Final Report:

The Economic Impact of Methamphetamine Use in Benton County, Arkansas

Produced for Drug Free RogersLowell

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Executive Summary

Methamphetamine use among the employed population is on the rise as general methamphetamine use increases. Many employers are unaware of the extent of the methamphetamine crisis and the harmful effects that employee methamphetamine use has on the firm. While methamphetamine use is associated with tremendous expenses for society in the form of direct health care, law enforcement, and environmental costs, this study focuses exclusively on the increased costs that firms bear as a result of the methamphetamine use of their employees. The Benton County Methamphetamine Task Force commissioned this project from the Center for Business and Economic Research in the Sam M. Walton College of Business at the University of Arkansas. As a result, the focus of the cost estimates is Benton County, Arkansas. This study is the first of its kind that deals specifically with the cost of methamphetamine use to employers. However, the methodology employed in this study could be replicated for any community that is facing the methamphetamine use epidemic that has developed in recent years.

The first step of this project involved an extensive information gathering effort. There were two main focuses of the literature review. First was an attempt to gather all recent information about local and national methamphetamine abuse rates, and where that information was not available, to gather local and national substance abuse rates as a proxy. Second was an investigation into previous work related to the costs of methamphetamine and other illegal substance abuse on the workplace. The results of this investigation led to the identification of six categories of costs that methamphetamine users impose on their employers. These categories are increased absenteeism, lost productivity, increased turnover, increased employee theft, increased worker compensation claims, and increased healthcare premium costs. The literature review is included as Appendix A at the conclusion of this report.

The next stage of this study involved administering a survey about methamphetamine usage to employees in Benton County. This survey would provide supplemental information to the national estimates that are available about methamphetamine use and the workplace. Fifty-one Benton County employers, representing 2,934 workers, agreed to administer the survey to their employees. Responses were received from 648 workers, which made the response rate 22.1 percent. As the workers were being asked to talk about participating in illegal activities, this was a very good percentage. Demographically, individuals at all income levels, both genders, and all ethnicities were represented in the survey, although individuals of Hispanic origin were significantly underrepresented. Of the 648 respondents, 4.3 percent admitted to using methamphetamine at some point in their lives and 0.5 percent admitted to using methamphetamine within the last year. Other interesting results showed that 1.4 percent of the respondents had reported ever using methamphetamine while at work and 0.9 percent reported taking unplanned sick or personal days because of their methamphetamine use.

As a final step in the process of this study, estimates were calculated for the cost of worker methamphetamine use to employers in Benton County. Preliminary estimates were made using national substance user employment estimates and applying these numbers to Benton County population data. Using this methodology, 446 employees in Benton County were estimated to be currently employed and methamphetamine users. The total cost that these employees imposed on their employers was estimated at just over $21 million, annually. On average, these employees cost their employers just under $47,500 each with about 50 percent of the cost due to increased absenteeism and approximately another 32 percent due to lost productivity. As a check on these results, a second methodology was adopted where the survey sample percentage of respondents who indicated that they used methamphetamine in the past month was applied to the September 2004 Benton County employment numbers, as reported by the Arkansas Employment Security Division. The result of this estimation was the 425 workers in Benton County were estimated to be current methamphetamine users. Using this estimate, the total cost of the employed methamphetamine users in Benton County to their employers is just over $20 million, annually. Therefore, using a range of $20 million to $21 million is likely to capture the actual annual effect of worker methamphetamine use to their employers' bottom lines.

Introduction

Substance abuse in the workplace is not a new problem. Many companies have instituted a variety of policies to protect themselves against the costs that substance abusers impose on them. Large companies are much more likely to have drug-free workplace policies, to have some kind of employee drug testing, and to have employee assistance programs in place to help deal with the issues that surround substance abuse. However, only recently has the extent of methamphetamine use in the general and working population become a topic of concern. In particular, methamphetamine use imposes tremendous costs to society. This report attempts to quantify the effect of methamphetamine use in Benton County, Arkansas on local employers,

Methamphetamine use has many costs that are beyond the scope of this report. Anecdotal evidence suggests that methamphetamine use is directly or indirectly responsible for most of the violent crime that occurs in Benton County. Methamphetamine abusers enter the criminal justice system and consume taxpayer resources that could be put to other important uses. The healthcare costs associated with methamphetamine use are passed along to all consumers and taxpayers in the forms of higher insurance premiums and use of Medicare and Medicaid dollars. There are significant environmental effects associated with the manufacturing of methamphetamine and clean-up is expensive. While employers may be aware of all of these things, the estimates produced in this report are designed to show, on an annual basis, the total cost of employee methamphetamine use to the bottom line of Benton County businesses.

The report is divided into three sections. The first is a literature review that catalogs existing estimates of methamphetamine abuse, both in the United States and in Benton County, where available. The next section reports the results of a survey of Benton County employees about their work habits and methamphetamine use. The survey results provide a complement to the national statistics and corroborate many previous national findings as relevant to Benton County. The final section includes two economic estimations of the total costs of worker methamphetamine use in Benton County. The first estimate uses national rates to estimate the number of Benton County employees who are methamphetamine abusers, while the second estimate uses the sample proportion of recent methamphetamine users in Benton County, applied to September 2004 Benton County employment numbers.

Results indicate the total annual costs of methamphetamine use to employers in Benton County is staggering. Further, this amount represents only a small fraction of the total societal costs of methamphetamine use. Optimally, as employers become aware of the direct cost that methamphetamine-using workers are imposing, they will consider their ability to reduce usage that could benefit both the firm and society at large.

