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How Expensive Are Unlimited Substance Abuse Benefits under Managed Care?

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Abstract

Substance abuse (SA) care has been excluded from recent federal and state legislation mandating equal benefits for mental health and medical care ("parity"), largely because of cost concerns. This article studies how many patients are affected by SA coverage limits and the likely implications of limits on insurance payments, using 1996-97 claims from 25 managed care plans with unlimited SA benefits. Changing even stringent limits on annual SA benefits has a small absolute effect on overall insurance costs under managed care, even though a large percentage of SA patients are affected. Removing an annual limit of \$10,000 per year on SA care is estimated to increase insurance payments by about 6 cents per member per year, removing a limit of \$1,000 increases payments by about \$3.40. As long as care is comprehensively managed, "parity" for SA in employer-sponsored health plans is not very costly.

Substance abuse (SA) is a major economic burden on society,¹ and indeed there are claims that the statistical evidence ranks SA "as public health enemy No. 1."² This evidence—together with research documenting that treatment is effective compared with alternatives such as no treatment or incarceration³—suggests that SA treatment should feature prominently in public health policy. However, recent health policy reform efforts have excluded insurance coverage for SA (drug or alcohol) care from legislation mandating equal benefits for mental health and medical care ("parity").^{4,5} For example, the Federal Mental Health Parity Act of 1996 prohibits dollar limits on mental health benefits but not on SA benefits; similarly, the parity bill passed by the California legislature in 1998 does not apply to SA care (although Governor Wilson vetoed the bill, it is likely to be revived under his successor). Since almost all employer-sponsored health plans limit the type or quantity of SA services for which members are eligible, and since benefits for behavioral health have actually decreased in the past 10 years,^{5,6} most individuals with private health insurance are at risk of some or all of the costs of SA treatment, which could increase the gap between the prevalence of treatable disorders and the number of patients receiving care.

One reason for the exclusion of SA care, often explicitly stated, is uncertainty about costs. During debates on the 1996 Parity Act, for example, legislators had to rely on calculations conducted by the Congressional Research Service, which lacked recent data and estimated managed care costs that

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were higher by a factor of 4-8 in comparison with the actual costs in managed care plans that had already implemented parity.⁷ Employers concerned about costs may drop SA services altogether or provide limited benefits when they mistakenly base their decisions on older data. Moreover, the lack of new data reduces the possibility for effective public policies and regulation.

New data are needed because delivery systems have changed dramatically with the growth of managed care, and especially of carve-out programs, which administer mental health and SA care separately from medical care. Between 1992 and 1997, carve-out companies almost doubled their enrollment from 78 to 150 million U.S. citizens and now account for more than 75% of the privately insured population,⁸ which has been the target population for most recent parity legislation. These industry numbers usually include employee assistance programs and utilization review services, which means that the number of people receiving comprehensively managed care through carve-outs is somewhat smaller, possibly by one-third. The growth of carve-outs was accompanied by a change in managed care itself, which now often represents intensive concurrent utilization review of specialty care, compared to primary care gatekeeping mechanisms in Health Maintenance Organizations (HMOs). Nevertheless, actuarial studies informing policy have yet to incorporate this important difference between behavioral health and medical care. Even a recent study by the Substance Abuse and Mental Health Services Administration imposes a medical insurance model that divides the market share about equally between traditional indemnity plans, preferred-provider plans, point-of-service plans, and HMOs,⁹ an assumption that does not reflect the delivery system for SA care among the privately insured population, even though it may be appropriate for medical insurance.

Given the key role of carve-out managed care for SA in employer-sponsored plans and the absence of recent empirical research, this article focuses on this sector to answer the question: what are the costs of removing limits for SA care in carved-out employer-sponsored health plans and how many patients would be affected?

Method

This article studies utilization in 25 plans managed by United Behavioral Health (UBH), the third largest carve-out company in the country. The plans selected are comprehensive (covering structured outpatient, day, residential, inpatient, outpatient care, and recovery homes); have relatively low co-payments (e.g., \$0-\$10 per outpatient session, comparable with co-payments for medical benefits under managed care and significantly lower than the coinsurance rates of 50% of charges for behavioral health care in many indemnity plans); and have no limits on covered SA benefits, whether expressed in dollars, days, sessions, or courses of treatment. However, care is managed and services have to be preauthorized and received through a network provider to be fully covered.

