

THE COSTS OF UNTREATED MENTAL ILLNESS IN GREATER KANSAS CITY

Prepared by



for



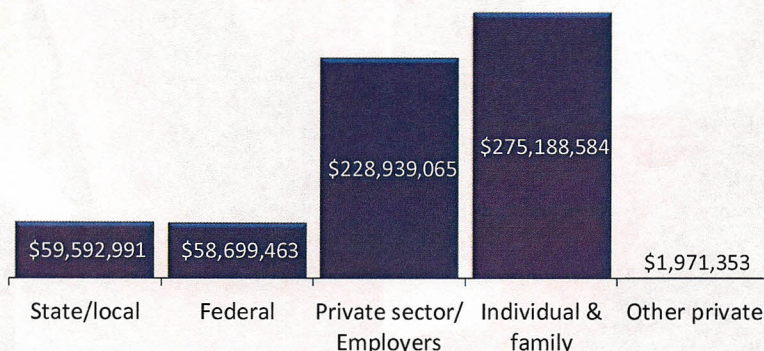
Executive Summary

Approximately one in every 10 adults in the Greater Kansas City area* has a serious mental illness (SMI)**. Although serious mental illnesses such as major depression, schizophrenia, bipolar disorder, and anxiety disorders can be effectively treated, about 40% of cases are untreated. Without treatment, SMI can lead to unemployment, increased hospital and emergency room use, incarceration, suicide, and early death due to chronic medical conditions.

An economic model was developed by The HSM Group, Ltd. to quantify the costs of untreated SMI among adults. Census data was combined with mental illness prevalence rates to estimate 94,478 cases of untreated SMI in Greater Kansas City. The costs associated with SMI were estimated using peer-reviewed publications and public datasets.

Overall, the annual cost burden of untreated SMI to Greater Kansas City is estimated to be \$624 million. A high proportion, 87.5%, of these costs is in the form of indirect costs to employers and individuals. Indirect costs include unrealized earnings due to higher unemployment rates, the cost of lost productive time at work due to untreated SMI (presenteeism), time missed from work (absenteeism), and unrealized earnings due to permanent disability or premature death (suicides). About 10.5% of the overall costs are estimated to be direct costs, or medical expenses associated with lack of sustained treatment. Direct costs include increased inpatient care/hospitalizations, outpatient care, and long-term care/nursing homes. The remaining costs are due to criminal activity, Social Security disability, and social welfare administration costs.

Who Bears the Costs of Untreated Mental Illness in Greater Kansas City



Untreated SMI is associated with an estimated 67 suicides in Greater Kansas City, more than 11,000 incarcerations, and more than 15,000 unemployed adults.

The quantitative model also estimates who bears the \$624 million of untreated adult SMI costs in the Greater Kansas City metro area. SMI costs state (Missouri and Kansas) and local governments over \$59.6 million per year and the federal government, \$58.7 million per year. SMI costs the private sector, including employers, about \$228.9 million per year. Unrealized earnings for individuals due to unemployment, disability, institutionalization, or suicide amount to approximately \$275.2 million annually.

SMI also affects a whole spectrum of lifestyle factors that, although very important and often preventable, could not be quantified in this model. SMI patients often have problems integrating into society, deteriorating physical health, as well as personal and family relationships that suffer, frequently leading to domestic violence.

*This designation includes Cass, Jackson, and Lafayette counties in Missouri, and Johnson and Wyandotte counties in Kansas.

**Serious mental illness includes major depression, schizophrenia, bipolar disorder, obsessive compulsive disorder, panic disorder, post-traumatic stress disorder, and borderline personality disorder.

Methodology

The goal in quantifying the costs of untreated mental illness was to use the most recent data for estimating prevalence and the best available peer-reviewed published research for estimating costs. In doing so, we used conservative estimates whenever there were discrepancies, so as to not overstate the cost burden. PubMed and Google Scholar were used to conduct literature searches.

The Prevalence of Untreated Serious Mental Illness

Either individually or in combination, serious mental illnesses affect between 10% and 15% of the population annually. Combining 2010 Census data with the most recent national prevalence rates^{1,2} for the four most common categories of SMI, it is estimated that **224,593 adults in Greater Kansas City have a serious mental disorder.**

Overall Prevalence of Serious Mental Illnesses

| | |
|-------------------|-------|
| Major Depression | 6.6% |
| Bipolar Disorder | 2.7% |
| Schizophrenia | 0.5% |
| Anxiety Disorders | 10.2% |

Treatment

Treatments for serious mental illnesses are generally effective. The National Alliance on Mental Illness estimates that between 70% and 90% of patients experience a significant reduction of symptoms and improved quality of life when pharmacological and psychosocial treatments are combined³.