Survey Results

In conjunction with the staff at Drug Free RogersLowell, a survey instrument was developed to help measure the impact of methamphetamine use on Benton County employers. The survey was delivered to 51 participating employers who represented 2,934 employees. Completed surveys were received from 648 employees for a response rate of 22.1 percent.

The survey began with demographic and economic questions about the respondents. Respondents first were asked an open-ended question about the industry in which they work. Analysts from the CBER then coded the answers to fall into one of the twenty major categories in the NAICS coding system. The breakdown of the responses to the question is listed in Table 1. The categories with the largest number of respondents were Finance and Insurance and Public Administration. The two categories accounted for the industries of 40.4 percent of the respondents.

Table1—Question 1: In what industry do you work?

Response Category	Number of Responses	Percentage of Responses	95% Confidence Lower Bound	95% Confidence Upper Bound
Agriculture, Forestry, Fishing and Hunting	2	0.3%	0.0%	0.7%
Mining	0	0.0%	-	-
Utilities	10	1.6%	0.6%	2.5%
Construction	5	0.8%	0.1%	1.5%
Manufacturing	74	11.6%	9.1%	14.1%
Wholesale Trade	8	1.3%	0.4%	2.1%
Retail Trade	42	6.6%	4.7%	8.5%
Transportation and Warehousing	15	2.4%	1.2%	3.5%
Information	35	5.5%	3.7%	7.3%
Finance and Insurance	144	22.6%	19.4%	25.9%
Real Estate and Rental and Leasing	15	2.4%	1.2%	3.5%
Professional, Scientific, and Technical Services	17	2.7%	1.4%	3.9%
Management of Companies	0	0.0%	-	-
Administrative and Support and Waste Management Services	22	3.5%	2.0%	4.9%
Education	14	2.2%	1.1%	3.3%
Health Care and Social Assistance	46	7.2%	5.2%	9.2%
Arts, Entertainment, and Recreation	27	4.2%	2.7%	5.8%
Accommodations and Food Service	11	1.7%	0.7%	2.7%
Other Services	36	5.7%	3.9%	7.5%
Public Administration	113	17.8%	14.8%	20.7%

A similar question was asked regarding the occupations of the respondents. Again, respondents replied to an open-ended question and CBER analysts coded the responses to correspond with the Standard Occupation Classification (SOC) system. The two categories with the most responses were Office and Administrative Support and Business and Financial Operations. Those categories accounted for about 40.9 percent of all received responses. Table 2 reports the full results of the occupation question.

Table 2—Question 2: What is your occupation?

Response Category	Number of Responses	Percentage of Responses	95% Confidence Lower Bound	95% Confidence Upper Bound
Management	65	10.5%	8.1%	12.9%
Business and Financial Operations	133	21.5%	18.3%	24.7%
Computer and Mathematical	4	0.6%	0.0%	1.3%
Architecture and Engineering	2	0.3%	0.0%	0.8%
Life, Physical, and Social Science	3	0.5%	0.0%	1.0%
Community and Social Services	7	1.1%	0.3%	2.0%
Legal	7	1.1%	0.3%	2.0%
Education, Training, and Library	27	4.4%	2.8%	6.0%
Arts, Design, Entertainment, Sports, and Media	34	5.5%	3.7%	7.3%
Healthcare Practitioners and Technical	11	1.8%	0.7%	2.8%
Healthcare Support	9	1.5%	0.5%	2.4%
Protective Services	57	9.2%	6.9%	11.5%
Food Preparation and Serving Related	4	0.6%	0.0%	1.3%
Building and Grounds Cleaning and Maintenance	12	1.9%	9.9%	3.0%
Personal Care and Service	4	0.6%	0.0%	1.3%
Sales and Related	48	7.8%	5.6%	9.9%
Office and Administrative Support	120	19.4%	16.3%	22.5%
Farming, Fishing, and Forestry	2	0.3%	0.0%	0.8%
Construction and Extraction	3	0.5%	0.0%	1.0%
Installation, Maintenance, and Repair	35	5.7%	3.8%	7.5%
Production	23	3.7%	2.2%	5.2%
Transportation and Materials Moving	9	1.5%	0.5%	2.4%
Military Specific	0	0.0%	-	-

The third question asked the respondents to report their ages. The responses were grouped into six categories and percentages were calculated. Almost equal percentages were reported for those in the 26-35, 36-45, and 46-55 year age brackets. These three groups contained 68.3 percent of the respondents. Table 3 contains the complete results of the age question.

Table 3—Question 3: What is your age?

Response Category	Number of Responses	Percentage of Responses	95% Confidence Lower Bound	95% Confidence Upper Bound
17-25	84	13.4%	10.7%	16.1%
26-35	146	23.3%	20.0%	26.6%
36-45	139	22.2%	18.9%	25.4%
46-55	143	22.8%	19.5%	26.1%
56-65	75	12.0%	9.4%	14.5%
66+	40	6.4%	4.5%	8.3%

A gender question followed the age question. Slightly more females than males responded to the survey, although there was no statistical difference in the percentage of respondents. Table 4 shows the gender breakdown of the survey respondents.

Table 4—Question 4: What is your gender?

Response Category	Number of Responses	Percentage of Responses	95% Confidence Lower Bound	95% Confidence Upper Bound
Male	313	48.8%	44.9%	52.7%
Female	329	51.2%	47.3%	55.1%

The survey instrument then included a question designed to elicit information about the respondents' ethnicities. Respondents were allowed to designate as many answers as they chose, so summing the percentages included in Table 5 will not yield 100 percent. Respondents who identified themselves as being white accounted for over 94 percent of all answers, while according to the 2000 U.S. Census, whites made up 90.9 percent of the overall population in Benton County. African American and Asian respondents accounted for proportions roughly the same as in the 2000 U.S. Census, while Hispanic respondents were significantly underreported relative to the 8.8 percentage of individuals in Benton County in the 2000 U.S. Census.