Employers selected have a diverse labor force to maximize the representativeness of the data and to avoid the possibility that generosity of plan benefits is due to particularly healthy members for an employer or an area where there were few (or cheap) providers. Although individuals living in the Midwest and New York are overrepresented in this sample and account for 90% of the data, there are observations from 38 states. Individuals in this sample live in neighborhoods (based on zip code, only age and sex are available at the individual level) that have somewhat lower educational levels than the nation overall (18.2% with four years or more of college vs. 21.3% in the nation), have the same 1990 median household income (\$35,000), and have a lower percentage of minorities (10% versus 15%). After limiting the data to members enrolled for the full calendar, the data set has 258,669 observations (member years).

Claims for all services delivered between January 1, 1996 and December 31, 1997 were obtained and classified into mental health or SA treatment according to the type of service authorized. Dual-diagnosis patients are likely to receive both types of treatments, and their costs are counted according to the authorization type for a specific service. The authorization codes distinguish mental health and

SA for each individual service, whereas diagnostic codes apply only to claims, which usually are composed of several services. For sensitivity analysis, the analysis was repeated by using the primary diagnosis on the claim, but differences between the two approaches are minor. SA users were defined as persons with an authorization code for SA, resulting in 772 observations, 254 of whom received SA care in both years. This corresponds to a rate of 3 SA users per 1,000 members per year, which is exactly the same rate that was found in a much larger sample of provider-sponsored behavioral health plans in 1995,¹⁰ suggesting that the population in the plans selected for this article is representative of a larger employed population at least as far as access patterns to SA care are concerned.

The primary dependent variable for simulating the effects of limits is insurance payments, that is, the total payments by insurers to providers. There was no per unit cost increase from 1996 to 1997 and no need to inflate 1996 costs to make the years comparable. This is consistent with other research that found stable per unit costs for mental health services.¹¹ Analyzing total costs, which is the sum of insurance payments and patient co-payments, was another sensitivity test because coverage limits apply to total costs, not just to the insurance portion of it. In the plans studied, which have very low co-payments, the difference is minimal.

To obtain the effect of adding (or removing) limits, the calculations show what would have happened to insurance payments if these plans had instituted limited coverage and how many patients would have been affected. The results under "no limits" represent actual insurance payments per member among the members in these 25 plans with generous SA benefits. The algorithm to calculate the effects of an annual limit of \$X is the following: identify all patients who had incurred insurance payments above \$X, set the insurance payments for those patients equal to \$X, and then recalculate insurance payments per member. These calculations are valid as long as plans are representative and other health care costs remain constant. To the extent that increased SA care shifts costs away from medical or mental health, these calculations overestimate the cost increase of removing SA limits (or the cost savings to an employer of instituting limits). If administrative costs were to increase because of more claims that need to be reviewed, those calculations would underestimate the cost increase. In addition, if treatment patterns were to change to keep patients under the limits (e.g., to avoid that patients are responsible for costs), the calculations would underestimate the cost changes. Only data on behavioral health care claims are available, not on medical claims, and it is therefore not possible to investigate cost shifting between behavioral health and medical care, or the effect of any cost offset (reduced medical expenses in the future due to stopping SA).

To determine the relevant limits, a comparison was made of 200 employer-sponsored plans managed by UBH that had annual dollar limits specifically for SA care (many other plans have joint limits for SA and mental health care). It was found that the 25th percentile was a limit of \$1,000 per year and the 75th percentile was a limit of \$10,000 per year.

Confidence intervals are calculated by the bootstrap percentile methods to take into account the skewed distribution of cost data and the clustered sample design.¹² A 95% confidence in square brackets after the estimated number is provided where applicable.

