pop & N Size	Setting	Intervention	Results	Length of Evaluation	Statistical Significance
Brown, RL	1998	6	363 hospital patients	Hospital – inpatient	N/A	<ul style="list-style-type: none"> Lifetime and current prevalence of substance use disorders - 21.8% and 49.6%, respectively 	2 years	N/A
Bien, TH (reported by National Institute of Alcohol Abuse and Alcoholism)	1993	8	Meta-analysis 32 controlled studies (6,000 adults; 14 countries)	Health care and treatment	Varied e.g. - 5 minutes of advice; advice + 15 minutes of counseling and self-help manual	<ul style="list-style-type: none"> 25% average reduction in drinking 	Varied (not reported)	3 months – 10 years
Bernstein, E Project ASSERT	1997	9	7,000 adult ED patients	Hospital ED	DAST, AUDIT, Readiness Scale -Referral	<ul style="list-style-type: none"> 41% of patients identified with substance abuse 37% of substance abusing patients enrolled in treatment 91% patient satisfaction 	12 months	N/A
Fleming, MF Project TrEAT	1997	10	723 adult primary care patients	Primary care	2 15-minute MD delivered counseling visits (advice, education and contracting – scripted workbook)	<ul style="list-style-type: none"> 40% reduction in alcohol use (compared to 18% reduction for control group) 46% reduction in binge drinking (compared to 21% reduction for control group) 43% shorter hospital stays (males) Total cost savings of \$5.60: \$1 over one year period 	6 and 12 months	<p>P< .001</p> <p>P< .001</p> <p>P< .01</p>
Fleming, MF Project GOAL	1999	11	158 adults ages 65 and over	Primary care	2 15-minute MD delivered counseling visits (advice, education and contracting – scripted workbook)	<ul style="list-style-type: none"> 34% reduction in alcohol use (compared to control group) 74% reduction in binge drinking (compared to control group) 62% reduction in weekly amount of excessive drinking (compared to control group) 	3, 6 and 12 months	P < .005
Enos, GA	2000	12	Low-income adults	Primary care	MD training to screen patients for substance abuse and refer to case manager to oversee treatment	Study in progress – no data available	Study in progress – no data available	Study in progress – no data available
Ockene, JK Project Health	1999	13	530 adults	Primary care	5-10 min MD or Nurse Practitioner counseling (patient centered) during routine visit + office support system	<ul style="list-style-type: none"> 31% reduction in alcohol use (compared to 19% reduction for control group) or: Reduced alcohol consumption (-5.8 drinks/week compared to -3.4 drinks/week for controls) 54% achieved safe weekly drinking levels (compared to 39% for control group) 	6 months	<p>P< .001</p> <p>P< .01</p>

Hospital-Based Programs

Within hospital settings, several studies have demonstrated positive clinical outcomes and created value-added services to the system. Project ASSERT, an acronym for improving Alcohol and Substance abuse Services and Educating providers to Refer patients to Treatment is an innovative program developed at the Boston University School of Medicine and adopted by Boston Medical Center to link Emergency Department (ED) patients with drug and alcohol-related health problems with the substance abuse treatment system, primary care and other prevention services.⁹ Multicultural health promotion advocates (HPAs) were trained by ED personnel to screen patients using a health needs history and readiness-to-change interview.

During a one-year period, over 7,000 adult ED patients were screened. Substance abuse was detected in 41% of patients with 37% of them subsequently enrolling in the project. A total of 8,848 referrals were made: 3,189 to primary care, 2,018 to a variety of substance abuse services, 2,253 for smoking cessation, 339 for mammography, and 689 to other support services (e.g., psychiatry, social worker, battered women's advocate or shelter). At follow-up, patients expressed satisfaction with Project ASSERT with 91% being satisfied with their referrals and 99% thought the HPAs respected them as individuals. Over 50% of the patients reported that they had kept an appointment for treatment.