Table 5—Question 5: What is your ethnicity?

Response Category	Number of Responses	Percentage of Responses	95% Confidence Lower Bound	95% Confidence Upper Bound
White	603	94.1%	92.2%	95.9%
Hispanic	17	2.7%	1.4%	3.9%
African American	5	0.8%	0.1%	1.5%
Asian	6	0.9%	0.2%	1.7%
Other	14	2.2%	1.1%	3.3%

The next question was designed to obtain information about the highest level of educational attainment achieved by the respondents. The respondents to this survey were

more likely to have undergraduate and graduate degrees than the Benton County respondents of the 2000 U.S. Census. The proportion of graduate degree holders was three times that reported by the 2000 U.S. Census for Benton County and the proportion of undergraduate degree holders was twice that of the Benton County population in the 2000 U.S. Census. Those individuals with less than a high school degree were underrepresented among the respondents, as were those with only a high school diploma. Table 6 presents the full results of answers to the question.

Table 6—Question 6: What is your educational attainment?

Response Category	Number of Responses	Percentage of Responses	95% Confidence Lower Bound	95% Confidence Upper Bound
Some high school	28	4.4%	2.8%	5.9%
High school graduate	312	48.5%	44.7%	52.4%
Undergraduate degree	187	29.1%	25.6%	32.6%
Graduate/professional degree	116	18.0%	15.1%	21.0%

Question 7 deals with the employee's tenure with his or her current employer. Over 78 percent of the respondents had been with their employers more than one year. Full results of the survey item are presented in Table 7.

Table 7—Question 7: How long have you been with your current employer?

Response Category	Number of Responses	Percentage of Responses	95% Confidence Lower Bound	95% Confidence Upper Bound
Less than 6 months	65	10.1%	7.8%	12.4%
Between 6 months and 1 year	73	11.4%	8.9%	13.8%
Between 1 year and 5 years	241	37.5%	33.7%	41.2%
More than 5 years	264	41.1%	37.3%	44.9%

For the year 2002 (the most recent data available), per capita personal income in Benton County was $26,789, according to the U.S. Bureau of Economic Analysis. The average respondent to this survey had an income that was 48.2 percent higher than the average Benton County resident's income. The average annual gross income and 95 percent confidence intervals for the 547 respondents who answered this question are reported in Table 8.

Table 8—Question 8: What is your annual gross income?

Response Category	Number of Responses	Average Annual Gross Income	95% Confidence Lower Bound	95% Confidence Upper Bound
Average Gross Annual Income	547	$39,700	$37,029	$42,370

After the income question, the survey instrument turned toward the workplace and drug habits of the respondents. The next question asked how many unplanned personal or sick days that the respondent took, on average, in a month. Over 99 percent of the respondents indicated that the number was either zero or one and no respondents indicated that they took more than five days per month, on average. Table 9 presents the full results.

Table 9—Question 9: On average, how many times per month do you take unplanned personal or sick days?

Response Category	Number of Responses	Percentage of Responses	95% Confidence Lower Bound	95% Confidence Upper Bound
One day or less per month	599	98.4%	97.3%	99.4%
Two to three days per month	8	1.3%	0.4%	2.2%
Four to five days per month	2	0.3%	0.0%	0.8%
More than five days per month	0	0.0%		

The following question asked about lifetime methamphetamine use. Table 10 shows the breakdown of results to this important question. A total of 4.7 percent of the respondents indicated that they had ever used methamphetamine. This percentage is almost identical to the national result found through physical drug testing by Quest Diagnostics Incorporated in 2003. Also, the 2002 National Survey on Drug Use and Health found that 5.3 percent of its sample population had ever used methamphetamine and this would be within the 95 percent confidence range of this survey's responses.

Table 10—Question 10: Have you ever used methamphetamine?

Response Category	Number of Responses	Percentage of Responses	95% Confidence Lower Bound	95% Confidence Upper Bound
Never	612	95.3%	93.7%	97.0%
More than one year ago	27	4.2%	2.7%	5.8%
Within the last year	2	0.3%	0.0%	0.7%
Within the last month	1	0.2%	0.0%	0.5%

As a follow-up to the question about lifetime methamphetamine use, a question was asked about recent methamphetamine use. Only six survey respondents answered this question, meaning that there are not enough data points to say anything meaningful. The results of these six responses are presented in Table 11.

Table 11—Question 11: When was your most recent use of methamphetamine?

Response Category	Number of Responses	Percentage of Responses	95% Confidence Lower Bound	95% Confidence Upper Bound
Today	4	66.6%	28.9%	100.0%
This week	0	4.2%		
Two weeks ago	0	0.3%		
This month	2	33.3%	0.0%	71.1%

Question 12 of the survey asked if the respondents had ever used methamphetamine while at work. Eight respondents or 1.4 percent of the sample indicated that they had done so at some point. The full results are reported in Table 12.

Table 12—Question 12: Have you ever used methamphetamine while at work?

Response Category	Number of Responses	Percentage of Responses	95% Confidence Lower Bound	95% Confidence Upper Bound
Never	563	98.6%	97.8%	99.6%
Rarely	2	0.4%	0.0%	0.8%
Occasionally	3	0.5%	0.0%	1.1%
Frequently	3	0.5%	0.0%	1.1%

There was a follow up question to determine whether other methamphetamine use had spilled over into the workplace. However, the same eight respondents who had indicated methamphetamine use at work responded that they had been under the influence of methamphetamine at work and no other respondents had a positive indication. Table 13

Table 13—Question 13: Have you ever been under the influence of methamphetamine while at work?