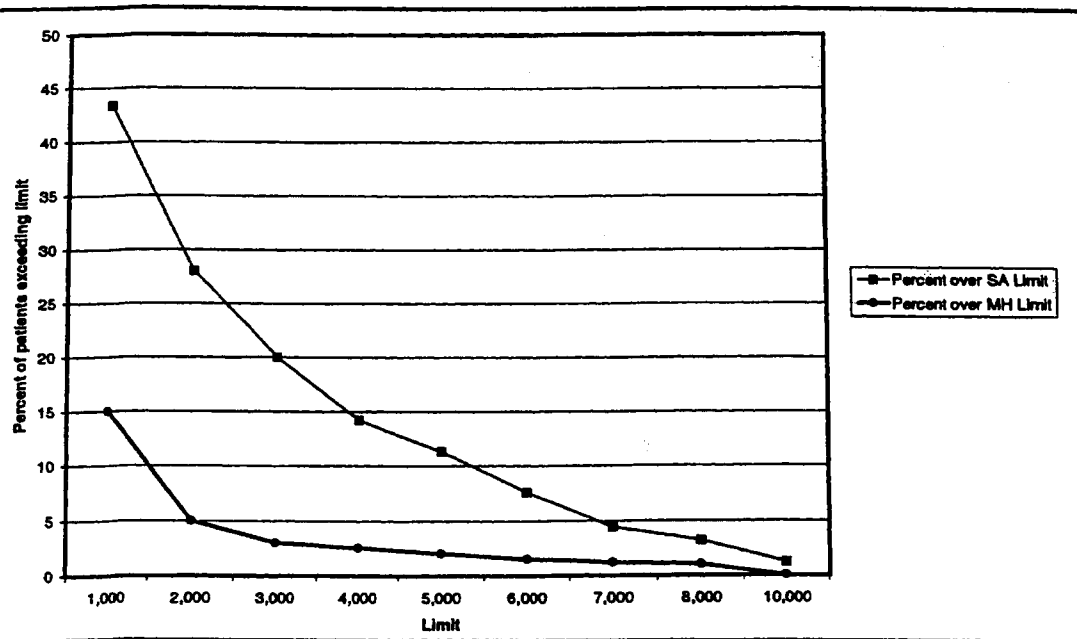
Results

Table 1 provides the cost distribution among users and shows that there is a much larger proportion of high-cost users in SA treatment than the proportion of high-cost users in all behavioral health care (which includes both mental health and SA care). This implies that for every coverage limit, a larger share of SA patients than of mental health patients is affected (Figure 1). For example, while only 2.5% (95% confidence interval [2.3-2.7]) of behavioral health specialty care users (i.e., mental health and/or SA) have treatment costs larger than \$5,000 in one year, 11.4% [9.2-13.5%] of users of SA care have SA treatment costs larger than \$5,000 (Table 1). Moreover, 16.3% [13.7-18.7%] of SA patients have total behavioral health care costs of more than \$5,000. This is also reflected in the mean total behavioral health costs (both mental health and SA care) per patient: \$794 [\$767-\$827] for the

Table 1
The Distribution of Substance Abuse and Behavioral Health Costs, 1996-97

	Substance Abuse Care	Any Behavioral Health Specialty Care
Number of users per 1,000 per year	3	60
Among users, percentage in each bracket		
\$1-\$100	27.3	13.2
\$101-\$250	9.8	25.4
\$250-\$500	10.6	25.0
\$501-\$1,000	9.0	20.1
\$1,001-\$2,500	20.8	11.6
\$2,501-\$5,000	11.1	2.3
\$5,001-\$10,000	10.1	1.7
> \$10,000	1.3	0.8

Figure 1
Percentage of Mental Health and Substance Abuse Users Exceeding \$ Limit



average user of any behavioral health specialty care, but \$2,319 [\$2,089-\$2,542] for behavioral health costs of SA patients, of which about three-fourths are for SA treatment costs (\$1,717 [\$1,562-\$1,886]).

Table 2 provides the calculations of the effects of limits and shows that unlimited benefits resulted in insurance payments of \$5.11 for SA care per member in 1996-97, whereas an annual limit of \$10,000 would have resulted in total SA costs of \$5.05 per member per year, a difference of only 6 cents. To compare, an earlier study put the insurance payments for mental health care under

Table 2
The Effects of Limits on Insurance Payments for Substance Abuse Care
(in dollars per member per year)

Type of Limit	All	Employee	Adult Dependent	Child Dependent
No limits	5.11	8.33	5.19	0.80
\$10,000 annual limit	5.05	8.18	5.17	0.80
\$5,000 annual limit	4.33	7.00	4.41	0.75
\$1,000 Annual Limit	1.72	2.78	1.73	0.31

unlimited benefits at \$44 and under a \$10,000 limit at \$40 per member per year, a difference of \$4.⁷ A \$10,000 limit on SA treatment would have been binding for about 1.3% of SA users (10 out of 772 patients). Similarly, under a \$5,000 limit, insurance payments would have been only 78 cents lower than without the limit, but 11.3% of SA users (88/772) would have been left without insurance coverage for part of their care under such a limit. Finally, a very stringent limit of \$1,000 per year on SA insurance payments would have lowered costs by about \$3.40 per member per year but would have imposed a serious financial burden on 43% of the SA users.