Despite this, the percent of untreated cases is near 40% for each SMI category⁴⁻⁸, as reported by peer-reviewed published literature. Given the population of Greater Kansas City in 2011, there are approximately 94,478 individuals with a serious mental illness that are not treated.

Overall Percent of Untreated Cases

| | |
|-------------------|-------|
| Major Depression | 43.2% |
| Bipolar Disorder | 44.5% |
| Schizophrenia | 35.7% |
| Anxiety Disorders | 41.0% |

Indirect Costs

Indirect costs are the hidden costs to employers and individuals for missed work due to SMI. When an employee has lower productivity due to SMI, there is an (indirect) cost to the employer as they are paying for output that is not being performed⁹⁻¹¹. Similarly, unemployment due to SMI is an indirect cost to individuals and families.

In most cost-of-illness studies across a wide span of mental and physical illnesses, indirect costs make up a large proportion of the total costs. The same held true in this model's estimates of untreated SMI. The indirect costs are staggering, making up 87.5% of the total overall cost burden of untreated SMI. Employers bear a huge cost when their employees and dependents are not treated. Compared to the general population, employees with mental illness have a significantly higher rate of absenteeism⁹⁻¹¹ (days entirely missing from work). Absenteeism due to untreated SMI costs employers in Greater Kansas City is \$53.6 million annually.

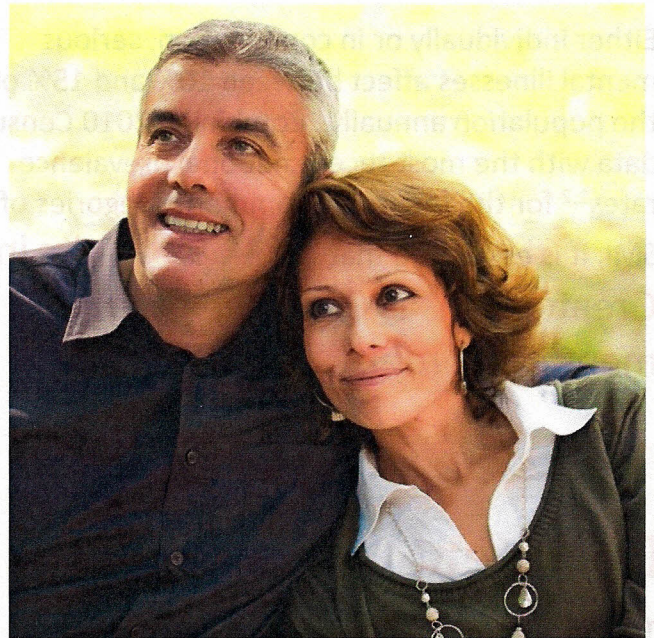
An even greater problem for employers is presenteeism, or lost productivity while at work.

Research has shown that employees with untreated mental illness also are far less productive compared to those who are successfully treated⁹⁻¹¹. Presenteeism due to untreated SMI costs employers in Greater Kansas City \$160.7 million annually.

Untreated SMI also undermines individuals' income-earning potential. There is published evidence of income disparity between those with SMI and the general population, for both men and women¹². Overall, those with SMI earn

about \$16,000 less per year than those without. In Greater Kansas City, individuals and families miss over \$273 million annually in unrealized earnings due to SMI.

The cost model also included unrealized earnings due to suicide, which amounted to \$59.1 million annually in Greater Kansas City. This is income that would have been earned if employed workers with SMI had lived and continued working until retirement.



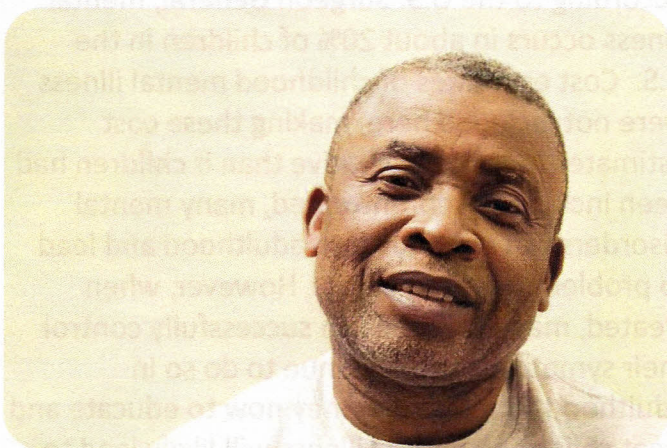
Medical Costs

Direct costs are costs for medical treatment and services. These include medical resources used for care, treatment, and rehabilitation.