Primary-Care Based Programs

In the primary care setting, a variety of screening and brief intervention initiatives have shown much promise in decreasing alcohol use as well as healthcare utilization. Project TrEAT (Trial for Early Alcohol Treatment) is the first U.S. trial to clearly document that physician interventions with problem drinkers decreases alcohol use and health care resource utilization.¹⁰ Patients receiving medical treatment at 17 community-based primary care practices (64 physicians) in Wisconsin were included in the study. Patients identified with alcohol problems received brief physician interventions and were compared to problem drinkers receiving no intervention. The intervention consisted of two 10-to 15-minute counseling visits delivered by physicians using a scripted workbook that include advice, education and contracting information. At 12-month follow-up, alcohol use decreased 40% for patients who received the intervention compared to 18% for the control group. As well, the rate of binge drinking decreased by 46% for the intervention group compared to 21% for the controls. Changes in health care utilization were also significant; with men in the intervention group having 43% shorter hospital stays when compared with the control group at 12-month follow-up.

In a related study, Project GOAL (Guiding Older Adult Lifestyles) tested the efficacy of brief physician advice in reducing alcohol use and use of health care services for older adult problem drinkers, ages 65 and over.¹¹ Twenty-four community-based primary care practices in Wisconsin (43 family physicians and internists) participated in the trial. Of the 6,073 patients screened, 105 men and 53 women met inclusion criteria and were randomized into a control group or an intervention group. As in Project TrEAT, intervention group patients received two 10-15 minute physician delivered counseling sessions that included advice, education, and contracting using a scripted workbook. When compared to the control group, the older adults who received the physician intervention demonstrated a significant reduction in 7-day alcohol use (34%), episodes of binge drinking (74%) and a 62% reduction in frequency of excessive drinking.

Using a network of five health care facilities, Sinai Family Health Centers in Chicago has implemented a screening project to establish a linkage between primary care and addiction treatment services.¹² The project, which is funded by the Center for Substance Abuse Treatment (CSAT), is designed to study the effectiveness of training primary care physicians to screen patients for drug and alcohol problems and

refer them to substance abuse treatment. The influential role of the primary care physician is being utilized to convince patients who are identified through a brief screening instrument to follow up with a case manager. The case manager conducts an alcohol and drug assessment and works with the patient to address barriers to treatment, such as transportation or child care needs, health problems and behavioral issues. Early evaluation of the program has identified positive results in enhancing the patient's willingness to participate in treatment.

Project Health conducted at four (4) academic medical center-affiliated primary care practice sites (46 physicians) in Massachusetts demonstrated that significant reductions in alcohol consumption can be achieved for high-risk drinkers with screening and very brief (5-10 minute) counseling delivered by primary care physicians or nurse practitioners.¹³ This study employed an office support system designed to assist busy primary care physicians in carrying out the interventions. The system was designed to be easily incorporated into routine office procedures and included screening of patients by research assistants via telephone, mail or at the time of the office visit. The screening information, along with an intervention algorithm was provided to remind physicians of the counseling sequence taught in the training sessions. Patient education materials in the form of tip sheets were made available for providers' use with the patients. The study population of 530 high-risk drinkers was randomized to special intervention or usual care groups. At 6-month follow-up, alcohol consumption was significantly reduced ($p = .001$) for the special intervention group (-5.8 drinks per week) compared to the usual care group (-3.4 drinks per week). This reduction meant that a significantly greater percentage of patients in the special intervention condition (54%) achieved safe weekly drinking levels at 6 months than in the usual care condition (39%).

San Diego County Programs

In San Diego County, several substance use intervention projects are gaining solid reputations. A model based on screening and brief intervention (SBI) research and designed to be easily integrated in a variety of health care environments has been developed and implemented in multiple primary care and hospital settings throughout the County. The model employs specially trained peer health educators to routinely screen all adult and adolescent patients for alcohol and drug use, including tobacco use for adolescents. The peer health educator provides substance use information, makes brief interventions, provides referrals as appropriate and conveys the information to the medical provider to aid in diagnosis and treatment. The role of the medical provider is to reinforce the advice and/or referral provided by the peer educator and to utilize the information as applicable to the patient's medical condition.

This peer health educator/systems integration model was initially developed at Palomar Medical Center's Emergency Department and the Escondido Community Health Center. Scripps was the first large healthcare system to test the transportability of the model to a busy urban setting at Scripps Mercy Hospital in Hillcrest. Additional sites now include North County Health Services, Kaiser and most recently, Tri City Medical Center. SBI services have been implemented in eleven different health care settings including primary care, prenatal, emergency, trauma, pediatrics and dental services. A total of 84,000 patients have been screened in San Diego County since 1995, demonstrating the success of this model in overcoming the implementation barriers that have limited adoption of screening and brief intervention. Local results are consistent with outcomes from clinical trials showing a significant reduction in alcohol and drug use with 95% of patients reporting reductions at 2-6 week follow-up. Not only do patients report high levels of satisfaction with SBI services, but also their satisfaction with the medical visit increases significantly when SBI services are included. Although preliminary results are promising, additional outcomes research is required in order to determine the overall efficacy of the program.