These are calculations based on the same data, thus statistical tests of the effect of the limit are not meaningful. However, it is useful to compare the effect of limits to the variation that one can expect in costs in a population of this size. The standard error of annual costs per member per year (\$5.11) is 32 cents and a 95% confidence interval is [\$4.48-5.73], and this reflects more than a one-fourth million insurance years. Hence, the cost increase of removing a \$10,000 limit is negligible compared to the natural variance in the mean of even a very large population and not an effect size that any self-insured employer would be able to detect.

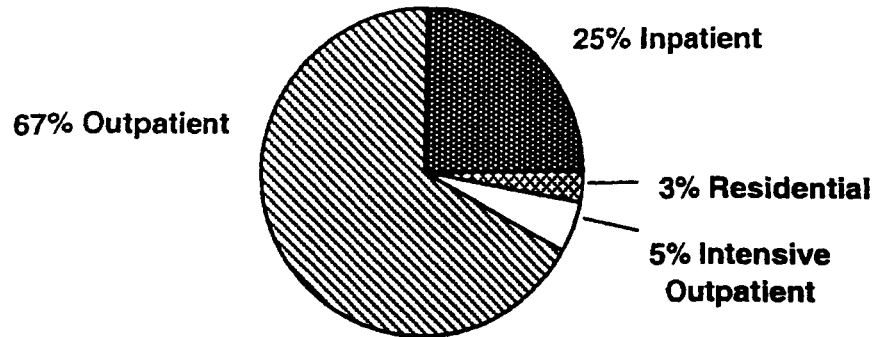
Table 2 also breaks out how different groups are affected by limits. Employees account for the largest costs, child dependents the smallest. The standard error differs by group (it is largest for employees under unlimited benefits, about 50 cents) but is small relative to the differences between each group, which are all statistically significant ($p < 0.01$). In contrast to mental health limits, which affect children the most and employees the least,⁷ limits on SA have by far the largest effects on costs for employees.

Figure 2 shows the breakdown of treatment costs by type of service and illustrates the distinct utilization patterns for mental health and SA. For mental health (MH) care, two-thirds of treatment costs are for outpatient services, whereas traditional outpatient care accounts for only a small fraction of SA costs. Instead, about 70% of the SA costs are due to intermediate forms of treatment (intensive outpatient and residential), which account for only a small fraction of MH costs. Thus, the typical treatment mode for SA is more costly per unit of service, which is one of the reasons why the average SA user has higher treatment costs than the average MH user. Of course, this is also related to patient illness, and the majority of MH users are diagnosed with relatively minor problems (adjustment disorder, anxiety, v-codes), which explains why about two-thirds of MH patients, but less than one-half of SA patients, have treatment costs under \$500. Five hundred dollars corresponds to 6-8 individual outpatient sessions or one hospital day.¹¹ Inpatient care accounts for about one-fourth of treatment costs for SA and MH, which reflects the dramatic change brought by managed care as even the most recent actuarial models attribute half of mental health care costs to inpatient care in the fee-for-service sector.^{7,9}

