The Impact of Substance Use Disorders On Health Care
Substance Abuse Treatment Reduces Health Care Costs

Substance abuse disorders are contributing factors to high health care costs. The presence of substance abuse disorders with other chronic conditions (co-morbidity) complicates medical care, significantly increasing utilization of high cost services. The preponderance of evidence shows that persons with substance abuse conditions utilize emergency department visits and hospital stays at a high rate. Substance abuse treatment is often an essential element in the overall medical treatment of patients with co-morbid medical conditions. Numerous studies measuring different treatment approaches for persons with substance use disorders have found that future health care costs can be reduced when treatment is provided.

Overview of Key Findings

- Primary care patients with relatively high levels of alcohol consumption and use of drugs are at risk for related medical conditions. Complicating conditions include: chronic obstructive pulmonary disease (COPD), hypertension, pneumonia, injury and overdoses, congestive heart failure, depression, anxiety, and major psychoses.¹
- Individuals with addictions frequently have accompanying medical issues such as: lung and cardiovascular disease, stroke, cancer, and mental disorders.²
- Physical and behavioral co-morbidity is pervasive among Medicaid’s highest cost beneficiaries. For patients with common chronic physical conditions the prevalence of drug and alcohol disorder is fairly high ranging from about 17 percent for persons with diabetes to 26 percent for persons with COPD/asthma. The presence of mental illness and/or drug and alcohol disorders is associated with substantially higher per capita costs and hospitalization rates.³
- Because the high rates of co-morbid substance abuse and medical conditions, optimal treatment of many common medical disorders may require identification, intervention, and treatment of an underlying substance abuse disorder.⁴
- Adolescents who abuse substances also have more co-morbid health conditions than do adolescents who do not abuse substances and for those who continue to misuse alcohol and other substances these medical conditions may be ongoing.⁵
- Research has shown that in the Southern region of the nation, approximately 393 acute care inpatient stays per 100,000 were related to substance abuse. Medicaid paid for 36.5 percent of the costs while 17.2 were uninsured. Findings have shown that a large portion of drug abuse hospital stays were uninsured—over three times the rate for all uninsured hospital stays (17.2 versus 5.4 percent).⁶
Health Care Costs

- Persons with more severe mental and/or substance abuse disorders were more likely to have an emergency room visit within the year. As compared with other chronic conditions, persons with co-occurring mental and substance use disorders were most likely to use the emergency room services repeatedly and at almost twice the rate of patients with other chronic conditions.\(^7\)

- In one state study, persons who needed substance abuse treatment and didn’t get it were 81% more likely to be admitted to the hospital during their current emergency department visit and 46% more likely to have reported making at least 1 emergency department visit in the previous 12 months.\(^8\)

- A six state study showed that for persons with behavioral disorders, individuals with a diagnosis of substance abuse disorders had significantly higher medical costs in five of the six state studies and the difference in medical costs increased with age.\(^9\)

- Nationally, the number of drug-related emergency room visits increased by over 70 percent from 2004 through 2008. This increase reflects jumps seen in the number of drug-related emergency department visits involving adverse reactions, accidental drug ingestions, and misuse or abuse of prescription drugs and over the counter medications. The highest percentage of emergency department visits related to substance abuse was due to nonmedical use of pharmaceutical, (medication not prescribed, or taken only for the experience or the feeling it caused). The researchers also reported a 97% increase in emergency department visits for nonmedical use of pharmaceuticals between 2004 and 2008.\(^10\)

- Preventable hospital readmission rates have been found to be very high for persons with chronic conditions and have been reported to be as high as 16% within 30 days and 53% over a 12 month period. Diagnostic categories that are highly predictive of readmissions include cancer, substance abuse disorders, hematological disorders and schizophrenia.\(^11\)

- Substance abuse treatment can significantly reduce health care costs. John Hopkins Healthcare reported a return on investment of $3.65 dollars per $1 spent on intervention.\(^12\) A study focused on substance abuse brief interventions showed a $3.81 dollars per $1 savings for medical costs using substance abuse screening and interventions.\(^13\) Washington state estimated that their treatment expansion initiative resulted in a $2 dollar savings for every dollar invested in the treatment expansion.\(^14\)

- Several studies reviewed showed that a variety of substance abuse treatment approaches have reduced medical costs. These studies have shown a range of per person savings from $380 per month\(^15\) in medical costs to about $133 per month.\(^16\)