Research has shown that untreated mental illness can lead to the need for much more resource-intensive care than if the patient were getting regular care and treatment¹³⁻¹⁵ ;

for instance, when SMI patients visit the ER in crisis mode and require hospitalization until they are stable. The increased inpatient treatments and hospitalizations amount to \$39.9 million per year in Greater Kansas City. Annual outpatient care costs are \$6.7 million and the cost to mental health organizations is \$5.6 million.

Additionally, due to lack of treatment, the disease can progress to a point where patients need to be institutionalized (in nursing homes or long-term care facilities), which ends up costing Greater Kansas City an additional \$13.4 million per year.



Other Costs

Greater Kansas City is burdened by other costs besides the direct and indirect costs previously mentioned. Due to criminal behavior that would not otherwise occur if patients were being treated, SMI leads to \$8.2 million annually in costs to the criminal justice system. Going without treatment can lead to more severe, more difficult-to-treat illness or even to permanent disability, which costs the welfare system \$3.9 million per year.

Preventable Serious Mental Illness Outcomes

| | |
|---------------|---|
| 67 | Suicides Attributed to Untreated Mental Illness |
| 11,665 | Incarcerations due to Untreated Mental Illness |
| 15,329 | Unemployed Adults due to Untreated Mental Illness |

Suicides

Research has shown that suicide is strongly correlated with serious mental illness¹⁶. Estimates vary as to the percent of suicides that are directly caused by mental illness, and range from 20% up to 60% with the upper end of that range far more common. In the quantitative model, 40% was used. Using a conservative overall suicide rate of 15 per 100,000, the model estimated 67 suicides in Greater Kansas City can be attributed to SMI annually.

Incarcerations

Those with severe mental illness are **10 times more likely to become incarcerated compared to the general population**¹⁸.

Using national rates of incarceration, we estimated an incarceration rate of 7.43% for those with severe mental illness in Greater Kansas City. The model therefore estimated 11,665 of those with severe mental illness in Greater Kansas City were incarcerated at least once in a 12-month period. In Greater Kansas City, these incarcerations resulted in annual costs of \$8.2 million to the criminal justice system.

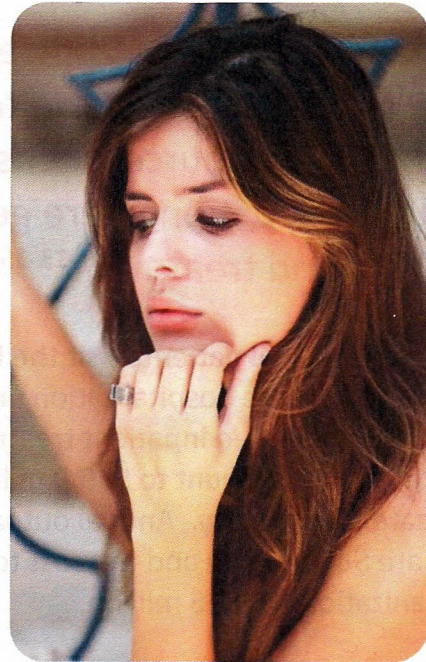
Unemployment

Those who suffer from SMI have difficult barriers to overcome in obtaining and maintaining employment²⁰⁻²¹. Lack of treatment further exacerbates the difficulty. Unemployment rates vary by type of mental illness, but taking into account the published literature, we estimate that overall **about 24% of those with SMI are unemployed at any given time**, and about half of those cases are due to lack of treatment. In Greater Kansas City, this amounts to 15,329 adults who are unemployed due to lack of treatment for SMI.

Homeless

Homelessness rates have been found to be substantially higher for those with SMI compared to the general population¹⁹. About 20-25% of the homeless population suffers from some form of SMI and very few of these receive treatment.

Using local point-in-time estimates of the homeless population in 2011 in Greater Kansas City, about 548 individuals with SMI were homeless. Due to other costs attributed to this population, no additional costs were attributed to homelessness to avoid double-counting costs.



Childhood Mental Illness

According to the U.S. Surgeon General, mental illness occurs in about 20% of children in the U.S. Cost estimates of childhood mental illness were not included here, making these cost estimates more conservative than if children had been included. Left untreated, many mental disorders can continue into adulthood and lead to problems in many areas. However, when treated, many children can successfully control their symptoms and continue to do so in adulthood. Spending money now to educate and treat childhood mental illness will likely lead to the avoidance of indirect and direct costs later in life.