Another local project, the Teen Screen Program located at Pomerado Hospital in Poway is a 24-hour alcohol and drug-testing program for adolescents, ages 12-18. A collaborative project of Pomerado and Sharp Mesa Vista Hospitals, the program is used as an intervention tool for parents who suspect their teen may be using alcohol or other drugs. Drug test results are obtained by the parent from professionally trained counselors who offer substance use information, parenting classes, counseling, and referrals to treatment programs. Since the program began in 1994, over 4,000 adolescents have been screened with 37% testing positive for illicit substances. Many parents in the local communities have reported using the program as an effective deterrent to adolescent substance use even though they have never had to use the service. Patient satisfaction is extremely high with 90% finding the program very helpful.

The Healthcare Association of San Diego and Imperial Counties (HASD&IC) has responded to meet the critical needs of at-risk infants by promoting a standardized protocol to screen, assess and treat families with perinatal substance abuse. A task force comprised of representatives from every perinatal hospital and/or healthcare system in San Diego County worked with the Regional Perinatal System's Perinatal Nurse Leaders Council and Healthcare Association staff in reviewing and assessing hospital protocols that identify and treat drug-exposed infants. The task force developed a revised hospital protocol that was approved by the HASD&IC Board of Directors with a high level of support. The protocol was recommended for implementation at all perinatal hospitals throughout the region.

Cost Benefit

Recent analyses have clearly documented the cost effectiveness of substance abuse screening, intervention and treatment services. The benefit-cost analysis of Project TrEAT¹⁴ showed a total savings of \$5.60 for every dollar invested in physician-provided advice to high-risk drinkers over a one-year period. Societal cost reductions in the form of reduced crime and motor vehicle crashes produced savings of \$2.40 for every dollar invested over the 12-month follow-up period. Savings to managed care providers from reduced emergency department visits and shortened hospital stays generated a \$3.20 savings for every dollar invested.

A 1995 report from the federal Center for Substance Abuse Prevention (CSAP) analyzed the available data on cost savings of substance abuse prevention and treatment in managed care settings.¹⁵ The CSAP report, which reviewed numerous studies and national data, estimated savings of \$15,000 to \$17,000 for every \$10,000 invested to managed care providers over a two-year period and another \$17,500 - \$27,500 savings with the same \$10,000 investment in long-term medical care to other health care providers, taxpayers, Medicare and Medicaid.

Several studies have documented that effective treatment for alcoholism reduces subsequent health care expenditures for dependent drinkers as well as their family members.^{16, 17} Since spending typically increases sharply in the year before the health care crisis that results in identification of an alcohol problem, low-cost identification and motivation to enter treatment at earlier stages can further reduce health care spending.

Although there are variations in the settings, methodologies and modalities among these studies, it is clear that there are substantial cost savings for society and health care agencies for integrating screening, intervention and referral procedures in routine health care services.

Barriers to Implementation

Although clinical trials have documented the effectiveness of screening and brief intervention strategies, implementation in real world practice settings has been very limited. The competitive managed care environment has placed more demands on physician's time, making it more difficult for doctors to take the time to screen patients for alcohol problems. There is insufficient training for health care professionals, particularly physicians to develop the skills required to screen for and intervene on substance use problems in their patients. Other barriers that impede the routine implementation of screening include general practitioners' reluctance to engage in prevention activities, inattention to screening for possible alcohol problems, lack of confidence concerning how to intervene once cases have been identified, concern that raising the issue of alcohol use may offend patients and doubts that the intervention will be successful.¹⁸ Furthermore, the lack of comprehensive treatment resources as well as the inadequate coordination between physical and behavioral health services adds to the resistance of screening and intervention in physical health care settings.