- Washington State researchers found that by expanding their substance abuse Medicaid benefits they had significant reductions in rates of growth in medical and nursing facility costs for persons with substance use disorders.\(^17\) California also determined a health care offset from treatment with 6% of the offset attributable to medical and behavioral health care.\(^18\)
• Studies have shown relatively consistent healthcare offsets when substance abuse treatment is provided to persons needing treatment. Washington state reported a 35% reduction in emergency room costs compared to persons who needed treatment but did not receive it.19 A study of health plan patients showed a range of 26% to 39% savings when substance abuse treatment was provided.20 Another health plan study showed a 30% savings for persons with chemical dependencies after treatment.21

• Substance abuse treatment may also impact the overall health of family members. Research findings indicate that when families have a member with a substance use disorder they may have greater health care costs than comparison families. This may be the case for both adult and child family members.22

• Just as studies have shown that substance abuse treatment reduces the patient’s health care cost, successful alcohol or drug problem treatment is related to medical cost reductions for family members.23

• The cost of treatment can be offset in just one year. Research in Washington state compared expenditure data sets for persons who needed treatment and received it versus the cost for those who did not. They report a $200 savings above treatment costs in the first year. The health care saving costs are likely to persist for years to come.24

A Summary of Related Research Findings

Hazardous Drinkers and Drug Users in HMO Primary Care: Prevalence, Medical Conditions and Costs

According to the authors, the co-morbidities of persons who do not meet dependency clinical criteria are not well documented. The authors investigated the medical consequences of “alcohol consumption which confers the risk of physical and/or psychological harm”. They refer to this category as Hazardous Drinker. Also, they discussed the patient’s misuse of prescription drugs. Although this level of alcohol and drug use may not meet the category of “dependency”, the use has medical consequences.

In their study, Mertens, Weisner, Ray, Fireman, and Walsh use primary care settings to examine associations between these problems and medical conditions, and investigate the costs of health care for this less severe use of alcohol and drugs. In this study, 1,419 patients were screened for hazardous drinking and drug use. Of these patients, 95 individuals who were positive for hazardous drinking and drug use agreed to participate. This group’s medical records were compared to 13,347 individuals who used the care facilities at the same times and were patients at the clinic in the prior year, but were not screened.

The study found that one-in-ten primary care patients is a hazardous drinker and/or drug user. Specifically, 7.5 percent are hazardous drinkers while 3.2 percent are hazardous drug users. Hazardous drinkers and/or drug users have a higher prevalence of various psychiatric and medical conditions than other primary care patients. These conditions include: chronic obstructive pulmonary disease (COPD), hypertension, pneumonia, injury and overdoses, congestive heart failure, depression, anxiety, and major psychoses.

**Addiction and Health**

Individuals who suffer from addiction often have one or more accompanying medical issues, including lung and cardiovascular disease, stroke, cancer, and mental disorders. Imaging scans, chest X-rays, and blood tests show the damaging effects of drug abuse throughout the body. For example, tests show that tobacco smoke causes cancer of the mouth, throat, larynx, blood, lungs, stomach, pancreas, kidney, bladder, and cervix. Amphetamine effects can be long lasting and harmful to the brain. They can cause high body temperatures and can lead to serious heart problems and seizures. In addition, some drugs of abuse (such as inhalants) are toxic to nerve cells and may damage or destroy them either in the brain or the peripheral nervous system. Intravenous use of Heroin places the person at a high risk for serious infectious diseases.