Response Category	Number of Responses	Percentage of Responses	95% Confidence Lower Bound	95% Confidence Upper Bound
Never	564	98.9%	98.1%	99.8%
Rarely	2	0.4%	0.0%	0.8%
Occasionally	3	0.5%	0.0%	1.1%
Frequently	3	0.5%	0.0%	1.1%

Another follow up question about workplace methamphetamine use was whether or not the respondent's performance at work had ever been affected by their own methamphetamine use. Only seven respondents, 1.3 percent of the total, indicated that their work had been affected by methamphetamine use. Table 14 details the responses.

Table 14—Question 14: Has your performance at work ever been affected by your methamphetamine use?

Response Category	Number of Responses	Percentage of Responses	95% Confidence Lower Bound	95% Confidence Upper Bound
Never	524	98.7%	97.7%	99.7%
Rarely	3	0.6%	0.0%	1.2%
Occasionally	3	0.6%	0.0%	1.2%
Frequently	1	0.2%	0.0%	0.6%

Question 15 deals with absenteeism because of methamphetamine use. Only 0.9 percent of the respondents indicated that they had ever used an unplanned sick or personal day because of their methamphetamine use. So, not all of those respondents who reported using methamphetamine at work or being under the influence of methamphetamine at work reported taking days off because of their use. Full results of the answers to this question are in Table 15.

Table 15—Question 15: Have you ever taken an unplanned sick or personal day because of your methamphetamine use?

Response Category	Number of Responses	Percentage of Responses	95% Confidence Lower Bound	95% Confidence Upper Bound
Never	531	99.1%	98.3%	99.9%
Rarely	2	0.4%	0.0%	0.9%
Occasionally	2	0.4%	0.0%	0.9%
Frequently	1	0.2%	0.0%	0.6%

The last two questions regard whether the respondents have ever been under the influence of any illegal drug or alcohol while at work. 3.3 percent of respondents answered that they had indeed worked under the influence of drugs or alcohol. 2.9 percent of the respondents indicated that their work performance had been affected at least rarely by the use of alcohol or illegal drugs. Full results are in Tables 16 and 17.

Table 16—Question 16: Have you ever been under the influence of alcohol or illegal drugs while at work?

Response Category	Number of Responses	Percentage of Responses	95% Confidence Lower Bound	95% Confidence Upper Bound
Never	609	96.7%	95.3%	98.1%
Rarely	11	1.7%	0.7%	2.8%
Occasionally	9	1.4%	0.5%	2.4%
Frequently	1	0.2%	0.0%	0.5%

Table 17—Question 17: Has your performance at work ever been affected by the use of alcohol or illegal drugs?

Response Category	Number of Responses	Percentage of Responses	95% Confidence Lower Bound	95% Confidence Upper Bound
Never	579	97.1%	95.8%	98.5%
Rarely	13	2.2%	1.0%	3.4%
Occasionally	3	0.5%	0.0%	1.1%
Frequently	1	0.2%	0.0%	0.5%

The results of this survey, administered in the fall of 2004 by participating Benton County employers to their workers further bolsters the evidence from national sources about methamphetamine use and the workplace.

In order to derive more informative statistics from the survey data, CBER analysts estimated a multinomial logit model to determine which demographic variables had statistically significant effects on the likelihood of the respondent having ever used methamphetamine. Three characteristics had significant effects at the 95% confidence level. First, females were 0.7 percent less likely to have ever used methamphetamine than males. Second, respondents having at least a high school diploma were about 1.0% less likely to be methamphetamine users than high school dropouts. This effect was not significantly different for college graduates or for those with graduate degrees than for those with high school diplomas. Finally, for every additional $10,000 in income that a respondent reported, there was a decrease of 0.2 percent in the likelihood that the respondent had ever used methamphetamine. Full results are reported in Appendix A.

Economic Impact

The economic impact of methamphetamine use on employers can be separated into six major categories:

- Increased worker absenteeism,
- Decreased worker productivity,
- Increased employee turnover,
- Increased employee theft,
- Increased worker compensation claims, and
- Increased employer healthcare costs.

A wide variety of studies have been conducted that have estimates for the different aspects of the costs of methamphetamine use (or general substance abuse, where there have not been studies of methamphetamine in particular). Using these numbers, CBER analysts were able to estimate that the cost of a methamphetamine using employee is approximately $47,500. The next step was for CBER researchers to apply the costs associated with methamphetamine use to the number of methamphetamine-using employees in Benton County.

Two methodologies were employed to estimate the number of employees in Benton County who use methamphetamine. First, the national substance user rate of employment was applied to an estimate of the number of substance users, based on a usage rate of 1.7 percent for the population between the ages of 18 and 24 and a usage rate of 0.4 percent for the population between the ages of 25 to 64. This methodology yielded a total of 446 Benton County employed methamphetamine users. The full results of the cost estimation are shown in Table 18. The total annual cost to Benton County employers using this methodology was just over $21 million.