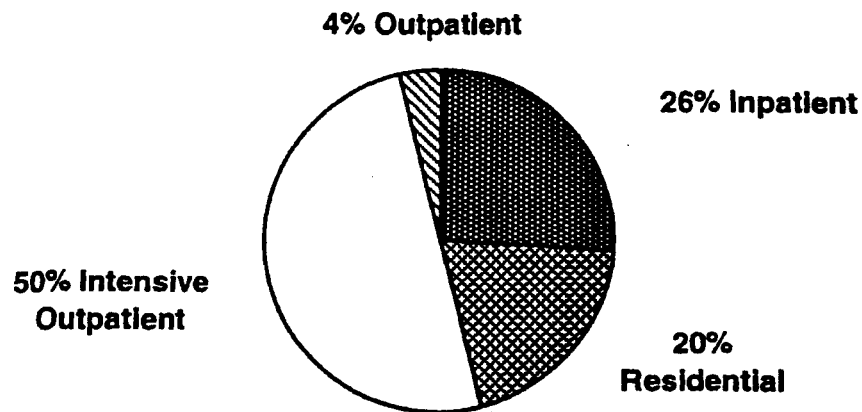
In response to the Federal Mental Health Parity Act of 1996—which prohibits dollar limits on MH benefits but not on SA benefits—virtually all behavioral health contracts are being revised. Some employers who have had identical MH and SA benefits have started to decouple MH and SA

Figure 2
Treatment Types under Managed Care (proportion of total insurance payments)

Mental Health



Substance Abuse



benefits, but the results show that the cost consequences of removing limits on SA benefits are small. This finding suggests that decoupling will not provide substantial savings, but it could create difficulties in coordinating treatment and lead to less efficient care, a significant concern given the high proportion of individuals with both MH and SA problems. In the data, 5% of all behavioral health users received some SA treatment, but 33% of all users with annual behavioral health costs greater than \$5,000 received SA treatment (and all of the high-cost users also incurred some MH costs).

Annual insurance costs for the behavioral health care plans studied here were \$5.11 per member or 43 cents per member per month. Assuming a total annual HMO insurance premium of \$1,500 per member, SA treatment under unlimited benefits represents about 0.3% of an employer's total health care costs in managed care; this percentage is even lower for employers with a less managed—and thus more expensive—medical care plan paired with carved-out behavioral health care coverage. Since most employers who offer health insurance also offer behavioral health benefits and almost all of them include some SA coverage, the cost *increase* associated with parity for SA care would be smaller yet.

It is also important to consider what happens to individuals exceeding current coverage limits. The insurance payments for the average SA patient exceeding \$1,000 are \$3,639 and \$7,330 for patients exceeding \$5,000. This means that about \$2,500 of treatment that was provided in an intensively managed care plan without limits (and presumably considered medically necessary) is uncovered for patients exceeding coverage limits. Very few patients would pay this amount out-of-pocket and the most likely scenarios are premature treatment termination or switches to the public sector.

The distribution of SA insurance payments based on the most recent data from actual plans (Table 1) provides users of actuarial models with a way to check the assumptions of the models they employ. As noted above, behavioral health practice patterns have changed dramatically with the introduction of new therapies and of carve-out organizations. The need for new information may be even more important for SA care, which is often subsumed under MH care, despite having a substantially different cost distribution from MH care (Table 1).

While a deeper analysis of treatment patterns or the content of care is beyond the scope of this article, the breakdown of the cost share of different types of services in Figure 2 provides an indication of the change that has occurred in the private sector. In the past, inpatient care (detox) accounted for almost all SA costs, primarily because insurance benefits were often limited to either inpatient or standard outpatient services and excluded intermediate types of treatment, such as residential settings or recovery homes. In this sample, 25% of SA care costs were for inpatient care, 20% were for residential care, 50% were for structured outpatient care and recovery homes, and the remainder was for outpatient care.

These patterns suggest that actuarial models used to inform health reform debates need to reflect current practice patterns in SA treatment, and—as has been shown for MH⁷—that those based on older data may be misleading. There is no question that carve-out care is associated with very tight management. How this affects quality of care and outcomes remains an open question, but recent studies found that the switch from unmanaged care or from traditional HMOs to carve-outs was associated with increased quality of care as measured by follow-up rates after inpatient detox¹³ and inpatient care for depression.¹⁴ The growth of intermediate services also suggests that low costs do not automatically imply less or lower quality care but possibly just different types of care.