**Clarifying Multimorbidity Patterns to Improve Targeting and Delivery of Clinical Services for Medicaid Populations**

Center for Health Care Strategies partnered with researchers at John Hopkins University to examine multimorbidity patterns among adult Medicaid beneficiaries with disabilities and the implications of specific patterns of hospitalization and cost. “Multimorbidity pattern” was defined as specific and often multiple conditions that a person has concurrently, such as depression, hypertension, chronic pain, and asthma. The study used 2001 and 2002 data from Medicaid files and identified the combination of physical and behavioral conditions that contributed to high health care costs and high utilization of hospital stays. The authors stated that the analysis confirms the overwhelming pervasiveness of physical and behavioral co-morbidity among Medicaid's highest-cost beneficiaries. The findings demonstrate that most beneficiaries with the highest hospitalization rates and costs have not one condition, but many. The presence of mental illness and/or drug and alcohol disorders is associated with substantially higher per capita costs and hospitalization rates. For patients with common chronic physical conditions, the prevalence of drug and alcohol disorders is fairly high ranging from about 17 percent for persons with diabetes to 26 percent for persons with Chronic Obstructive Pulmonary Disease/asthma. Findings also show that the presence of co-occurring mental illness and drug and alcohol disorder for beneficiaries with common chronic physical conditions results in two-to-three fold higher health care costs. The combination of mental illness and drug and alcohol disorder is linked to even higher hospitalization rates. Beneficiaries with asthma, coronary heart disease, asthma, diabetes, or congestive heart failure and co-occurring mental illness and drug and alcohol disorder are four to five times more likely to be hospitalized than those with only physical conditions.
Medical and Psychiatric Conditions of Alcohol and Drug Treatment Patients in an HMO: Comparison with Matched Controls

This study compared the prevalence of medical and psychiatric conditions among 747 substance abuse patients and 3,690 demographically matched controls from the same HMO. Findings showed higher incidences of injuries, overdoses, hypertension, congestive heart failure, pneumonia and ischemic heart disease. These last five conditions were among the top six that contributed the most to the health plan's direct medical expenses in a one year period. Also, asthma, acid-related peptic disorders, chronic obstructive pulmonary disorder, cirrhoses, disease of the pancreas and hepatitis C were all more prevalent among persons with substance abuse disorders than the matched control group. The authors conclude that optimal treatment of many common medical disorders may require identification, intervention, and treatment of an underlying substance abuse disorder.


Medical Conditions of Adolescents in Alcohol and Drug Treatment: Comparison of Matched Controls

Studies have shown that alcohol and drug problems are associated with medical problems among adults. Research on the relationship of adolescent alcohol and drug use disorders to specific medical problems is less developed and focused on acute consequences. This study addresses gaps in the literature regarding medical co-morbidities in adolescents with alcohol and drug use disorders. This study compares the prevalence of medical conditions among 417 adolescent alcohol and drug treatment patients with 2,082 demographically matched controls from the same managed care health plan and examines whether comparisons vary among substance-type subgroups.

The study found that approximately one-fourth of the co-morbid conditions examined were more common among adolescent alcohol and drug patients than among matched controls, and several were highly costly conditions (e.g., asthma, injury). It also found that pain-related diagnoses, including headache and abdominal pain, were more prevalent among alcohol and drug patients. The authors concluded that their findings point to the importance of examining co-morbid medical and chemical dependency in both adolescent primary care and specialty care. For those individuals that continue to misuse alcohol or use other substances these conditions may be ongoing.

**Hospitalizations Related to Drug Abuse, 2005**

In 2005, of the group of patients that reported that they had abused drugs within the past month, a large number reported abusing prescription medications. Most prescription drug abuse involved legally prescribed pain relievers that are often opiate-based, such as oxycodone (OxyContin) and hydrocodone (Vicodin). Many people with a substance abuse disorder do not receive any treatment for their condition. However, when they do, treatment sometimes results from an emergency department visit during which patients are treated for intoxication and drug abuse and then released. Other visits lead to inpatient stays in which drug abuse is diagnosed as a primary or contributing condition. For both drug abuse-related visits and inpatient stays, community hospitals play an important role in treating substance abuse disorders.

This statistical brief presents data from the Healthcare Utilization Cost and Utilization Project (HCUP) on community hospital inpatient stays related to drug abuse in 2005. Statistics on specialty hospitals for drug abuse treatment and ED related treat-and-release visits are not included in these data. Characteristics of drug abuse related stays are compared with all hospitalizations. In addition, variations in drug abuse related hospital stays by patient age and type of drug are examined. Differences in stays by region and expected payer are also discussed. Findings showed that drug abuse stays were six times more likely than typical stays to result in a discharge against medical advice, and that more of the admissions originated in ED than for all other hospital stays. Cocaine abuse was the most frequent reason for hospitalization in 18 to 44 year olds and for 45 to 64 year olds. For elderly patients, opioids were the most frequent named drugs cited for a drug abuse hospitalization. In the South, 393 acute care inpatient stays per 100,000 were related to substance abuse. Private insurance covered less than 20% of the cost associated with these admissions. Medicaid paid for 36.5 percent of the inpatient costs while 17.2 were uninsured. Findings also showed that a large portion of drug abuse hospital stays were uninsured—over three times the rate for all uninsured hospital stays (17.2 versus 5.4 percent).