Table 18—Estimates of the cost of methamphetamine use by employees to Benton County businesses using Methodology 1

	Estimate	Cost	Source
Absenteeism			
Benton County Population, 18-24	15,459		U.S. Census Bureau, 2003
Benton County Population, 25-64	83,835		U.S. Census Bureau, 2003
Benton County Methamphetamine Users, 18-64	598		2002 National Survey on Drug Use and Health; usage rate of 1.7% applied to 18-24s and 0.4% to 25-64s in Benton County
National Substance User Employment Rate	0.746		2002 National Survey on Drug Use and Health

	Estimate	Cost	Source
Benton County Employed Methamphetamine Users	446		CBER Estimate
Annual Workdays Per Worker	240		52x5-10 vacation-10 holidays
Total Workdays by Benton County Methamphetamine Users	107,066		CBER Estimate
National Absenteeism Rate	0.025		CCH Annual Survey
Substance User Multiple	7		National Drug-Free Workplace Alliance
Substance User Absenteeism Rate	0.175		National Drug-Free Workplace Alliance
Benton County Methamphetamine Users Lost Workdays	18,737		CBER Estimate
National Average Cost Per Lost Workday	$600		CCH Annual Survey
Benton County Cost of Methamphetamine User Absenteeism		$11,241,922	CBER Estimate
Productivity			
Benton County Employed Methamphetamine Users	446		CBER Estimate
Times 33%	147		National Drug-Free Workplace Alliance
Benton County Average Wage	$35,000		Bureau of Labor Statistics
Total Wages of Extra Employees	$5,152,547		CBER Estimate
Fringe Benefit Rate	30%		CBER Estimate
Benton County Productivity Costs		$6,698,312	CBER Estimate
Turnover			
Benton County Employed Methamphetamine Users	446		CBER Estimate
Turnover Rate for Illicit Drug Users	25%		National Drug-Free Workplace Alliance; SAMHSA
Turnover Rate for All Employees	15%		National Drug-Free Workplace Alliance; SAMHSA
Excess Turnover	45		CBER Estimate
Employer Costs Per	$7,000		Tennessee Department

	Estimate	Cost	Source
Turnover			of Labor
Annual Benton County Methamphetamine User Turnover Costs		$312,276	CBER Estimate
Employee Theft			
Benton County Employed Methamphetamine Users	446		CBER Estimate
National Number of Substance Abusers	14,690,485		2002 National Survey on Drug Use and Health; usage rates by age applied to population data
Benton County Methamphetamine Users Share	0.003%		CBER Estimate
Total Theft By National Substance Abusers	$65,000,000,000		National Drug-Free Workplace Alliance; SAMHSA
Total Employee Theft By Benton County Methamphetamine Users		$1,973,864	CBER Estimate
Workers Compensation			
Arkansas Overall Claim Frequency	2.3%		Arkansas Insurance Department
Substance Abuser Multiple	5		Drughelp.org
Substance Abuser Claim Frequency	11.5%		CBER Estimate
Benton County Employed Methamphetamine Users	446		CBER Estimate
Benton County Employed Methamphetamine User Claims	51		CBER Estimate
Average Cost Per Claim	$5,247		Arkansas Insurance Department
Total Cost of Benton County Methamphetamine User Claims		$269,184	CBER Estimate
Healthcare Costs			
National Healthcare Costs of Substance Abuse	$22,221,000,000		National Institute on Drug Abuse, 1997 estimate of $12.9 billion, adjusted for healthcare

	Estimate	Cost	Source
			price changes
Benton County Employed Methamphetamine Users	446		CBER Estimate
National Number of Substance Abusers	14,690,485		2002 National Survey on Drug Use and Health; usage rates by age applied to population data
Benton County Employed Methamphetamine Users Share	0. 003%		CBER Estimate
Benton County Employer Medical Costs Attributed to Methamphetamine Users		$674,788	CBER Estimate
Estimated Total Cost of Employed Methamphetamine Users to Benton County Employers		**$21,170,345**	CBER Estimate

The second methodology used to estimate the number of Benton County employees who are methamphetamine users involved applying the rate of recent methamphetamine users from the survey of Benton County employees. A total of 0.5 percent of the survey respondents admitted to using methamphetamine in the last year. This rate was applied to the September 2004 Benton County employment number of 85,175 to yield an estimate of 425 employed methamphetamine users in Benton County. Table 19 shows the cost calculation for this methodology and the total annual cost to Benton County employers of just over $20 million.

The two methodologies of estimating the number of methamphetamine-using employees in Benton County yield remarkably similar results. The estimated annual costs of methamphetamine use by Benton County workers then can be reasonably assumed to lie in the range of $20 million to $21 million.

Table 19—Estimates of the cost of methamphetamine use by employees to Benton County businesses using Methodology 2

	Estimate	Cost	Source
Absenteeism			
Benton County Employment	85,175		Arkansas Employment Security Division
Benton County Employed Methamphetamine User Rate	0.5%		Fall 2004 Benton County Employee Survey Results
Benton County Employed Methamphetamine Users	425		CBER Estimate
Annual Workdays Per Worker	240		52x5-10 vacation-10 holidays
Total Workdays by Benton County Methamphetamine Users	102,000		CBER Estimate
National Absenteeism Rate	0.025		CCH Annual Survey
Substance User Multiple	7		National Drug-Free Workplace Alliance
Substance User Absenteeism Rate	0.175		National Drug-Free Workplace Alliance
Benton County Methamphetamine Users Lost Workdays	17,850		CBER Estimate
National Average Cost Per Lost Workday	$600		CCH Annual Survey
Benton County Cost of Methamphetamine User Absenteeism		$10,710,000	CBER Estimate
Productivity			
Benton County Employed Methamphetamine Users	425		CBER Estimate
Times 33%	140		National Drug-Free Workplace Alliance
Benton County Average Wage	$35,000		Bureau of Labor Statistics
Total Wages of Extra Employees	$4,908,750		CBER Estimate
Fringe Benefit Rate	30%		CBER Estimate
Benton County Productivity Costs		$6,381,375	CBER Estimate
Turnover			
Benton County Employed Methamphetamine Users	425		CBER Estimate