Quality and cost-effectiveness for SA care are areas that employers should be interested in because the majority of SA users are employees (and also account for the majority of SA costs).¹⁰ In contrast, many other health issues have little effect on productivity and employers are understandably wary of claims that better care would improve the business bottom line. For example, the users with the highest MH costs are dependents, not employees, and the largest absolute cost changes associated with MH parity are among children, not employees, whereas the opposite result holds for SA care.⁷

Unfortunately, it is not yet possible to quantify the social impact or the cost-effectiveness of removing limits. Cost-effectiveness research on SA treatment is in its infancy and comprehensive evaluation methods have only been recently suggested.¹⁵ Of course, the policy debate itself remains focused on the narrow question of the cost effect on insurance, but future research might help to broaden the debate to include the public health impact of improved private insurance for SA treatment. For example, longer time in drug abuse treatment was found to have a positive and statistically significant impact on labor market outcomes in at least one study¹⁶ and as much as one-fifth of medical inpatient costs might be attributable to SA-related conditions.¹⁷

Implications for Behavioral Health Services

Limits on annual SA benefits tend to be more restrictive than for MH and affect a large percentage of SA patients. Patients losing insurance coverage are likely to end treatment prematurely or switch to the public sector, both of which are undesirable scenarios. In contrast to the common belief that unlimited SA benefits will break the bank and therefore are not a realistic policy option, "parity" for SA in employer-sponsored health plans is affordable under comprehensively managed care. Although there are concerns that tight management may affect the most severely ill patients, there is little doubt that "parity"-level benefits under managed care would increase continuity of treatment and reduce dumping of the more severely ill patients into the public sector, compared to the current situation where those patients are exceeding coverage limits.

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References

1. Rice DP, Kelman S, Miller LS, et al.: *The Economic Costs of Alcohol and Drug Abuse and Mental Illness: 1985*. San Francisco: University of California, Institute for Health & Aging, 1990.
2. Califano JA: Substance abuse and addiction—The need to know. *American Journal of Public Health* 1998; 88(1):9-12.
3. McLellan AT, Woody GE, Metzger D, et al.: Evaluating the effectiveness of addiction treatments: Reasonable expectations, appropriate comparisons. *Milbank Quarterly* 1996; 74(1):51-85.
4. Frank RG, Koyanagi C, McGuire TG: The politics and economics of mental health parity laws. *Health Affairs* 1997; 16:108-119.
5. Sturm R, McCulloch J: Mental health and substance abuse benefits in carve-out plans and the Mental Health Parity Act of 1996. *Journal of Health Care Finance* 1998; 24:84-95.
6. *Health Care Plan Design and Cost Trends—1988 through 1997*. Washington, DC: Hay Group, 1998.
7. Sturm R: How expensive is unlimited mental health care coverage under managed care? *Journal of the American Medical Association* 1997; 278(18):1533-1537.
8. Oss ME, Drissel AB, Clary J: *Managed Behavioral Health Market Share in the United States, 1997-1998*. Gettysburg, PA: Behavioral Health Industry News, 1997.
9. Sing M, Hill S, Smolkin S, et al.: *The Costs and Effects of Parity for Mental Health and Substance Abuse Insurance Benefits*. DHHS Pub. No. 98-3205. Rockville, MD: Center for Mental Health Services, Substance Abuse and Mental Health Services Administration, 1998.
10. Schoenbaum M, Zhang W, Sturm R: Costs and utilization of substance abuse care in a privately insured population under managed care. *Psychiatric Services* 1998; 49(11):1573-1578.
11. Goldman W, McCulloch J, Sturm R: Costs and utilization of mental health services before and after managed care. *Health Affairs* 1998; 17(2):40-52.
12. Efron B, Tibshirani R: *An Introduction to the Bootstrap*. London, New York: Chapman & Hall, 1993.
13. Stein B, Orlando M, Sturm R: Follow-Up Care after Inpatient Detoxification under Managed Care. Unpublished paper, UCLA/RAND Center on Managed Care for Psychiatric Disorders, Los Angeles, 1998.
14. Merrick EL: Treatment of major depression before and after implementation of a behavioral health carve-out plan. *Psychiatric Services* 1998; 49(11):1563-1567.
15. French MT, McGeary KA: Estimating the economic cost of substance abuse treatment. *Health Economics* 1997; 6(5):539-544.
16. French MT, Zarkin GA, Hubbard RL, et al.: The impact of time in treatment on the employment and earnings of drug abusers. *American Journal of Public Health* 1991; 81(7):904-907.
17. Fox K, Merrill JC, Chang HH, et al.: Estimating the costs of substance abuse to the Medicaid hospital care program. *American Journal of Public Health* 1995; 85(1):48-54.