**Emergency Department Use for Mental and Substance Use Disorders**

This study reviewed how emergency departments (ED) use by adults for mental health substance abuse treatment compared to ED use for two other chronic diseases, diabetes and chronic respiratory disease. The authors defined asthma and Chronic Obstructive Pulmonary Disease as “chronic respiratory disease” for this study because clinicians may not discriminate...
carefully between them in the rushed atmospheres of EDs. These comparator conditions—chronic respiratory disease and diabetes—were selected because they, too, are chronic conditions that when untreated or not managed well frequently require emergency treatment.

The study population was limited to adults (age 18 and older) who used the ED at least once for the selected conditions during 2002. Three types of ED visits were examined: 1) inpatient admissions that occur as a result of an ED visit, 2) repeated inpatient admissions through the ED within a year for the same individual, and 3) repeated treat and release ED visits within a year for the same individual.

The study found that patients with more severe mental and/or substance use disorders were more likely to have multiple ED visits during a year. Also, among the five study conditions, patients with co-occurring mental and substance use disorders were most likely to use ED services repeatedly and at almost twice the rate of patients with the other conditions. This pattern was evident across all measures (with one exception, that patients in the ED with diabetes were most likely to be admitted for inpatient care).

The individuals’ characteristics and the payer source drove ED utilization. There was a two to three times higher rates of uninsured ED visits for patients with substance use disorder (SUD) only, compared to mental disorders and the two physical study conditions (40% to 50% of visits for SUD only between the two states versus 15% to 25% for the other conditions). Second, although uninsured ED visits for mental health and/or SUDs were less likely to result in hospital admission than similar ED visits billed to private insurance, uninsured ED patients with mental health and/or SUDs who were treated and released were more likely to have multiple treat and release ED visits than privately insured patients with the same conditions.


Unmet Substance Abuse Treatment Need, Health Services Utilization and Cost: A Population-Based Emergency Department Study

There is a high prevalence of unmet substance abuse treatment need among adult hospital emergency department (ED) patients. This study examined the association between this unmet need and the excess utilization of health services, and estimated the cost.

A statewide, 2-stage, probability sample survey was conducted in 7 Tennessee general hospital EDs from June 1996 to January 1997. Information was collected through toxicological screening and in-person interviews. Main outcome measures were ED case disposition, frequency of physician office visits, ED visits, hospitalizations in the past 12 months, and costs of excess service utilization. Target substances included ethanol and selected illegal and prescription drugs, but not nicotine.
Compared with patients without substance abuse treatment need (n=1,073), patients with unmet need (n=415) were 81% more likely to be admitted to the hospital during their current ED visit and 46% more likely to have reported making at least one ED visit in the previous 12 months. Their utilization patterns accounted for an estimated $777.2 million in extra hospital charges for Tennessee in 2000 dollars, representing an additional $1,568 per ED patient with unmet substance abuse treatment need.

The authors concluded that ED patients with unmet substance abuse treatment needs generated much higher hospital and ED charges than patients without such needs. Given potential savings from avoidable health care costs, the future burden of substance-associated ED visits and hospitalizations may be reduced through programs that screen and, as appropriate, provide brief interventions or treatment options to these patients.


**Impact of Substance Abuse Disorders on Medical Expenditures for Medicaid Beneficiaries with Behavioral Health Disorders**

This study measured the impact of substance abuse disorders on Medicaid expenditures for behavioral and physical health care among beneficiaries with behavioral health disorders. Claims for Medicaid beneficiaries with behavioral health disorders for 1999 from Arkansas, Colorado, Indiana, New Jersey, and Washington were analyzed. Behavioral health and general medical expenditures were compared to those for persons with a behavioral disorder that did not include substance use. A total of 148,457 beneficiaries met the selection criteria, with 29% having a substance use diagnosis. Compared with other beneficiaries with behavioral health disorders, individuals with a diagnosis of substance use disorder had significantly higher expenditures for treatment for physical care in five of the six states studied. The unadjusted median annual behavioral health and medical care for persons with substance abuse disorders was almost 1.75 times greater than the cost for persons without substance abuse. The reasons for the higher medical expenditures among people with diagnoses of substance use disorders are not completely clear. The authors suggest that the differences in the effects of substance use disorders on medical costs in cost models with and without diagnosis risk adjustments indicate higher rates of co-occurring physical problems associated with addictions contributed significantly to higher costs. The rate of increase of health care costs was also higher with persons with substance use disorders and this increased with age. This difference could be from the cumulative health impact of long-term substance abuse, older patient using primary care services more than specialty substance abuse settings, or more severe chronic disease among older persons with substance use disorders. This suggests that treating the older population may result in decreased hospital costs.