	Estimate	Cost	Source
Turnover Rate for Illicit Drug Users	25%		National Drug-Free Workplace Alliance; SAMHSA
Turnover Rate for All Employees	15%		National Drug-Free Workplace Alliance; SAMHSA
Excess Turnover	43		CBER Estimate
Employer Costs Per Turnover	$7,000		Tennessee Department of Labor
Annual Benton County Methamphetamine User Turnover Costs		$297,500	CBER Estimate
Employee Theft			
Benton County Employed Methamphetamine Users	425		CBER Estimate
National Number of Substance Abusers	14,690,485		2002 National Survey on Drug Use and Health; usage rates by age applied to population data
Benton County Methamphetamine Users Share	0.003%		CBER Estimate
Total Theft By National Substance Abusers	$65,000,000,000		National Drug-Free Workplace Alliance; SAMHSA
Total Employee Theft By Benton County Methamphetamine Users		$1,880,469	CBER Estimate
Workers Compensation			
Arkansas Overall Claim Frequency	2.3%		Arkansas Insurance Department
Substance Abuser Multiple	5		Drughelp.org
Substance Abuser Claim Frequency	11.5%		CBER Estimate
Benton County Employed Methamphetamine Users	425		CBER Estimate
Benton County Employed Methamphetamine User Claims	49		CBER Estimate
Average Cost Per Claim	$5,247		Arkansas Insurance Department
Total Cost of Benton County		$256,447	CBER Estimate

	Estimate	Cost	Source
Methamphetamine User Claims			
Healthcare Costs			
National Healthcare Costs of Substance Abuse	$22,221,000,000		National Institute on Drug Abuse, 1997 estimate of $12.9 billion, adjusted for healthcare price changes
Benton County Employed Methamphetamine Users	425		CBER Estimate
National Number of Substance Abusers	14,690,485		2002 National Survey on Drug Use and Health; usage rates by age applied to population data
Benton County Employed Methamphetamine Users Share	0. 003%		CBER Estimate
Benton County Employer Medical Costs Attributed to Methamphetamine Users		$642,860	CBER Estimate
Estimated Total Cost of Employed Methamphetamine Users to Benton County Employers		**$20,168,651**	CBER Estimate

Conclusions

The costs of methamphetamine use to Benton County employers have been shown to range from $20 million to $21 million, annually. These costs come from six major categories: increased absenteeism, lost productivity, increased turnover, increased employee theft, increased worker compensation claims, and increased healthcare premium costs. CBER researchers estimate that between 425 and 446 Benton County employees use methamphetamine and that the average cost to the firm of each employed methamphetamine user is about $47,500.per year?

A survey was conducted of Benton County employees to ascertain their demographic characteristics, workplace habits, and methamphetamine use. About 4.7 percent of respondents indicated that they had used methamphetamine during their lifetimes and 0.5 percent of the respondents indicated that they had used methamphetamine within the past year. These results are statistically similar to those found in national surveys and help to add credibility to the cost estimates.

While this study focused on Benton County, Arkansas, communities throughout the United States face methamphetamine use epidemics. The methodologies employed in this study could be replicated for any other community to help policy-makers and business leaders understand the true cost of employee methamphetamine use.

Finally, the ultimate benefit of the study lies in the translation of the quantified impact of methamphetamine usage on the bottom line of Benton County businesses into a systematic and strategic response designed to minimize future costs resulting from this extremely harmful drug.

Appendix A: Results of Literature Review

Arkansas Department of Human Services, Alcohol and Drug Abuse Prevention Division (2003). *Arkansas Prevention Needs Assessment Student Survey 2003 Results For Benton County*. Little Rock, Arkansas.
http://www.occe.ou.edu/swpc/DAAC/Arkansas_reports/County/Bentonco2003report.pdf

> This survey was administered, for the second year in a row, to students in school districts in Arkansas. The survey was designed to assess adolescent substance abuse and related behaviors, along with risk and protective factors that predict these behaviors. The survey was conducted among 6th, 8th, 10th and 12th graders. The results for each local area are intended to be used to help school and community planners assess current conditions and prioritize areas of greatest need. Two usage rate tables for Benton County include methamphetamine among the list of alcohol, tobacco and other drugs. Usage rates are shown for each of the four grade levels, and the state usage rates are shown for comparative purposes. The results for Benton County 12th graders showed that 6.0 percent of the students had used methamphetamine in their lifetimes. The rates were actually higher at the 10th grade level at 6.0 percent.

Arkansas Small Business Development Center (ASBDC).
http://www.asbdc.ualr.edu/drugfree/facts.asp.

> The ASBDC nurtures and provides education, training and support to small businesses in Arkansas. The impact of substance abuse on small businesses may be even greater than that on large businesses. This link has interesting data on the differences in illicit drug use of a variety of industry and occupational categories.

Associated Press. "Employers Find Surge in Meth Use," July 23, 2004, KRON 4 News, San Francisco, http://www.kron.com/Global/story.asp?S=2082613.

> Quest Diagnostics Incorporated, a drug-testing firm found a 68% surge in job applicants and workers testing positive for methamphetamine in 2003. About 0.3 percent of workers tested positive for methamphetamine and 4.5 percent tested positive for some illegal drug.

Columbia University College of Physicians and Surgeons. "Drugs in the Workplace."
http://www.healthsciences.columbia.edu/texts/guide/hmg06_0008.html

> This study showed how drugs decrease the efficiency of the American workforce, primarily due to the lost productivity of workers who are substance abusers.

Cornerstone Behavioral Health. http://www.cornerstonebh.com/meth1.htm.