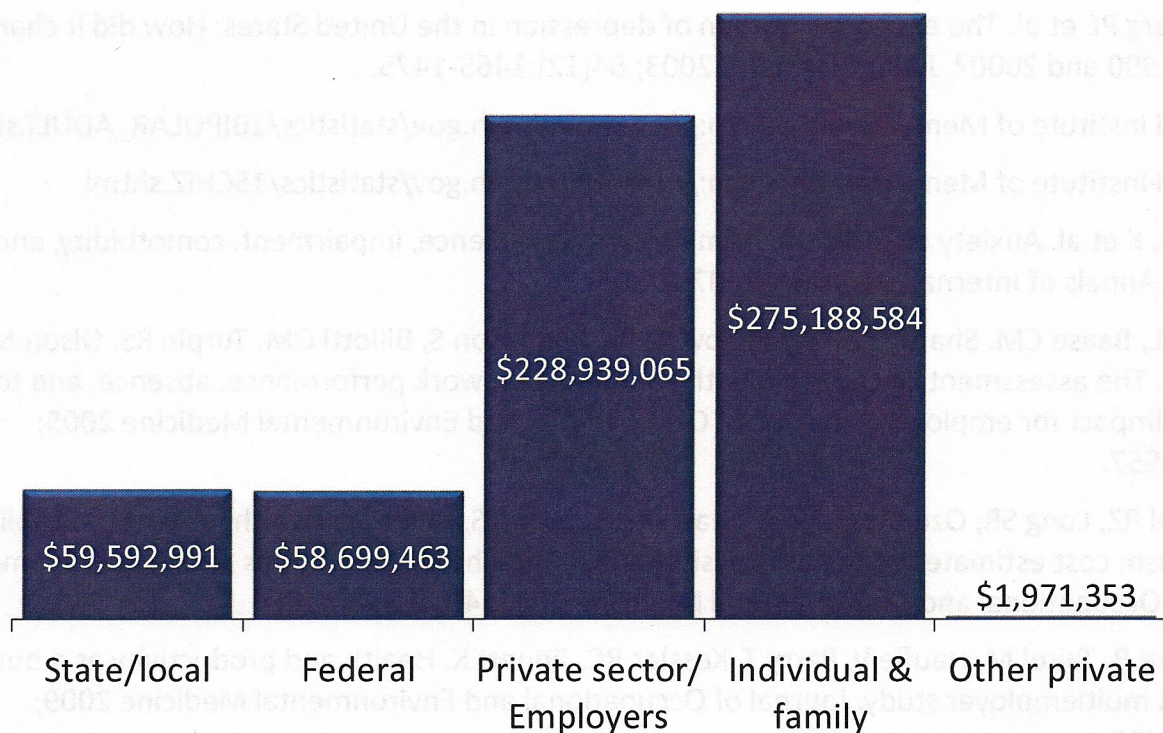
Who Pays for the Costs?

Preventable hospitalizations, outpatient visits, and nursing home stays cost state, federal, and private payers millions of dollars. **The estimated burden to state and local governments in Greater Kansas City is \$59.6 million annually.** The burden to the federal government is \$58.7 million annually. These are costs that could be avoided if those with untreated mental illness were receiving timely treatment.

Greater Kansas City's employers would also reap great savings from a more productive workforce and avoid medical and disability costs. Absenteeism and presenteeism cost employers \$228.9 million annually. Improving the mental health of employees and their dependents would make Greater Kansas City businesses more productive, more profitable, and more competitive.

And while individuals and families never have to pay for the indirect costs we estimate from unemployment and reduced wages, it is a huge amount of unrealized earnings that could be pumped into the economy of Greater Kansas City businesses: \$275.2 million annually. Since we assumed fairly low individual earnings, most of this unearned income would have been spent on basic goods and services that support the local economy.

Who Pays – Total Costs
Greater Kansas City



Conclusions

Our examination of peer-reviewed published literature and the national cost-of-illness studies undertaken on mental illness have shown that treating mental illness will have financial rewards over time. One barrier might be reluctance to consider mental illness on par with physical illnesses. However, in the Surgeon General's report on mental health, unipolar major depression was the second-leading source of

disease burden worldwide, behind only heart disease. Another important point of that report was the link between mental health and physical health. Poor mental health is usually the cause of poor physical health, which leads to increased societal costs that have not been estimated in this model. Some might argue that state and local governments cannot afford to improve the treatment rate of the seriously mentally ill. This economic model shows that improving the treatment rate for the mentally ill is something they cannot afford to ignore.

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