This publication presents national estimates of drug-related visits to hospital emergency departments (ED)s for 2008, based on data from the Drug Abuse Warning Network (DAWN). Also presented are comparisons of 2008 estimates with those for 2004, 2006, and 2007. DAWN is a public health surveillance system that monitors drug-related ED visits for the Nation and for selected metropolitan areas. DAWN estimates pertain to the entire United States, including Alaska, Hawaii, and the District of Columbia. The Substance Abuse and Mental Health Services Administration (SAMHSA) is the agency responsible for DAWN. SAMHSA is required to collect data on drug-related ED visits under section 505 of the Public Health Service Act. DAWN relies on a sample of general, non-Federal hospitals operating 24-hour EDs. The sample is national in scope, with oversampling of hospitals in selected metropolitan areas. In each participating hospital, ED medical records are reviewed retrospectively to find the ED visits that involved recent drug use. All types of drugs—illegal drugs, prescription and over-the-counter pharmaceuticals (e.g., dietary supplements, cough medicine, etc.), and substances inhaled for their psychoactive effects—are included. Alcohol is considered a reportable drug when consumed by patients younger than 21. For patients aged 21 or older, though, alcohol is reported only when it is used in conjunction with other drugs.

In 2008, over 118 million ED visits were made to general-purpose hospitals in the United States. DAWN estimates that over 4.3 million (4,383,494) ED visits were associated with drug use, misuse, or abuse. The number of drug-related visits has increased by over 70 percent from 2004 through 2008. This increase reflects jumps seen in the number of drug-related ED visits involving adverse reactions, accidental drug ingestions, and misuse or abuse of prescription drugs and over the counter medications.

In 2008, DAWN estimates that about 2 million (1,999,861) ED visits resulted from medical emergencies involving drug misuse or abuse. That is the equivalent of more than 650 ED visits per year per 100,000 population. Of the 2 million visits associated with drug misuse or abuse in 2008:
- 33.2% involved nonmedical use of pharmaceuticals only,
- 25.5% involved illicit drugs only,
- 11.5% involved illicit drugs with alcohol,
- 10.4% involved pharmaceuticals with alcohol,
- 8.4% involved illicit drugs with pharmaceuticals,
- 6.6% involved alcohol only in patients younger than 21, and
- 4.3% involved illicit drugs with pharmaceuticals plus alcohol.

Although the overall number of ED visits attributable to drug misuse or abuse was stable from 2004 to 2008, increases were seen in ED visits involving nonmedical use of pharmaceuticals with no other drug involvement (97% increase), pharmaceuticals with illicit drugs (60% increase), and pharmaceuticals with alcohol (50% increase).
DAWN estimates 177,879 drug-related ED visits in 2008 by patients seeking detox or substance abuse treatment services. Males were more likely than females to seek detox services through the ED (74.6 visits per 100,000 population compared with 42.8 visits).


**Hospital Readmissions among Medicaid Beneficiaries with Disabilities: Identifying Targets of Opportunity**

Preventable readmissions offer a key opportunity for states to improve quality and reduce costs. The findings of this study showed that the 30-day readmission rate for Medicaid beneficiaries with disabilities was 16 percent, increasing to 53% when measured over the year. Fifty percent of those readmitted within 30 days did not visit a physician between discharge and readmission. The likelihood of readmission increased with the number of chronic conditions. Diagnostic categories that were highly predictive of readmission include cancers, substance use disorders, hematological disorders, and schizophrenia. The authors concluded that preventable hospital admissions for the populations with a high risk for readmissions offer a key opportunity for states to improve quality and reduce costs.


**John Hopkins Healthcare: Demonstrating a Return on Investment for Integrated Substance Abuse Treatment and Medical Care Management**

John Hopkins Healthcare, a Medicaid health plan in Maryland, completed a study to determine whether the integration of substance abuse outreach and medical care management for Medicaid recipients with substance abuse diagnosis and chronic conditions yields a positive Return on Investment (ROI).