Cornerstone is an outpatient clinic, providing mental health and substance abuse treatment services to the residents of southwestern Wyoming. This site is indicative of many entities providing substance abuse services to localities across the country. This site had a very good overview of the various aspects of methamphetamine.

Drug Enforcement Administration (DEA). http://www.dea.gov/.

DEA is an organizational unit of the U.S. Department of Justice. It is the agency responsible for enforcing the controlled substances laws and regulations of the United States. The website contains some statistical information on substance abuse which is derived from DEA's enforcement activities. There are also fact sheets available for each state, which are brief profiles of the controlled substance situation in each state.

DrugHelp.org. http://www.drughelp.org/.

DrugHelp was developed as a public, non-profit service of the American Council for Drug Education (ACDE), providing Information on specific drugs and treatment options, and referrals to public and private treatment programs, self-help groups, family support groups and crisis centers throughout the United States. It has an information page on drugs, alcohol and the workplace.

Johnston, L.D., O'Malley, P.M., Bachman, J.G. & Schulenberg, J.E. (2003). *Monitoring the Future: National Survey Results on Drug Use, 1975-2003: Vol. 1, Secondary School Students.* (NIH Publication No. 04-5507). Bethesda, MD: National Institute on Drug Abuse.

Monitoring the Future began in 1975. It is a long-term study which captures trends in illicit drug use among adolescents, college students and adults through age 45. (This volume does not include the 2003 results for college students and adults through age 45. Additional volumes of the study will be published at a later date.) The adolescent portion of the survey is administered to just under 50,000 students nationwide who are in the eighth, tenth or 12th grades. The study showed broad declines in drug use among adolescents, particularly marijuana and ecstasy. Methamphetamine has in recent years shown declines in all three grade levels surveyed. In 2003, use continued to decline in the upper two grades but not among 8th graders.

Meth Education for Elementary Schools (MEDFELS). Southeast Missouri University. http://cstl.semo.edu/coned/medfels/text_meth_cost.htm.

MEDFELS is a local organization which seeks to assists third and fourth grade teachers in presenting an accurate portrayal of the dangers associated with the manufacture, distribution and use of methamphetamine. This link is to a page that contains a good discussion of the various types of costs related to methamphetamine usage.

National Council on Alcoholism and Drug Dependence (NCADD). http://www.ncadd.org/facts/workplac.html.

NCADD provides education, information, help and hope to the public. It advocates prevention, intervention and treatment through offices in New York and Washington, and a nationwide network of Affiliates. This website includes a number of informative fact sheets on topics such as "Alcohol and Other Drugs in the Workplace."

National Drug-Free Workplace Alliance. http://www.ndfwa.org/statistics.htm.

The Alliance works to support drug-free workplace efforts by providing comprehensive drug-free workplace services to America's businesses in three ways:

- helping communities and states establish local programs for the benefit of businesses, especially small businesses and their employees.
- education of drug-free workplace program directors, as well as other professionals in the field.
- assisting employers, unions and trade organizations in establishing drug-free workplace programs.

National Drug-Free Workplace Alliance. "Drug-Free Workplace Statistics." http://www.ndfwa.org/statistics.htm.

This collection of statistics provided some very important information in terms of estimating the cost of methamphetamine use to Benton County businesses. Bullet points included in the study follow:

Total Cost of Substance Abuse to U.S. Businesses

- $160.7 billion in 2000.
- 69 percent was from productivity losses related to drug use.
- Small businesses bear the greatest share of this burden.

Substance Abuse Costs for Employers

- Absenteeism is 3.8 to 8.3 times higher for substance abusers than for other employees.
- Substance abusers are 33 percent less productive, costing their employers $7,000, on average, annually.
- Drug-users are 3.6 times more likely to be involved in workplace accidents and five times more likely to file a workers' compensation claim.
- Substance abusers file 38 to 50 percent of all workers' compensation claims.

- Substance abusers are three times more likely to use medical benefits than other employees.
- In 1997, workers who reported current illicit drug use were more likely than those who did not report illicit drug use to have worked for three or more employers (9% vs. 4%) and voluntarily left an employer in the past year (25% vs. 15%) and to have skipped one or more days of work in the past month (13% vs. 5%).
- 80 percent of drug users steal from their workplaces to support their drug use.
- Substance abuse is the third leading cause of workplace violence.

National Drug-Free Workplace Alliance. "Alcohol and Other Drug Use in Your Workplace: Impact on Workers' Compensation and Company Profits." http://www.ndfwa.org/Information/use%20facts.htm

This fact sheet pointed to the 2001 National Household Survey conducted at the U.S. Department of Health and Human Services, SAMHSA, for the result that 76.4 percent of drug-users are employed.

National Institute on Drug Abuse (NIDA). http://www.nida.nih.gov/.

A part of the National Institutes of Health, the mission of NIDA is to bring "to lead the Nation in bringing the power of science to bear on drug abuse and addiction". It has resources organized for three primary constituent groups: researchers and health professionals, parents and teachers and students.

National Institute on Drug Abuse. "Monitoring the Future: National Results on Drug Use, 1975-2003."
http://www.monitoringthefuture.org/pubs/monographs/vol1_2003.pdf.

This survey involves secondary school students and showed that in 2003, 8.9 percent of young adults had used various drugs.

Office of Drug Strategies, City and County of Denver.
http://www.denvergov.org/Drug_Strategies/1178aboutus.asp.

Illustrative of many similar sites, this office in the City and County of Denver seeks to educate the community in the areas of substance abuse and addiction, prevention, intervention, treatment, transition and recovery. The website makes available a number of fact sheets, including one on the impact of drug and alcohol use in the workplace.

Office of National Drug Control Policy (ONDCP).
http://www.whitehousedrugpolicy.gov/.