Summary

Alcohol and other drug use contribute significantly to the nation's health care bill. Effective strategies must be developed and implemented to prevent and rectify the adverse health consequences of substance abuse. It is estimated that 25 to 40 percent of all Americans in general hospital beds (excluding maternity and intensive care unit beds) are being treated for complications of alcoholism.¹⁹

With over three-fourths of adults and adolescents visiting their physician every year, health care organizations can play an important role in screening for and intervening with patients at-risk for substance abuse problems. . Proven strategies called "best practices" are being advanced in healthcare settings to prevent and reduce harmful drinking. Screening and brief intervention (SBI) appears to be the most effective and practical approach applicable to the wide variety of healthcare environments.

Screening and brief intervention programs have been implemented in emergency rooms, general medical and primary care settings targeting the general population as well as specific groups including older adults, pregnant women, ethnic minorities and adolescents. There are also a variety of protocols for conducting the screening and brief interventions allowing the program to be tailored to the unique needs of each healthcare setting. SBI programs have employed physicians, nurse practitioners, health promotion advocates, case managers, and specially trained peer health educators to conduct screenings and give advice and /or referrals.

Substance abuse screening, intervention and treatment services have clearly been shown to be cost-effective. One detailed study has shown a benefit-cost ratio of 5.6:1 or \$56,000 in total benefits for every \$10,000 invested. Cost savings were realized in the emergency department and hospital use and in avoided costs of crime and motor vehicle accidents. Another comprehensive study conducted in California on the cost benefit of treatment found a \$7 return for every dollar invested.²⁰ Using relatively simple screening and intervention procedures, health care entities can expect to produce long-term reductions in morbidity and health care costs.

Although screening and brief intervention strategies are shown to be effective, numerous barriers to implementation have been encountered. Insufficient skills training for physicians, reluctance to discuss substance use with patients, lack of coordinated efforts between physical and behavioral health services and limited treatment resources are a few of the obstacles to successfully establishing SBI programs. In spite of these challenges, screening and brief intervention services are gaining support and steadily being incorporated into health care settings.

Conclusion and Recommendations

Healthcare agencies are positioned to play a critical role in improving community health by identifying and intervening on patients at-risk for substance abuse problems. The healthcare environment, which services individuals seeking medical treatment and advise on their health status provides an ideal opportunity to positively affect the vast majority of the at-risk alcohol and drug using population without additional outreach efforts and costs. In addition to the 20% - 25% of patients in primary care settings who are estimated to be at-risk for alcohol-related problems, in certain settings, such as trauma and emergency services, there are an estimated 40% of patients who are at-risk. Since emergency services are often the only access to healthcare for the uninsured and underserved, integrating prevention services in these settings can have significant benefit for the larger community. The staggering costs to the healthcare system in treating this high-risk population- significantly greater than even the criminal justice system- emphasize the importance of prevention as an integral component of healthcare.

Although healthcare agencies largely recognize the need for substance abuse prevention, few practical strategies have been available that could be incorporated into busy medical settings. The development and refinement of valid, reliable screening instruments and effective, brief interventions and referral procedures have provided healthcare with new viable options. The scientific evidence regarding the efficacy of screening and brief intervention, both in reducing drinking and health care costs, strongly supports the integration of these procedures in multiple health care settings.

Through several comprehensive County-wide needs assessments, Community Health Improvement Partners (CHIP) has identified substance abuse as one of the top three priorities and concerns in healthcare. It is evident that additional resources will be required to address this pervasive problem. Alcohol and other drug prevention and screening/brief intervention programs have proven to have a significant impact on reducing the harmful and costly effects of high-risk substance use when implemented in healthcare settings. The CHIP Substance Abuse Work Team recommends the following actions:

1. Adopt and promote screening and brief intervention as a best practice in health care settings for preventing and reducing substance abuse.
2. Explore the feasibility of developing a Health Care/ Substance Abuse Prevention Fund in which business, county government, insurers, foundations and health care contribute to implement alcohol and other drug screening, brief intervention and referral procedures in multiple health care settings.
3. Develop resources and obtain funding for a scientific outcome evaluation of the SBI peer health educator/systems integration model currently implemented in multiple health care settings in San Diego as a basis for future shared funding by public and private insurers, payers, government and health care organizations.
4. Identify opportunities and obtain funding to train physicians and other health care providers in screening for at-risk substance use and intervening with patients in the primary health care setting.

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