John Hopkins Healthcare examined the first 12 months of claims histories of 603 adult Medicaid enrollees who frequently used medical services and had a recent substance abuse. An intervention group of 400 of these members was targeted for management by substance abuse coordinators and nurse case managers who received training in the integration of medical case management and substance abuse services. A comparison group of 203 members received routine care in the form of separate outreach from substance abuse coordinators and case managers. Results indicate that the intervention group reduced medical costs by $122 per member per month compared with the 12 months prior to the intervention. The comparison group saw an increase in medical expenses by $165 per member per month during the 12 months of the quality initiative compared to the 12 months prior to the intervention. The intervention group's savings were realized through a decrease in 288 admissions per 1,000 members as well as a decrease in 92 days admitted per 1,000 mem-
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...bers. Meanwhile, for the comparison group, hospitalizations decreased by only 150 admissions per 1,000 members, and days admitted decreased by 45 days per 1,000. Although the intervention group with the case coordination services achieved greater savings, access to substance abuse treatment in both the control and the target group resulted in reduced medical care utilization. The researchers report a reduction of costs with the intervention group of $503,616 through the first 12 months relative to baseline. The report estimates a return on investment of $3.65 for every $1 spent on intervention. The write-up of this study was preliminary, however the authors state that the results appear to be financially and clinically significant.


**Alcohol Interventions for Trauma Patients Treated in Emergency Departments and Hospitals: A Cost Benefit Analysis**

This was a cost-benefit analysis. The study population consisted of injured patients treated in an ED or admitted to a hospital. The analysis was restricted to direct injury related medical costs only so that it would be most meaningful to hospitals, insurers, and government agencies responsible for health care costs. Underlying assumptions used to arrive at future benefits, including costs, injury rates, and intervention effectiveness, were derived from published nationwide databases, epidemiologic, and clinical trial data. An estimated 27% of all injured adult patients are candidates for a brief alcohol intervention. The net cost savings of the intervention was $89 per patient screened, or $330 for each patient offered an intervention. The benefit in reduced health expenditures resulted in savings of $3.81 for every $1.00 spent on screening and intervention. This finding was robust to various assumptions regarding probability of accepting an intervention, cost of screening, and risk of injury recidivism. The authors concluded that screening and brief intervention for alcohol problems in trauma patients is cost-effective and should be routinely implemented.


**Bending the Health Care Cost Curve by Expanding Alcohol/Drug Treatment**

In 2005, Washington state expanded the coverage of alcohol and other drug (AOD) treatment. This expanded coverage was targeted for persons enrolled in Medicaid or General Assistance Unemployable (later changed to Disability Lifeline) medical coverage. This report provided information on the key results related to the expansion of coverage. The Washington state data showed that the treatment expansion achieved an impressive return on investment. The researchers estimated that in the first four years of the program there was a return on investment of 2:1. There were two dollars in medical and nursing facility costs saved per dollar invested in expanded AOD treatment. Prior to the treatment expansion, medical
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costs for Medicaid Disabled clients with substance use problems were rising at a significantly greater rate (11 percent annually) than medical costs for Medicaid Disabled clients without substance use problems (8.5 percent annually). Under the AOD treatment expansion initiative, this relationship was reversed with the annual growth for persons with substance abuse problems slowly rising to 2.8 annually while the percent of those without substance abuse programs saw an annual growth of 4.7. The same pattern of significant reductions in rates in growth in costs for clients with substance use problems was observed in the areas of skilled nursing facility costs for Medicaid Disabled patients and medical costs for persons eligible through the General Assistance Unemployable category. The findings were based upon linear forecasting methodologies and data on the rate of growth.


This study was completed by the research division of the Washington State Department of Social and Health Services. Between July 1997 and December 2001, 128,913 adults received SSI benefits in one or more months. Of these clients, 20,902 or 16 percent, were identified as having a need for AOD treatment based on administrative records which included medical diagnosis, treatment procedures, receipt of detoxification or AOD treatment, or arrest for drug or alcohol related offenses. Of this group, 50% were in treatment programs at some time during the 54 month study. The study compared the cost offsets for persons who received treatment as compared to those who did not. The study reports lower medical costs of $380 per client per month as well as savings in psychiatric programs and crime related costs.