ONDCP is housed in the White House. It is the overall coordinating office for establishing policies, priorities, and objectives for the Nation's drug control program. The goals of the program are to reduce illicit drug use, manufacturing, and trafficking, drug-related crime and violence, and drug-related health consequences. The ONDCP is charged with producing the National Drug Control Strategy. The Strategy directs the Nation's anti-drug efforts and establishes a program, a budget, and guidelines for cooperation among Federal, State, and local entities. The website is a mix of news, Information and publications related to policy issues, government programs and publications/studies related to substance abuse.

Office of National Drug Control Policy (2001). *The Economic Costs of Drug Abuse in the United States, 1992-1998.* Washington, DC: Executive Office of the President (Publication No. NCJ-190636).

The Office of National Drug Control Policy engaged the Lewin Group to calculate more current estimates of the societal cost of drug abuse. Using the three broad categories of health care costs, productivity losses and other costs, the study develops annual estimates for 1992 through 1998 and projections for 1999 and 2000. The total cost to society was estimated to be $143.4 billion in 1998, and projected to be $160.7 billion in 2000. Productivity losses accounted for by-far the biggest share, at 69 percent. The Other category was estimated to comprise 22 percent of the cost and the health care portion was pegged at 9 percent.

Office of National Drug Control Policy. "Methamphetamine Fact Sheet." November, 2003.

http://www.whitehousedrugpolicy.gov/publications/factsht/methamph/index.html

The National Survey on Drug Use and Health found that in 2002, 5.3 percent of the sample population had ever used methamphetamine. 0.7 percent of the sample had used methamphetamine in the past year, while 0.3 percent of the survey respondents had used methamphetamine in the past month.

Quest Diagnostics.
http://www.questdiagnostics.com/employersolutions/DTI_07_2004/dti_index.html.

Quest Diagnostics is a leading company in terms of performing on-the-job drug testing and background checks on prospective employees. From its drug testing data, it also produces the semi-annual Drug Testing Index, which gives positivity ratings for various illicit drugs.

The Robert Wood Johnson Foundation (2001). *Substance Abuse: The Nation's Number One Health Problem, Section 3.* Princeton, New Jersey.

The Robert Wood Johnson Foundation commissioned Brandeis University's Schneider Institute for Health Policy to conduct a study to gain insight into public

opinion as to the importance of illicit drug use as a national problem. The study found that overall rates of substance abuse are declining, and that public intolerance of abuse is rising. Yet it also found some disturbing trends on the horizon. Adolescents are beginning to use alcohol, tobacco and illicit drugs at increasingly younger ages. Young adults, who are just entering the workforce, more likely than any other age group to smoke tobacco, drink alcohol and use illicit drugs. And clusters of substance abuse, the use of multiple substances, are emerging in lower income groups. In terms of combating the problem, the report advocates two major strategies: reducing the supply of illicit drugs while simultaneously reducing Americans' demand for drugs.

Stop Meth, Montana. http://www.stopmeth.com/costs.htm

Stop Meth, Montana is a local organization in a state ranked very high for methamphetamine usage. The linked page illustrates in a very practical way some of the community costs associated with methamphetamine usage.

Substance Abuse and Mental Health Services Administration (SAMHSA). http://www.samhsa.gov/index.aspx.

A part of the U.S. Department of Health and Human Services, the mission of SAMHSA is to build resilience and facilitate recovery for people with or at risk for substance abuse and mental illness. It formulates public policy, provides research funding and acts as a clearinghouse for Information related to mental health issues and substance abuse.

Tennessee Department of Labor and Workforce Development. "Drug Free Workplace Program." http://www.state.tn.us/labor-wfd/dfwp.html.

Employer costs related to substance abuse are described, drug-free workplace programs are described as a primary solution for mitigating the costs associated with substance abuse.

U.S. Department of Health and Human Services (2002). *National Survey on Drug Use and Health: National Findings (NSDUH).* Washington, DC.

NSDUH is the primary source of statistical Information on substance use and abuse by the U.S. population. This survey was initiated in 1971, and over the years, the frequency, size, sample design, methods of administration, and content have changed. The current survey collects Information from a representative sample of the population through face-to-face interviews at their place of residence. The survey covers illicit drugs, tobacco and alcohol. Results are tabulated by substance, by frequency of use, by age, by employment status, by ethnicity and other demographic factors. A few changes were made to the survey in 2002, making it difficult in some instances to make valid comparisons with prior years' data.

U.S. Small Business Administration (SBA).
http://www.sba.gov/gopher/Business-Development/Success-Series/Vol6/substanc.txt.

The SBA is the primary government advocate for small businesses in the U.S. This site addresses some of the substance abuse issues which are unique to small businesses.

Appendix B: Full Results of Multinomial Logit Estimation

Table 20: Multinomial Logit Estimation—Dependant Variable was Ever Used Methamphetamine

Variable	Coefficient	Standard Error	Marginal Effect
Female	-0.99	0.41	-0.71%
Hispanic*	-30.23	22.38	-1.66%
African American	-29.76	54.94	-0.81%
Asian	-30.32	44.90	-0.85%
Other Ethnicity	-29.10	28.99	-1.22%
High School Diploma*	-1.86	0.50	-1.40%
Undergraduate Degree*	-1.52	0.56	-0.85%
Graduate Degree*	-2.60	0.86	-0.99%
Six-month Tenure	0.53	0.70	0.45%
One-year Tenure	0.65	0.54	0.57%
Five-year Tenure	0.13	0.42	0.09%
Income (in $10,000's)*	-0.24	0.10	-0.16%

*Significant at the 95 percent confidence level.