Medical Care Use by Treated and Untreated Substance Abusing Medicaid Patients

Medicaid reimbursement costs for county residents at least 18 years old who used a treatment service (n=1043) and residents who were Medicaid enrollees with a substance abuse diagnosis but who did not receive treatment (n=2125) were compared. Untreated patients were more likely to be male, white, and older (over 39). The average monthly Medicaid costs ($257) for the untreated were higher in the year prior to identification than were costs ($207) for the treated. The monthly costs in the six months following identification were $761 for the untreated and $373 for the treated. The costs in the next six months returned to close to the original amount for the treated, while those for the untreated remained high.
er at $340. The cost difference between the treated group and the untreated group, from month 7 to 12 was approximately $133 ($373 - $207). Medicaid enrollees with untreated substance abuse pose a significant cost to the Medicaid system.


**Benefit-Cost in the California Treatment Outcome Project: Does Substance Abuse Treatment “Pay for Itself”?**

This study examined the costs and monetary benefits associated with substance abuse treatment. Primary and administrative data on client outcomes and agency costs from 43 substance abuse treatment providers in 13 counties in California during 2000–2001 were used. This study is superior to prior estimates using California data, which were flawed due in part to lack of a baseline survey, reliance on a discharge sample, a 50% response rate, and self-reported measures of crime. The estimated direct cost of treatment was compared with the associated monetary benefits, including the client’s costs of medical care, mental health services, criminal activity, earnings and transfer program payments. Monetary benefits associated with treatment were estimated using a pre-post treatment admission study design. For the main sample of 2,567 clients, information on medical hospitalizations, emergency room visits, earnings, and transfer payments was obtained from baseline and 9-month follow-up interviews, and linked to information from administrative databases. On average, substance abuse treatment costs $1,583 and is associated with a monetary benefit to society of $11,487. This means that every dollar invested in treatment yields an average of over $7 in benefits. About 65% of the total benefit is attributable to reductions in crime costs (including incarceration), 29% is attributable to increased employment earnings, and 6% is attributable to reduced medical and behavioral health care costs. Broken out by treatment modality, every dollar invested in outpatient treatment yields $11 in benefits and every dollar invested in inpatient treatment yields $6 in benefits. Even without considering the direct value to clients of improved health and quality of life, allocating taxpayer dollars to substance abuse treatment is cost-beneficial.


**Chemical Dependency Treatment Reduces Emergency Room Costs and Visits**

This study examined whether chemical dependency treatment reduces emergency room (ER) visits for SSI clients, compared to SSI clients who need chemical dependency treatment but do not receive it. The study found that there is a significant reduction in ER costs when treatment is provided to SSI clients in need of treatment. Monthly ER costs were reduced by 35 percent for those clients who received treatment. Specifically, ER costs were reduced for this population from $288 per month to $154 per client per month. The
number of ER visits was reduced for both individuals who entered, but did not complete, treatment and individuals who did complete treatment, with fewer visits for those individuals who completed treatment.


Association of Outpatient Alcohol and Drug Treatment with Health Care Utilization and Cost: Revisiting the Offset Hypothesis

This study examines the hypothesis that treatment reduces medical utilization and costs of patients with substance use problems. Adult patients (N = 1,011; 67% men) entering the outpatient chemical dependency recovery program at Sacramento Kaiser Permanente over a 2-year period were recruited into the study. Medical utilization and costs were examined for 18 months prior and 18 months after intake. To account for overall changes in utilization and cost, an age, gender and length-of-enrollment matched non-patient control group (N = 4,925) was selected from health-plan members living in the same service area. The treatment cohort was less likely to be hospitalized and there was a trend for having spent fewer days in the hospital in the post-treatment period compared to pretreatment period. These patients were also less likely to visit the ER and had fewer ER visits following treatment. Inpatient declined by 35%, ER by 39%, and total medical costs by 26%. Among women, there were significant reductions in inpatient, ER, and total costs for the study cohort when compared with the matched sample; among men, the reductions in inpatient and ER cost were significantly larger for the study cohort when compared with the matched sample, but total medical cost reductions were not at statistically significant levels. Changes in cost were significantly different across the various age groups for the study cohort and the matched sample. Among those in the group aged 40-49 years, the decline in cost for the study cohort was significantly larger than for the matched sample. The authors concluded that for patients with substance use disorders entering treatment, there was a substantial decline in inappropriate utilization and cost (hospital and ER) in the post-treatment period. According to the authors, the pattern of post-treatment decline in utilization and cost is suggestive of long-term reductions that warrant a longer follow-up.


Medicaid Chemical Dependency Patients in a Commercial Health Plan: Do High Medical Costs Come Down over Time?

A cohort of 197 Medicaid-insured patients presenting for treatment in Kaiser Permanente’s outpatient chemical dependency treatment program were observed the year prior to their program intake visit and followed for 3 years afterwards, to compare their medical costs and utilization to demographically matched commercially insured patients entering the
same programs. The Medicaid-insured patients on average incurred medical costs 60% higher than non-Medicaid patients during the 12-month pre-intake period ($5,402 versus $3,377). During the 3 years that followed, however, both groups of chemical dependency patients displayed significant declines in medical costs, averaging 30% from the baseline period to the third year of follow-up. Cost trends reflected declines in use of hospital days, ED visits, and nonemergency outpatient visits. These results may help address concerns among Medicaid managed care providers and payers by giving a more realistic account of the long-term costs of this group of high-utilizing enrollees.


The Excess Medical Cost and Health Problems of Family Members of Persons Diagnosed with Alcohol and Drug Problems

Having a family member with substance use problems affects family functioning, which may lead to increased medical problems and increased health care utilization and costs in the other family members. This study sought to estimate the excess medical costs and prevalence of diagnosed health conditions of family members of persons with alcohol or other drug (AOD) problems compared with the family members of similar persons without an AOD. Using a large health plan’s administrative database, the study identified persons who received an AOD diagnosis between 2001 and 2004 and a similar group for comparison with no AOD diagnosis. The analysis determined whether the family members of patients with AODs were more likely than the comparison family members to be diagnosed with a medical condition. The findings revealed that the families of patients with an AOD diagnosis had greater health care costs than comparison families. This was the case for both adult and child family members.


Individuals Receiving Addiction Treatment: Are Medical Costs of their Family Members Reduced?

The purpose of this study was to examine whether AOD treatment is related to reduced medical costs of family members. Using the administrative databases of Kaiser Permanente North California—a private, integrated health plan—this study matched AOD treatment patients with health plan members without AOD disorders on age, gender, and utilization, identifying family members of each group. Family members of abstinent and non-abstinent AOD treatment patients and control family member were included. The study measured abstinence at 1 year post-intake and examined health care costs per member-month of family members of AOD patients and of controls over a five year period. It used general-
ized estimating equation methods to examine differences in average medical cost per member-month for each year, between family members of abstinent and non-abstinent AOD patients and controls. The results showed that AOD patients’ family members had significantly higher costs and more psychiatric and medical conditions than controls in the pre-treatment year. Average medical costs per member per month for family members of non-abstinent AOD patients continued upward for 5 years and were significantly higher than for control family members. The medical cost differences between family members of abstinent patients and control families began narrowing after year 2 post intake and costs were not significantly different in post-abstinence period with health care utilization patterns showing that the family members were using more outpatient and appropriate services (less costly). At year 5, the non-abstinent families had 25% higher health care costs than the control group. Authors concluded that successful AOD treatment is related to medical cost reductions for family members, which may be considered a proxy for their improved health.


### The Effect of Substance Abuse Treatment in Medicaid Expenditures among General Assistance Welfare Clients in Washington State

This study examined that association between substance abuse treatment and reductions in medical care expenditures (primarily Medicaid) for General Assistance (GA) welfare clients in Washington State. The information reported on in the study was pulled from expenditure data sets. The treatment group included 3,235 GA clients who received treatment during 2000 or 2001. The comparison group included 4,863 GA clients who needed substance abuse treatment but did not receive it. The study also included a second comparison group, those who were not in treatment and their client record did not indicate the need for treatment. GA programs are designed to meet the short-term or ongoing needs of low-income persons ineligible for TANF or SSI. Most of the clients later became eligible for Medicaid. The treatment modality was substance abuse outpatient, with the primary use drug as follows: 46.5% alcohol, 19.4% opiates, 11.9 percent cocaine, and 10.4 percent meth-amphetamines. More than 60% of the treatment group reported using drugs or alcohol daily or several times a week. The study found that treatment “paid for itself” in one year of medical cost offsets. In Washington at the time of the study, the average cost of substance abuse treatment for public clients was approximately $2,300 per episode of treatment. The estimated one-year medical offset was $2,500. This accounts for only one year of savings. Potential future savings are very possible.


17 Ibid <16>


